# Current Affairs
# MONTHLY

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## For HPAS & Other Competitive Exam in Himachal Pradesh

## Mains

# GEOGRAPHY AND ENVIRONMENT

## CONCRETIZATION

- A day after a 'severe' category thunderstorm hit the Delhi pavements and roads were strewn with tree branches and trunks that had snapped, and full-grown trees that were uprooted entirely.
- Poor root growth due to concretization could be a factor that caused trees to keel over
- Most trees have 'feeder roots' that are in the upper layers of the soil. These roots take nutrients and moisture, and have symbiotic fungi in and around them. But these roots cannot survive under concrete, since they need oxygen.
- If the space around trees is covered with concrete, there will be no life beneath the concrete
- An NGT order from 2013 states that concrete within a 1 metre radius of trees is to be removed. A notice was issued in 2019 by the forest department; informing all departments and civic agencies that concretisation of trees damages them and is an offence under the Delhi Preservation of Trees Act, 1994.
- Leaving 1 metre around the trees is not enough to have sustainable growth of avenue trees. They need to have good feeder roots that can spread to take in nutrients.

**Deepor Beel**
- Assam's Deepor Beel is perishing from concretisation and waste dumping. Deepor Beel has shrunk around 35 per cent in size since 1991.

**What's happening?**
- Threatened habitats, littered lake
- A 24-hectare garbage dumping yard lies to the east of the lake in Boragaon. Birds and animals feed on rotten flesh and waste from the site, littering the water body and threatening their lives
- Huge mountains of solid waste are turning the picturesque lake into a stinking drain
- Concrete factories, houses and warehouses built illegally on the wetland damage the ecology.
- Rail track impacts wildlife
- A railway line passing through the bird sanctuary has also been posing a danger to the wildlife in and around the lake.
- At least 14 jumbos were killed crossing the railway track till 2014 between Rani Reserve Forest and Deepor Beel.
- Lost livelihoods
- The deterioration of the lake harmed the livelihoods of several hundred fishers who have depended on it for generations. The government has banned fishing in the core area of the lake.
- Discharge from a local oil refinery has been further polluting the water and inducing kerosene-like smell in the fish

**Deepor Beel**
- It is one of the largest freshwater lakes in Assam and the State's only Ramsar site besides being an Important Bird Area by Birdlife International.
- It is located towards the southwest of Guwahati city, Assam and is the erstwhile water channel of River Brahmaputra.

**Importance:**
- It constitutes a unique habitat for aquatic flora and avian fauna.
- It has both biological and environmental importance besides being the only major storm-water storage basin for Guwahati city.

- It provides a means of livelihood for a number of local families.

## NTPC's Biodiversity Policy

- National Thermal Power Corporation Limited (NTPC Ltd) issued a renewed Biodiversity Policy 2022.
- It is an integral part of NTPC's Environmental Policy and its objectives are aligned with environmental and sustainability policies.

**Objectives of the Policy:**
- To support all the professionals of the NTPC Group to help them contribute toward the achievement of the targets set in this field.
- To achieve a 'no net loss' of biodiversity at all of its currently operating sites and ensure there is a net positive balance wherever applicable.
- To mainstream the concept of biodiversity across NTPC's value chain and adopt a precautionary approach for sustainable management of biodiversity in all the decision-making processes.

**Expected outcomes of the policy:**
- Overall conservation will increase with participation from business/firm's side.
- Better practices of conservation will be known and will yield better results.
- Grass root participation will make people feel more connected to the cause.

**About NTPC**
- NTPC Ltd. is a central Public Sector Undertaking (PSU) under the Ministry of Power.
- It is India's largest energy conglomerate with roots planted way back in 1975 to accelerate power development in India.
- It became a Maharatna company in 2010.

## Valmiki Tiger Reserve

- The forest department of Bihar has established an elephant rescue centre at Bihar's Valmiki Tiger Reserve (VTR) to rehabilitate stray, abandoned and injured elephants
- The facility is in the process of getting approval from the central government
- VTR is spread over 899 square kilometres in West Champaran district, with Nepal to its north and Uttar Pradesh to its west.
- VTR provides the perfect atmosphere for elephant habitation
- Several elephants stray into VTR from neighboring Chitwan National Park in Nepal
- The plan is not without drawbacks: The risk of human-animal conflicts, though not new, will remain high

**Valmiki Tiger Reserve**
- Valmiki Tiger Reserve is the only tiger reserve in Bihar and forms the easternmost limit of India's Himalayan Terai forests.
- The forest contains a mix of bhabar and terai tracts and is located in the Gangetic Plains bio-geographic zone.
- In 1978, it was designated as a Wildlife Sanctuary.
- In 1990, Valmiki National Park was established.
- The Valmiki Wildlife Sanctuary and National Park is the country's 18th Tiger Reserve. Valmiki National Park and Valmiki Wild Sanctuary make up the Valmiki Tiger Reserve.
- The tiger reserve shares a border with Nepal's Chitwan National Park.
- The park is bisected by two rivers: the Gandak and the Masan River. Valmiki wildlife sanctuary is bordered on the west by the River Gandak.

- It enters India at Valmikinagar, where it is joined by two rivulets, Sonha and Pachnad, to form the holy Triveni confluence.
- A diverse range of flora and fauna can be found in the Valmiki National Park. Moisture-bearing Sal forests, dry-bearing Sal forests, moist mixed deciduous forests without Sal, cane, and tropical seasonal swamp forests with reed beds and wet grasslands make up the park.
- Fauna includes – Mammals: tiger, rhinoceros, black bear, leopard, wild dog, wild buffalo, wild boar, hyena, leopard cat, wild cat, etc
- Reptiles – Python, Cobra, King cobra, Krait, Banded krait, Sand boa, Crocodiles, etc
- Indian bison and one-horned rhinoceros frequently migrate from Chitwan to Valmikinagar.

## AGRICULTURE LAND PRICE INDEX (ALPI)

- IIM-Ahmedabad launches agri land price index
- The index is aimed at removing uncertainty in the agricultural land valuation.
- The index, a prelude to a nationwide gauge to monitor farm land prices, was developed for 107 districts of Andhra Pradesh, Telangana, Karnataka, Maharashtra, Tamil Nadu and Uttar Pradesh, benchmarking land prices for rural and semi-urban areas.
- It would be reliable source in terms of benchmarking land prices and help in conversion of agricultural land into real estate or for industrial use.
- The index would help the government in adopting more scientific measures for providing compensation for land acquisition besides helping financial institutions in underwriting of loan and insurance contracts.
- It would also ensure visibility in movement of agricultural land prices across the country.
- The factors identified for determining the agricultural land price include irrigation facilities, distance to nearest town or airport and proximity to international airport.

**Findings**
- Agriculture land in Karnataka is the most expensive followed by Telangana
- Average agricultural land prices in Karnataka, Telangana and Andhra Pradesh, are reported at Rs 0.93 crore, Rs 0.81 crore and Rs 0.77 crore per acre, respectively, while prices in Uttar Pradesh, Maharashtra and Tamil Nadu are Rs 0.58 crore, Rs 0.49 crore and Rs 0.47 crore, respectively.

## TELANGANA REBELLION & MOVEMENT

- Telangana celebrated its 8th anniversary after becoming a separate state in 2014

**Telangana rebellion**
- The Telangana rebellion was started by a group of peasants in late 1945, against the prevalent jagirdari system where power to collect revenue and govern certain landholdings was installed in certain officers.
- Represented by the Comrades Association, who were affiliated with the Communist Party of India, the rebellion turned violent and clashed with the Razakars, a militia headed by Kasim Rizvi.
- In 1945 Nizam of Hyderabad put forward multiple conditions to join India — all of which were unacceptable to the Indian state
- In the meantime, Kasim Rizvi and his Razakars became increasingly dominating, difficult to ignore presence in Hyderabad.
- He influenced all major decisions the Nizam undertook and installed his chosen men in the government.
- In order to ensure that Hyderabad's already deteriorating law and order condition did not worsen further, India signed the Standstill Agreement with Hyderabad, stating that all administrative agreements that were in place between the Nizam and the British Crown would continue between the Nizam and India.

**'Operation Polo'**

- The signing of the Standstill Agreement, however, ensured peace for only about a year. Almost instantly, Hyderabad started violating the conditions, simultaneously the violent activities of the Razakars increased, creating an atmosphere of anarchy in the state.
- As a last resort, India launched 'Operation Polo' in September 1948 and defeated the rebel forces within five days to make Hyderabad an integral part of India.

**Linguistic Reorganisation**
- In 1955, States Reorganization Committee recommended that Hyderabad be linguistically reorganised.
- Andhra had expressed the desire to integrate the Andhra State and Telangana in order to create Vishalandhra, however the SRC was against this.
- The Committee suggested the idea of maintaining Telangana as an separate state till 1961, where post general elections the state could voluntarily vote to integrate itself with the Andhra State.
- The government ignored this and on passing the States Reorganisation Act later that year, Andhra State and Telangana were merged into a single state called Andhra Pradesh, with Hyderabad becoming the capital.

**The 'Mulki Rules' agitation**
- Telangana region also had what were called the Mulki Rules, which were safeguards in place to ensure that Mulkis or native residents did not face difficulty in procuring government jobs.
- The rules had 4 conditions to be met in order to be classified as a Mulki. When in 1952, the Hyderabad government accepted a large number of non-Mulkis into government positions, protests broke out.
- January 1969 was a turning point as Andhra Pradesh witnessed widespread student protests over the violations of the safeguards that the Gentlemen's Agreement signed between Telangana and Andhra State in February 1956 to allow the formation of Andhra Pradesh.
- While the government took measures to placate the population, the fire barely subsided.

**Call for Telangana Statehood**
- In 1969, the Telangana Praja Samiti was formed to further the call for a separate Telangana state, and when protests for the same turned increasingly violent, the Andhra Pradesh High Court state declared the Mulki Rules null and void, only for the decision to be stopped by a divisional bench of the same court.
- In 1972, when the Supreme Court upheld the Mulki Rules, the Jai Andhra movement asking for a separate Andhra state picked up, causing the state to be put under President's Rule in January 1973.
- Days prior to this in December 1972, Parliament also passed the Mulki Rules Act to limit the operation of Mulki Rules.
- In September of 1973, Indira Gandhi initiated the 32nd Amendment to the Constitution, which declared that Andhra Pradesh would be divided into 6 zones, with reservation for jobs being decided on the basis of zones. As a result of the same, the Mulki Rules Act was repealed.

**The Telangana movement and KCR**
- K Chandrashekhar Rao revived the movement in 2001 when he established his own political party — the Telangana Rashtra Samithi which had the singular aim of establishing a separate Telangana.
- While in 2009 the TRS's performance at the polls was dismal, the party continued to push forward and in September that, post the death of Andhra Pradesh's Chief Minister Y S Rajsekhara Reddy, an opportunity presented itself.
- KCR exploited the political turmoil, beginning a fast unto death and eventually the then Union Home Minister declared that Telangana would achieve statehood, separate from Andhra Pradesh.
- The state of Telangana was finally created on June 2, 2014 after years of political turmoil and repeated reassessment of state boundaries to emerge as a separate state.

## STOCKHOLM CONFERENCE

- The 50th anniversary of the Stockholm conference is being observed.

**About the Stockholm conference:**
- The United Nations Conference on the Human Environment was held in Stockholm between June 5 to June 16, 1972.
- It was the first such worldwide convergence on planetary environment, with the theme **'Only One Earth'.**
- It resulted in the Stockholm Declaration which contained principles and an Action Plan containing recommendations for environmental policy.

**The three dimensions of this conference were:**
- Countries agreeing not to "harm each other's environment or the areas beyond national jurisdiction".
- An action plan to study the threat to Earth's environment.
- Establishment of an international body called the UN Environment programme (UNEP) to bring in cooperation among countries.

**Significance and outcomes of the Stockholm Conference:**
- Until 1972, no country had an environment ministry.
- Norwegian delegates returned from the conference to set up a ministry for the environment.
- India set up its ministry of environment and forest in 1985.

## THE WORLD'S LARGEST PLANT

- The world's largest plant has recently been discovered off the West Coast of Australia: a seagrass 180 km in length.
- The ribbon weed, or Posidonia australis, has been discovered in Shark Bay by a group of researchers
- These researchers have also found that the plant is 4,500 years old, is sterile, has double the number of chromosomes than other similar plants, and has managed to survive the volatile atmosphere of the shallow Shark Bay.

**Plant's Size**
- The ribbon weed covers an area of 20,000 hectares. The next on the podium, the second largest plant, is the clonal colony of a quaking Aspen tree in Utah, which covers 43.6 hectares. The largest tree in India, the Great Banyan in Howrah's Botanical Garden, covers 1.41 hectares.
- The existence of the seagrass was known, that it is one single plant was not.
- Researchers sampled seagrass shoots from across Shark Bay's variable environments and generated a 'fingerprint' using 18,000 genetic markers – the result was sampled seagrass shoots from across Shark Bay's variable environments and generated a 'fingerprint' using 18,000 genetic markers – just one plant has expanded over 180km in Shark Bay, making it the largest known plant on earth.

**How did it grow, and survive for, so long?**
- Sometime in the Harappan era, a plant took root in the Shark Bay. Then it kept spreading through its rhizomes
- Ribbon weed rhizomes can usually grow to around 35cm per year, which is how the scientists arrived at its lifespan of 4,5000 years.
- The researchers found that the ribbon weed cannot spread its seeds, something that helps plants overcome environmental threats.
- The ribbon weed has managed to survive environmental threats – a part of the reason may be that it is a polyploid – instead of taking half-half genome from both parents, it took 100 per cent
- This ribbon weed has twice the number of chromosomes other plants of the same variety have.
- Polyploid plants often reside in places with extreme environmental conditions, are often sterile, but can continue to grow if left undisturbed, and this giant seagrass has done just that

**Seagrass**

- These are flowering plants that grow submerged in shallow marine waters like bays and lagoons.
- These have tiny flowers and strap-like or oval leaves.
- Sea grasses evolved from terrestrial plants that colonised the ocean 70-100 million years ago
- Like terrestrial plants, seagrasses also require sunlight for photosynthesis from which these manufacture their own food and release oxygen

**Reproduction:**
- **Sexual Reproduction Method:** The pollen from the flower of the male plant is transferred to the ovary of the female flower through this method.
- **Asexual Reproduction Method:** Seagrasses can also reproduce asexually by branching off at their rhizomes

**Significance:**
- Seagrasses are considered 'Ecosystem Engineers' as they are known for providing many ecosystem services and are also called 'the lungs of the sea' as they release oxygen into the water through photosynthesis.
- Sequesters up to 11% of the organic carbon buried in the ocean even though they occupy only 0.1% of the ocean floor and absorb 83 million tonnes of carbon from the atmosphere annually.
- Seagrasses can capture carbon from the atmosphere up to 35 times faster than tropical rainforests.
- Help maintain water quality by trapping fine sediments and suspended particles in the water column and increase water clarity.
- Filter nutrients released from land-based industries before they reach sensitive habitats like coral reefs.
- Prevent soil erosion as the extensive vertical and horizontal root systems of seagrasses stabilise the sea bottom.
- Provide food as well as habitat for fishes, octopuses, shrimp, blue crabs, oysters, etc.
- Endangered marine organisms like dugong (Sea Cow), green turtle, etc, graze directly on seagrass leaves.
- Protect juvenile and small adult fish from large predators and also protect worms, crabs, starfishes, sea cucumbers, sea urchins, etc, from strong currents.
- Provide ideal nursery sites for important commercial marine life like squids and cuttlefish.

## ECO-SENSITIVE ZONES

- The Supreme Court has directed that every protected forest, national park and wildlife sanctuary across the country should have a mandatory eco-sensitive zone (ESZ) of a minimum one km starting from their demarcated boundaries.

**What's the issue?**
- The judgment came on a petition instituted for the protection of forest lands in the Nilgiris district of Tamil Nadu.
- Subsequently, the scope of that writ petition was enlarged by the court so as to protect such natural resources throughout the country.

**Directions by the Court:**
- In case any national park or protected forest already has a buffer zone extending beyond one km, that would prevail.
- In case the question of the extent of buffer zone was pending a statutory decision, then the court's direction to maintain the one-km safety zone would be applicable until a final decision is arrived at under the law.
- Mining within the national parks and wildlife sanctuaries shall not be permitted.
- The Principal Chief Conservator of Forests and Home Secretaries of States responsible for the compliance of the judgment.

**About Eco-Sensitive Zones:**

1. Eco-Sensitive Zones (ESZs) or Ecologically Fragile Areas (EFAs) are areas notified by the Ministry of Environment Forest and Climate Change around Protected Areas, National Parks and Wildlife Sanctuaries.
2. The purpose of declaring ESZs is to create some kind of "shock absorbers" to the protected areas by regulating and managing the activities around such areas.
3. They also act as a transition zone from areas of high protection to areas involving lesser protection.
4. The Environment (Protection) Act, 1986 does not mention the word "Eco-Sensitive Zones".
5. An ESZ could go up to 10 kilometres around a protected area as provided in the Wildlife Conservation Strategy, 2002.
6. Moreover, in the case where sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, are beyond 10 km width, these should be included in the ESZs.

**Significance of ESZ:**
- The purpose of declaring ESZs around national parks, forests and sanctuaries is to create some kind of a "shock absorber" for the protected areas.
- These zones would act as a transition zone from areas of high protection to those involving lesser protection.

**Need of the hour:**
- The nation's natural resources have been for years ravaged by mining and other activities.
- Hence, the government should not confine its role to that of a "facilitator" of economic activities for the "immediate upliftment of the fortunes of the State".
- It has to act as a trustee for the benefit of the general public in relation to the natural resources so that sustainable development could be achieved in the long term.

## GREEN BOND

- India is likely to face an uphill battle if it goes ahead with its first sovereign green bond sale as it aims to issue the securities in rupees, putting off most overseas investors.

**What's the issue?**
- The timing might not be ideal for India though, especially for a rupee issuance.
- The currency has slumped more than 4% this year amid concern the Reserve Bank of India is behind the curve in tackling inflation, with elevated crude oil prices adding to pressures on the net importer.

**What is a Green Bond?**
- A green bond is a type of fixed-income instrument that is specifically earmarked to raise money for climate and environmental projects.
- These bonds are typically asset-linked and backed by the issuing entity's balance sheet, so they usually carry the same credit rating as their issuers' other debt obligations.
- Green bonds may come with tax incentives to enhance their attractiveness to investors.
- The World Bank is a major issuer of green bonds.

**How Does a Green Bond Work?**
- Green bonds work just like any other corporate or government bond.
- Borrowers issue these securities in order to secure financing for projects that will have a positive environmental impact, such as ecosystem restoration or reducing pollution.
- Investors who purchase these bonds can expect to make as the bond matures.
- In addition, there are often tax benefits for investing in green bonds.

**Green Bonds Vs Blue Bonds:**
- Blue bonds are sustainability bonds to finance projects that protect the ocean and related ecosystems.
- This can include projects to support sustainable fisheries, protection of coral reefs and other fragile ecosystems, or reducing pollution and acidification.

- All blue bonds are green bonds, but not all green bonds are blue bonds.

**Green Bonds Vs Climate Bonds:**
- "Green bonds" and "climate bonds" are sometimes used interchangeably, but some authorities use the latter term specifically for projects focusing on reducing carbon emissions or alleviating the effects of climate change.

## CHULLIYAR DAM

**About**
- Chulliyar Dam is one of the major irrigation project in Palakkad
- Constructed in 1960, it is built across Chulliyar River, one of the tributaries of the river Gayathripuzha.
- Gayathripuzha is one of the main tributaries of the Bharathapuzha River, the second-longest river in Kerala, south India.
- The adjacent Nelliyampathy Mountains multiply the charm of this locality.



## FIRST FISHING CAT CENSUS

- World's first fishing cat census was conducted by Chilika Development Authority (CDA) in collaboration with The Fishing Cat Project (TFCP)
- This is the world's first population estimation of the fishing cat, which has been conducted outside the protected area network.
- The Chilika Lake, Asia's largest brackish water lagoon, has 176 fishing cats
- A total of 150 camera traps were deployed in two phases with each fixed in the field for 30 days. Spatially Explicit Capture Recapture (SECR) method was used to analyse the data

**Fishing Cat**
- It is about twice the size of a typical house cat
- Scientific Name: Prionailurus viverrinus
- The fishing cat is an adept swimmer and enters water frequently to prey
- **Habitat:** Wetlands are the favorite habitats of the fishing cat. In India, fishing cats are mainly found in the mangrove forests of the Sundarbans, on the foothills of the Himalayas along the Ganga and Brahmaputra river valleys and in the Western Ghats.
- The fishing cat is nocturnal and apart from fish also preys on frogs, crustaceans, snakes, birds, and scavenges on carcasses of larger animals.
- It is capable of breeding all year round.
- It is a state animal of West Bengal.

**Protection Status**
- IUCN Red List: Endangered
- CITES: Appendix II
- Wildlife (Protection) Act, 1972: Schedule I

**Chilika Lake**
- Chilika is Asia's largest and world's second largest lagoon.
- It is located in Odisha, India.

- In 1981, Chilika Lake was designated the first Indian wetland of international importance under the Ramsar Convention.
- Major attraction at Chilika is Irrawaddy dolphins which are often spotted off Satapada Island.
- The large Nalabana Island (Forest of Reeds) covering about 16 sq km in the lagoon area was declared a bird sanctuary in 1987.
- Chilika lake hosts birds migrating from thousands of miles away from the Caspian Sea, Lake Baikal, Aral Sea, remote parts of Russia, Kirghiz steppes of Mongolia etc.

**Spatially explicit capture-recapture method**
- SECR or SCR is used to estimate the density of an animal population from capture-recapture data collected using an array of 'detectors'.
- Detectors may be live-capture traps, with animals uniquely marked; they also may be sticky traps or snags that passively sample hair, from which individuals are distinguished by their DNA micro-satellites, microphones, or cameras that take photographs from which individuals are recognized by their natural marks

**The Fishing Cat Project (TFCP)**
- The Fishing Cat Project (TFCP) is the world's longest-running research and conservation project on fishing cats and has been functional since 2010.
- It is currently functioning in two states of India – West Bengal and Odisha.

## STATE OF ENVIRONMENT REPORT 2022

**Heavy Toxic Metal Pollution**
- Three out of every four river monitoring stations in India posted alarming levels of heavy toxic metals such as lead, iron, nickel, cadmium, arsenic, chromium and copper.
- Of the 33 monitoring stations in Ganga, 10 had high levels of contaminants.
- India has 764 river quality monitoring stations across 28 states.
- Of the 588 water quality stations monitored for pollution, total coliform and biochemical oxygen demand were high in 239 and 88 stations across 21 States – an indicator of poor wastewater treatment from industry, agriculture and domestic households.
- India dumps 72% of its sewage waste without treatment.
- Ten States do not treat their sewage at all, as per the Central Pollution Control Board.

**Coastline erosion**
- Over a third of India's coastline that is spread across 6,907 km saw some degree of erosion between 1990 and 2018.
- West Bengal is the worst hit with over 60% of its shoreline under erosion.
- The reasons for coastal erosion include increase in frequency of cyclones and sea level rise and anthropogenic activities such as construction of harbours, beach mining and building of dams.
- While the global average of the Ocean Health Index, a measure that looks at how sustainably humans are exploiting ocean resources, has improved between 2012 and 2021, India's score in the index has declined over the same period.

**Forest Cover**
- India's total forest cover has registered a little over a 0.5% increase between 2017 and 2021 though most of the increase has taken place in the open forest category, which includes commercial plantations.
- This has happened at the cost of moderately dense forest, which is normally the area closest to human habitations.
- At the same time, very dense forests, which absorb maximum carbon dioxide from the atmosphere, occupy just 3% of total forest cover.
- India has a forest cover of 77.53 million hectares. But recorded forests—the area under the forest department— with forest cover are only 51.66 million. This gap of 25.87 million hectares —a size bigger than Uttar Pradesh— remains unaccounted

**State of Environment Report 2022**
- State of Environment Report 2022 is published by Centre for Science and Environment (CSE), an NGO
- The report is the annual publication of the CSE and Down To Earth (magazine).
- The report focuses on climate change, migration, health and food systems.
- CSE is a public interest research and advocacy organisation based in New Delhi.

## CARBON BOMBS

- A group of environmentalists, lawyers, and activists have come together to identify and 'defuse carbon bombs'– coal, oil and gas projects that have the potential to contribute significantly to global warming.
- The usage of the term 'carbon bombs' picked up after an investigative project of The Guardian
- The project reported the plans of countries and private companies all over the world to engage in 195 'carbon bomb' projects.
- Each such project, will release huge amounts of CO2 emissions into the atmosphere.

**What are carbon bombs?**
- It is an oil or gas project that will result in at least a billion tonnes of CO2 emissions over its lifetime.
- Whenever coal, oil, or gas is extracted it results in pollution and environmental degradation.
- In total, around 195 such projects have been identified world over, including in the US, Russia, West Asia, Australia and India.
- These projects will collectively overshoot the limit of emissions that had been agreed to in the Paris Agreement of 2015.

**What does the investigation say?**
- More than 60% of these carbon bomb projects are already underway
- Apart from coal, oil, and gas operations, the report highlighted the threat of methane, which routinely leaks from gas operations and is a powerful greenhouse gas, trapping 86 times more heat than CO2 over 20 years
- The report criticized reliance on fuel from conventional sources and not making use of emerging, green sources of energy.

**What is the plan for 'defusing' carbon bombs?**
- The network working towards this goal is called **Leave It In the Ground Initiative (LINGO).**
- Its mission is to leave fossil fuels in the ground and learn to live without them.
- It believes the root of climate change is the burning of fossil fuels, and the 100% use of renewable energy sources is the solution.
- LINGO aims to organise ground support for protesting such projects, challenge them through litigation, and conduct analysis and studies for the same.

## COMMON SURVEY TO COUNT ELEPHANTS AND BIG CATS

- The government of India, for the first time this year, will present a unified count of the tiger, leopard and elephant populations of the country.

**Benefits of the new method:**
- Given that 90% of the area occupied by elephants and tigers is common, and once estimation methods are standardised, having a common survey can significantly save costs.
- Also, the 'head count' method, or one currently deployed to count elephants was "obsolete" and frequently led to animals being double counted.

**How are they counted currently?**
- Currently, the tiger survey is usually held once in four years and elephants are counted once in five years.
- Since 2006, the Wildlife Institute of India (WII), Dehradun, which is affiliated to the Environment Ministry, has a standardised protocol in place that States then use to estimate tiger numbers. Based on sightings in camera traps and indirect estimation methods, tiger numbers are computed.
- Elephant numbers largely rely on States directly counting the number of elephants. In recent years, techniques such as analysing dung samples have also been deployed to estimate birth rates and population trends in elephants.

**Numbers:**
- According to the most recent 2018-19 survey, there were 2,967 tigers in India.
- According to the last count in 2017, there were 29,964 elephants in India.

**Efforts aimed at conservation of Elephants and their corridors at all- India level:**
- **'Gaj Yatra',** a nationwide campaign to protect elephants, was launched on the occasion of World Elephant Day in 2017. The campaign is planned to cover 12 elephant range states.
- The campaign aims to create awareness about elephant corridors to encourage free movement in their habitat.

**Forest Ministry guide to managing human-elephant conflict (Best Practices):**
- Retaining elephants in their natural habitats by creating water sources and management of forest fires.
- **Elephant Proof trenches** in Tamil Nadu.
- **Hanging fences and rubble walls** in Karnataka.
- Use of chili smoke in north Bengal and playing the sound of bees or carnivores in Assam.
- **Use of technology:** Individual identification, monitoring of elephants in south Bengal and sending SMS alerts to warn of elephant presence.

**Efforts by Private Organizations in this regard:**
- **Asian Elephant Alliance,** an umbrella initiative by five NGOs, had, last year, come together to secure 96 out of the 101 existing corridors used by elephants across 12 States in India.
- **NGOs Elephant Family, International Fund for Animal Welfare, IUCN Netherlands and World Land Trust** have teamed up with Wildlife Trust of India's (WTI) in the alliance.

**About Asian Elephants:**
- Asian elephants are listed as "endangered" on the IUCN Red List of threatened species.
- More than 60% of the world's elephant population is in India.
- Elephant is the Natural Heritage Animal of India.

## ENVIRONMENT PERFORMANCE INDEX

- Environment Performance Index-2022, an international ranking system that measures environmental health and sustainability of countries

**India's Performance**
- India was ranked last among 180 countries that have been ranked
- With a score of 18.9, India's 180th ranking comes after Pakistan, Bangladesh, Vietnam and Myanmar — the bottom five together make up the poorest performing countries for environmental health.
- India has also scored low on rule of law, control of corruption and government effectiveness
- India was ranked 168th in EPI-2020, with a score of 27.6

**About EPI**
- The EPI, a biennial index, was started in 2002 as Environmental Sustainability Index.
- EPI is published by the World Economic Forum in collaboration with the Yale Center for Environmental Law and Policy and the Columbia University Center for International Earth Science Information Network
- Using 40 performance indicators across 11 issue categories, EPI ranks 180 countries on climate change performance, environmental health, and ecosystem vitality.
- Top five rank holders this year are – Denmark, UK, Finland, Malta and Sweden

**Findings of the report**
- It has found that good policy results are associated with wealth, meaning economic prosperity makes it possible for nations to invest in policies and programmes that lead to desirable outcomes
- This is especially true under environmental health, as building the necessary infrastructure to provide clean drinking water and sanitation, reduce air pollution, control hazardous waste etc yields large returns for human well-being
- The report says that top-performing countries have paid attention to all areas of sustainability, while their lagging peers tend to have uneven performance.
- It highlights that countries making concerted efforts to decarbonize their electricity sectors have made the greatest gains in combating climate change, with associated benefits for ecosystems and human health.

## AEGEAN SEA & ISLANDS

- Turkish President Greece to demilitarise islands in the Aegean Sea
- Turkey says Greece has been building a military presence in violation of treaties that guarantee the unarmed status of the Aegean islands
- It argues the islands were ceded to Greece on the condition they remained demilitarised.
- Greece and Turkey are NATO allies, but the neighboring countries have a history of disputes over a range of issues, including mineral exploration in the eastern Mediterranean and rival claims in the Aegean Sea.
- Greece maintains Turkey has deliberately misinterpreted the treaties and says it has legal grounds to defend itself following hostile actions by Ankara, including a long-standing threat of war if Greece extended its territorial waters.

**Aegean Sea**
- It is an elongated embayment of the Mediterranean Sea between Europe and Asia.
- It is located between the Balkans and Anatolia, and covers an area of some 215,000 square kilometres.
- In the north, the Aegean is connected to the Marmara Sea and the Black Sea by the straits of the Dardanelles and the Bosphorus.
- The Aegean Islands are located within the sea and some bound it on its southern periphery

## Aegean Islands

- The Aegean Islands are the group of islands in the Aegean Sea, with mainland Greece to the west and north and Turkey to the east; the island of Crete delimits the sea to the south, those of Rhodes, Karpathos and Kasos to the southeast.
- The vast majority of the Aegean Islands belong to Greece, being split among nine administrative regions.
- The only sizable possessions of Turkey in the Aegean Sea are Imbros and Tenedos in the northeastern part of the Sea. Various smaller islets off Turkey's western coast are also under Turkish sovereignty.

The Aegean Islands are traditionally subdivided into seven groups, from north to south:

- Northeastern Aegean Islands
- Euboea
- Sporades (Northern Sporades)
- Cyclades
- Saronic Islands
- Dodecanese (Southern Sporades)
- Crete

## MANAS NATIONAL PARK

- Assam Rhino Estimation

### Manas National Park – Status

- The current rhino population in the park was estimated at 40
- The park's rhinos have a male-female sex ratio of 1:1, arrived at without considering 10 calves and five sub-adults
- The one-horned rhinos in Manas National Park, have an age structure pyramid, indicating higher life expectancy and significant growth in the population.
- There is no wider representation of calves and sub-adults to sustain the population structure
- Population pyramid for calves is clearly an indicative of a low birth rate, but is also suggestive of a lower death rate, which means that there is higher life expectancy
- But such a population may suffer losses if not supplemented through translocations, the report warned.
- A suitable strategy to bring in more rhinos from other rhino-bearing areas is required so as to have a wider representation of calves and sub-adults over time, the report stated

### Counting limitations

- "Total count" or direct count method adopted for the population estimation in Manas has a few limitations.

- A total count is generally used when a single species is targeted to be counted in a well-defined, specific area.
- This method assumes the detection probability to be one, which means that each and every animal has a 100% chance of being seen during the counting.
- The limitations of this method include undercounting, as the assumption of a detection probability of 1 is unrealistic, especially if the population closure cannot be established satisfactorily within a small area of 10-20 sq. km.

**Manas National Park:**
- Manas national park is a UNESCO World Heritage Site, a Project Tiger reserve, an elephant reserve and a biosphere reserve.
- It is located in the Himalayan foothills in Assam. It is contiguous with the Royal Manas National Park in Bhutan.
- The name of the park is originated from the Manas River.
- Significance: The Park is known for its rare and endangered endemic wildlife such as the Assam roofed turtle, hispid hare, golden langur and pygmy hog. It is also famous for its population of wild water buffalo.
- River: The Manas River flows through the west of the park. Manas is a major tributary of Brahmaputra river.

## PAR-TAPI-NARMADA LINK PROJECT

- Prime Minister is all set to inaugurate The Astol Project that will provide tap water to 4.50 lakh people living in 174 tribal villages and 1,028 hamlets on the hills of Valsad district in Gujarat.
- This is significant as the tribes in the area have been protesting against the central government's Par-Tapi-Narmada Link Project.

**Background:**
- Par-Tapi-Narmada river link project in south Gujarat was scrapped after strong protests by tribal communities of the three districts in the region.

**About the Project:**
- Envisioned under the 1980 National Perspective Plan.
- The project proposes to transfer river water from the surplus regions of the Western Ghats to the deficit regions of Saurashtra and Kutch.

**It proposes to link three rivers:**
1. **Par,** originating from Nashik in Maharashtra and flowing through Valsad.
2. **Tapi** from Satpura that flows through Maharashtra and Surat in Gujarat.
3. **Narmada** originating in Madhya Pradesh and flowing through Maharashtra and Bharuch and Narmada districts in Gujarat.

**Benefits:**
- The surplus water proposed to be diverted through the estimated Rs 10,211 crore Par-Tapi-Narmada link project is expected to irrigate an area of 2,32,175 hectares, of which 61,190 ha is en route to the link canal.

**Why is this project being opposed?**
- According to a report by the NWDA, about 6065 ha of land area will be submerged due to the proposed reservoirs.
- A total of 61 villages will be affected, of which one will be fully submerged and the remaining 60 partly.
- The total number of affected families would be 2,509 of which 98 families would be affected due to the creation of the Jheri reservoir, the only one in Maharashtra, spread over six villages.

- In Gujarat, around 2000 families will be affected by the project. The districts where the project will be implemented are largely dominated, by tribals who fear displacement.

**Benefits of interlinking:**
1. Enhances water and food security.
2. Proper utilisation of water.
3. Boost to agriculture.
4. Disaster mitigation.
5. Boost to transportation.

## VALE DO JAVARI

- British journalist and a Brazilian indigenous affairs expert recently went missing in a remote corner of the Amazon rainforest.
- The duo were last seen in Vale do Javari — the western section of the Brazilian Amazon named after the Javari river, which forms the country's border with Peru.



**Why is the region significant?**
- The region where Phillips and Pereira went missing is spread over 85,444 sq km and, according to the Brazilian government, it is home to "the greatest concentration of isolated groups in the Amazon and the world".
- The area is home to 14 different indigenous tribes with nearly 6,000 inhabitants. These tribes are known to reject contact with the outside world.
- But in spite of that there are repeated attempts to forcibly enter their resource-rich territory.
- Vale do Javari also forms part of an international cocaine trafficking route, with gold being exchanged for drugs and arms, consequently making it a hotspot for violent crimes.
- Besides the Javari it is transected by the Pardo, Quixito, Itaquai and Ituí rivers.
- The Brazilian government has made it illegal for non-indigenous people to enter the territory.

## THE COMMISSION FOR AIR QUALITY MANAGEMENT (CAQM)

- The Commission for Air Quality Management (CAQM) has issued directions to ban the use of coal in industrial, domestic and other miscellaneous applications in the entire Delhi-NCR region from 1st January 2023.

**Need for:**

- This step is taken to bring down greenhouse gas emissions in Delhi NCR. Delhi is among the world's most polluted capital cities.
- It will help save 1.7 million tonnes of coal annually.
- It will also help reduce pollutants including particulate matter (PM), nitrogen oxide (NOx), CO2 and CO.

**About The Commission for Air Quality Management (CAQM)**
- The Commission was first formed by an ordinance in October 2020. The erstwhile Environment Pollution (Prevention and Control) Authority, or EPCA had been dissolved to make way for the Commission.
- The Commission will be **a statutory authority.**
- The Commission will supersede bodies such as the central and state pollution control boards of Delhi, Punjab, Haryana, UP and Rajasthan.
- In 2021, the Parliament approved the Commission for Air Quality Management in National Capital Region and Adjoining Areas Bill.

**Composition:**
**Chairperson:** To be chaired by a government official of the rank of Secretary or Chief Secretary.
- The chairperson will hold the post for three years or until s/he attains the age of 70 years.
- It will have members from several Ministries as well as representatives from the stakeholder States.
- It will have experts from the Central Pollution Control Board (CPCB), Indian Space Research Organisation and Civil Society.

**Powers and functions:**
1. It will have the powers to issue directions to these state governments on issues pertaining to air pollution.
2. It will entertain complaints as it deems necessary for the purpose of protecting and improving the quality of the air in the NCR and adjoining areas.
3. It will also lay down parameters for control of air pollution.
4. It will also be in charge of identifying violators, monitoring factories and industries and any other polluting unit in the region, and will have the powers to shut down such units.
5. It will also have the powers to overrule directives issued by the state governments in the region, that may be in violation of pollution norms.

## LAKE SAWA

- This year, for the first time in its centuries-long history, Iraq Lake Sawa dried up
- A combination of mismanagement by local investors, government neglect and climate change has ground down its azure shores to chunks of salt.

**Sawa Lake**
- Sawa Lake is an endorheic basin located in the Iraqi governorate of Muthanna near to the Euphrates River
- This lake has no inlet or outlet, but it draws water from the Euphrates through a system of joint cracks and fissures which transport water to aquifers beneath it.
- The water's level fluctuates during dry and wet seasons
- Sawa Lake is characterized by arid climate
- Because of its saline water, no plants grow in the lake or on its shores. Fish and algae are the most important aquatic

## EARTH'S NEW TECTONIC PLATES

- Researchers from the University of Adelaide, Australia, have carried out a new study that includes an updated map of the earth's tectonic plates.

- **Plate Tectonic:** A tectonic plate, according to the United States Geological Survey, "is a massive, irregularly shaped slab of solid rock", made up of lithosphere or the earth's top layer. Tectonic plate movements often lead to earthquakes and volcanoes.

**Need:**

- This will help in forming a better understanding of natural hazards like earthquakes and volcanoes.
- The plate model can be used to improve models of risks from geohazards; the orogeny model helps understand the geodynamic systems and better model Earth's evolution and the province model can be used to improve prospecting for minerals
- **Techniques Used:** To create the map, the team combined three geological models: a plate model based on already known plate boundaries, a province model based on the geology of Earth's surface, and an orogeny model with areas deformed by mountain-building processes.
- **Changes:** The new plate model includes several new microplates including the Macquarie microplate which sits south of Tasmania and the Capricorn microplate which separates the Indian and Australian plates.
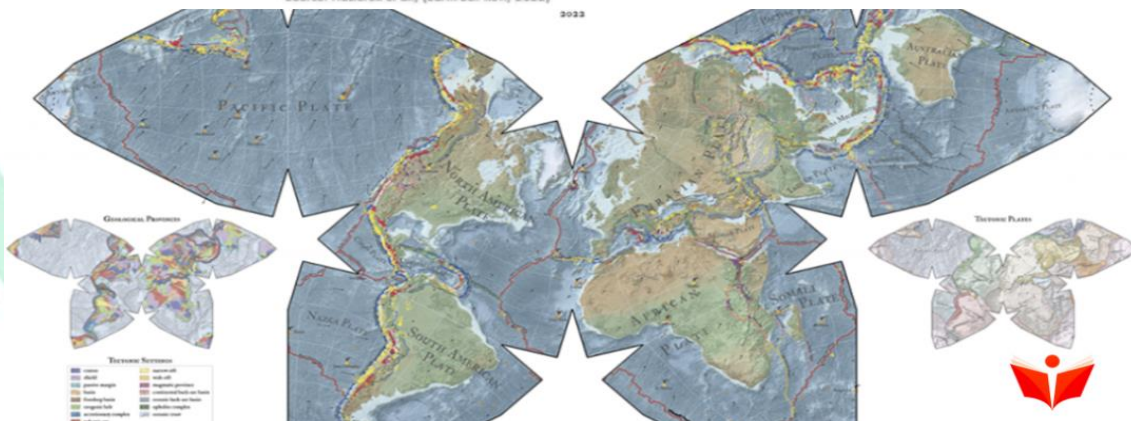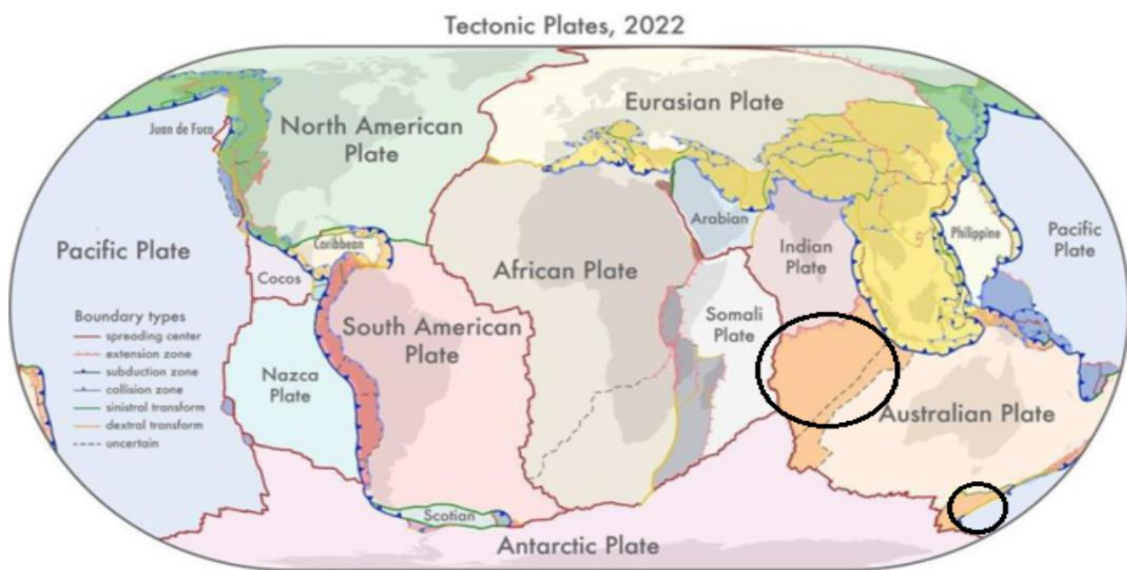


## SUPERMOON

- The Supermoon was seen worldwide in different time zones
- A supermoon occurs when the Moon's orbit is closest to the Earth at the same time that the Moon is full.
- As the Moon orbits the Earth, there is a point of time when the distance between the two is the least (perigee).
- Also, there is a point of time when the distance is the most (apogee)
- Now, when a full moon appears at the point when the distance between the Earth and the Moon is the least, not only does it appear to be brighter but it is also larger than a regular full moon.
- In a typical year, there may be two to four full supermoons and two to four new supermoons in a row.

## THE FRAGILE STATE OF NUCLEAR DISARMAMENT

- The **Stockholm International Peace Research Institute (SIPRI)** released its yearbook highlighting some trends of the past year in international security.

**Key Findings**
**What have been the trends in military spending?**
- During 2012-2021, military spending as a percentage of gross domestic product has largely been stable.
- Russia leads the charge in absolute numbers of nuclear inventory (5977 against the U.S.'s 5428), however it is the United States that has the largest number of deployed warheads (1744 against Russia's 1588).
- The U.K. has 225 nuclear weapons in its inventory, while France has 290, China has 350, India has 160, and Pakistan has 165.

**Global Arms Imports**
- Military modernisation is seen to be a global trend.
- India was the top weapons importer during the 2017-2021 period.
- Other countries to feature in the top five arms importers list include Saudi Arabia, Egypt, China, and Australia.
- According to SIPRI, these five nation states account for 38% of total global arms import.

**What are the key developments/concerns flagged by the yearbook?**
- The yearbook mentions low level border clashes between India and Pakistan, the civil war in Afghanistan, and the armed conflict in Myanmar as some of the worrying indicators of an unstable system.
- It also highlighted three causes of concern trends: Chinese-American rivalry, involvement of state and non-state actors in multiple conflicts, and the challenge that climatic and weather hazards pose.
- The Russian invasion of Ukraine has raised some serious concern because of the continuous rhetoric from the Kremlin over them not shying away from the use of nuclear weapons.
- China's recent activities surrounding construction of 300 new nuclear missile silos have also been turning heads.
- The report claimed that Iran's military budget grew to $24.6 billion, growing for the first time in four years.

**What is the general attitude among countries about existing nuclear and arms related treaties?**
- The leaders of the P5 countries (China, France, Russia, the U.K. and the U.S.) issued a joint statement affirming the belief that "a nuclear war cannot be won and must never be fought".
- This highlights collective belief that bilateral and multilateral arms control agreements and commitments were indeed important.
- The dichotomy of this sentiment against the upward trend in absolute numbers of arms and nuclear arsenals is rather unsettling.
- Even with these upward trends, the nation states are making sure to remain well within the ambit of what the treaties and agreements ask for.

**What lies ahead?**
- A strong political opposition would be needed to help keep the ruling dispensation in check.
- Furthermore, the two largest nuclear weapons holding states need to take on a more engaging role in the international arena.
- Nations should opt for peaceful resolution through negotiation.

## ATAPAKA BIRD SANCTUARY

- Thousands of migratory birds reach the sanctuary every year for nesting.
- The Atapaka Bird Sanctuary at Kolleru Lake has become a safe breeding ground for many migratory species namely Grey Pelicans and Painted Storks

- Grey Pelican and Painted Stork both are near threatened species under IUCN Red List of Threatened Species.



**Kolleru Lake**

- Kolleru Lake is located between the deltas of the Krishna and Godavari rivers in Andhra Pradesh.
- It is an important habitat for an estimated 20 million residents and migratory birds like Grey or Spot-billed pelicans.
- It was notified as a Wildlife Sanctuary in 1999 under India's Wild Life Protection Act, 1972.
- It was declared a wetland of international importance in 2002 under Ramsar convention.

## WEST SETI PROJECT

- India will be taking over an ambitious hydropower project in Nepal — West Seti nearly four years after China withdrew from it.
- India's National Hydro Power Corporation (NHPC) has already begun preliminary engagement of the site in far-western Nepal
- The CWE Investment Corporation, a subsidiary of China Three Gorges Corporation, had informed the Nepal Government in August 2018 that it would not be able to execute the 750-MW West Seti Hydropower Project it had undertaken on the ground that it was "financially unfeasible and its resettlement and rehabilitation costs were too high"



**India -Nepal power relations**

- Nepal is rich in power sources with around 6,000 rivers and an estimated potential for 83,000 MW.
- India is viewed as a feasible market for Nepal, but there has been some uncertainty in Nepal over India's inability to deliver projects on time
- For instance – an ambitious Mahakali treaty was signed back in 1996, to produce 6,480 MW, but India has still not been able to come out with the Detailed project Report.

- What has helped build faith recently is India's success in executing the 900-MW Arun Three project in eastern Nepal's Sankhuwa Sabha
- West Seti success is expected to restore India's image in Nepal and give it weightage in future considerations for hydropower projects, when competition is bound to be tough. West Seti, therefore, has the potential to be a defining model for Nepal India's power relations in future.

## LIGHTNING

- Several deaths are being reported due to lightning across India
- Seventeen people have been killed by lightning over the last two days in various parts of Bihar
- Of all the atmospheric phenomena, lightning perhaps is the most dangerous and mysterious.
- In India, lightning kills about 2,000-2,500 people every year.

**What is lightning?**
- Scientifically, lightning is a rapid and massive discharge of electricity in the atmosphere some of which is directed towards earth.
- The discharges are generated in giant moisture-bearing clouds that are 10-12 km tall.
- The base of these clouds typically lies within 1-2 km of the Earth's surface, while the top is 12-13 km away.
- Temperatures in the top of these clouds are in the range of –35° to –45°C.
- As water vapour moves upward in the cloud, the falling temperature causes it to condense.
- As they move to temperatures below 0°C, the water droplets change into small ice crystals.
- They continue to move up, gathering mass until they are so heavy that they start to fall to Earth.
- This leads to a system in which, simultaneously, smaller ice crystals are moving up and bigger crystals are coming down.
- Collisions follow and trigger the release of electrons, a process that is very similar to the generation of sparks of electricity.
- As the moving free electrons cause more collisions and more electrons, a chain reaction ensues.
- This process results in a situation in which the top layer of the cloud gets positively charged, while the middle layer is negatively charged.
- The electrical potential difference between the two layers is huge, of the order of a billion to 10 billion volts.
- In very little time, a massive current, of the order of 100,000 to a million amperes, starts to flow between the layers.
- While the Earth is a good conductor of electricity, it is electrically neutral.
- However, in comparison to the middle layer of the cloud, it becomes positively charged.
- As a result, about 15%-20% of the current gets directed towards the Earth as well.
- It is this flow of current that results in damage to life and property on Earth.
- Direct lightning strikes are rare but even indirect strikes are fatal given the immense amount of charge involved.

**Which areas are lightning-prone?**
- A recently released annual report on lightning by the Climate Resilient Observing Systems Promotion Council (CROPC), which works closely with government agencies like the India Meteorological Department, includes a lightning atlas which maps vulnerability at the district level.
- According to the report, Madhya Pradesh has reported the largest number of cloud to ground lighting strikes, followed by Chhatisgarh, Maharashtra, Odisha and West Bengal.
- Other states with high strike rate include Bihar, UP, Karnataka, Jharkhand and Tamil Nadu
- In 2019-20, about 1.4 crore lightning strikes were recorded, which increased to 1.85 crore in 2020-21.
- In 2021-22, about 1.49 crore strikes were recorded across the country.
- The reduction, in line with the trend observed globally, has been attributed to the impact of the Covid-19 pandemic.
- The reason attributed to reduction in lightning is due to Covid-2019 pandemic induced reduction in aerosol level, pollution, environmental upgradation and relatively stable weather system in Indian subcontinent.

**How can the effects of lightning strikes be mitigated?**
- Lightning is not classified as a natural disaster in India.
- But recent efforts have resulted in the setting up of an early warning system that is already saving many lives.
- More than 96% of lightning deaths happen in rural areas.
- As such, most of the mitigation and public awareness programmes need to focus on these communities.
- Lightning protection devices are fairly unsophisticated and low-cost. Yet, their deployment in the rural areas, as of now, is extremely low.
- States are being encouraged to prepare and implement lightning action plans, on the lines of heat action plans.

## MAJOR ECONOMIES FORUM ON ENERGY AND CLIMATE (MEF)

- At the virtual meeting of MEF, Union Minister calls upon the members of MEF to launch a global movement on LIFE i.e., Lifestyle for Environment
- **Aim of the meeting:** The MEF meeting was aimed at galvanising actions (both developed and developing countries) that are to strengthen energy security and tackle the climate crisis thereby building momentum for COP27.
- **Background:** MEF was launched in 2009 by US President Barack Obama.

**India at MEF 2022**
- India has already installed 159 GW of non-fossil fuel-based electricity generation capacity.
- During the last 7. 5 years, India's installed solar energy capacity has increased over 18 times.
- India's annual per capita emissions are only a third of the global average and its cumulative GHG emissions are less than 4 percent.
- India's Panchamrit goals are being fructified through one of the largest clean energy development plans in the world.
- India is on track to meet its commitments, through the adoption of low carbon policies across key sectors of our economy ranging from the green hydrogen mission to e-mobility.

## NATIONAL CHAMBAL SANCTUARY

- To end illegal mining, Madhya Pradesh plans to make it legal in parts of Chambal sanctuary
- To free its forest department from devoting too much time, resources, and efforts in fighting illegal mining in the National Chambal Sanctuary, the Madhya Pradesh government has proposed to open 292 hectares for mining in five stretches on Chambal and its tributary Parvati rivers.
- Sand mining has been banned in the sanctuary since 2006.
- Opening up the five stretches would minimise the conflict with illegal miners, gain local support, and fetch revenue from royalty, one-fourth of which could be used to strengthen protection measures.
- Additionally, the proposal sought to make the contractors of the soon-to-be legal quarries responsible for checking illegal mining on adjacent sanctuary land four times their leased areas, failing which their leases would be terminated.

**National Chambal sanctuary**
- The National Chambal Sanctuary was set up in 1979 as a riverine sanctuary along an approximately 425 km length of the Chambal River and its ravines stretching over 2-6 km wide along the river.
- National Chambal Sanctuary is the main area for the species reintroduction programmme of the crocodilian species **Gavialis Gangeticus (Gharial)**
- National Chambal Sanctuary is **lying in three states** of Madhya Pradesh, Uttar Pradesh and Rajasthan.
- Chambal supports the largest population of Gharials in the wild
- One of the few places to spot the **Platanista Gangetica – Gangetic Dolphins.**
- Chambal is one of the cleanest rivers in the country.

- The National Chambal Sanctuary is listed as an important bird area
- Chambal supports more than 320 resident and migrant birds.

## STRAIT OF HORMUZ

- A U.S. Navy warship fired a warning flare to wave off an Iranian Revolutionary Guard speedboat coming straight at it during a tense encounter in the strategic Strait of Hormuz

**Strait of Hormuz**
- The waterway separates Iran and Oman, linking the Persian Gulf to the Gulf of Oman and the Arabian Sea.
- The Strait is 33 km wide at its narrowest point, but the shipping lane is just three km wide in either direction.
- Most crude exported from Saudi Arabia, Iran, the UAE, Kuwait and Iraq – all members of the Organization of the Petroleum Exporting Countries (OPEC) – is shipped through this waterway.
- It is also the route used for nearly all the liquefied natural gas (LNG) produced by the world's biggest LNG exporter, Qatar.



**Background**
- Iran and world powers agreed in 2015 to the nuclear deal, which saw Tehran drastically limit its enrichment of uranium in exchange for the lifting of economic sanctions.
- In 2018, then-President Donald Trump unilaterally withdrew America from the accord, raising tensions across the wider Middle East and sparking a series of attacks and incidents.
- Talks in Vienna about reviving the deal have been on a pause since March.
- Since the deal's collapse, Iran has been running advanced centrifuges and rapidly growing stockpile of enriched uranium.

## SUMMER SOLSTICE

- June 21 is the day of Summer Solstice in 2022.
- The summer solstice marks the beginning of the astronomical summer and occurs when the earth has its maximum tilt towards the sun.
- For temperate regions, the summer solstice is when the sun reaches its highest point in the sky.
- The Earth orbits the sun at an angle.
- So for half the year, the Northern Hemisphere is tilted towards the Sun and therefore, it is summer for the Northern hemisphere and winter for the Southern Hemisphere.
- During the other half of the year, the Northern Hemisphere is tilted away from the sun, thus creating winter in the Northern Hemisphere and summer in the south.
- Solstices happen twice per year: one for the winter and one for the summer and this is interchanged depending on which Hemisphere you live in.
- The longest day of the year happens on the day of the summer solstice since the earth receives the longest period of daylight during the day.
- The solstice has been seen as a significant time of the year in many cultures and has been marked by festivals and rituals across the globe.

## FOUR NEW CORALS RECORDED FROM INDIAN WATERS

- Scientists have recorded four species of azooxanthellate corals for the first time from Indian waters
- These new corals were found from the waters of Andaman and Nicobar Islands.
- Azooxanthellate corals are a group of corals that do not contain zooxanthellae and derive nourishment not from the sun but from capturing different forms of plankton.
- These groups of corals are deep-sea representatives, with the majority of species reporting from between 200 m to 1000 m.
- Their occurrences are also reported from shallow coastal waters. Zooxanthellate corals, meanwhile, are restricted to shallow waters
- All the four groups of corals are from the same family Flabellidae.
- Truncatoflabellum crassum, T. incrustatum, T. aculeatum and T. irregulare
- Under the family Flabellidae were previously found from Japan to the Philippines and Australian waters while only crassum was reported within the range of Indo-West Pacific distribution including the Gulf of Aden and the Persian Gulf.
- Azooxanthellate corals are a group of hard corals and the four new records are not only solitary but have a highly compressed skeletal structure.

**Hard corals**
- Hard corals grow in colonies and are often referred to as "reef-building corals."
- Hard corals create skeletons out of calcium carbonate, a hard substance that eventually becomes rock.
- Overtime, this rock builds up to form the foundation of a coral reef and provides a structure upon which baby corals can settle.
- Hard corals can be further separated into two sub-groups.

**Zooxanthellate**
- The zooxanthellate (reef-building or hermatypic) corals are ones that depend on zooxanthellae algae for nutrients.
- These shallow water corals have a major reef-building function.
- They are generally found in clear water less than 50 metres deep as the algae need light for photosynthesis.

**Azooxanthellate**
- The azooxanthellate (deep water or ahermatypic) corals do not contain zooxanthellae and therefore gain their nutrition solely from filtering plankton from seawater.
- These isolated, solitary or colonial forms rarely build big constructions.

## KEIBUL LAMJAO NATIONAL PARK

- People protested against move to shift proposed heritage park site in Manipur

**Background**
- The State govt. had announced that a heritage park would come up near the Keibul Lamjao National Park in Bishnupur district.
- It was expected that the museum of the Indian National Army where the first Indian flag of Independence was hoisted near the Loktak lake and the heritage park will attract tourists from the country and abroad.
- Villagers complained that the government had taken up steps to shift the site to a place six km away from the KLNP.
- And they contend that the people of the proposed site are not associated with steps for the protection of the endangered brow-antlered deer (Sangai) in the KNLP.

**Keibul Lamjao National Park**

- The Keibul Lamjao National Park is a national park in the Bishnupur district of the state of Manipur in India.
- It is the only floating park in the world, located in North East India, and an integral part of Loktak Lake.
- The national park is characterized by floating decomposed plant material locally called phumdi.
- It was created in 1966 as a wildlife sanctuary to preserve the natural habitat of the endangered Sangai/Brow antlered deer/Dancing Deer.
- In 1977, it was gazetted as national park

**Sangai**
- Sangai, Brow antlered deer, Dancing Deer
- It is an endemic species, found only in Manipur
- Sangai is a medium-sized deer, with uniquely distinctive antlers, with extremely long brow tine, which form the main beam.
- State animal of Manipur

**Protection Status**
- WPA, 1972: Schedule-1
- IUCN: **Endangered**

## BUILDING RESILIENCE AGAINST RECURRING FLOODS

- People in the Northeastern state are facing the fury of the Brahmaputra, Barak, and their tributaries.
- Nearly 100 people have lost their lives in the rain-induced landslides and floods that have engulfed 30 of Assam's 35 districts
- The Centre and state government have commenced relief operations but the raging rivers have hobbled these activities.

**Promises have rarely been matched by action in Assam**
- For more than half a century, Assam has relied on embankments to stave off the swelling rivers during the monsoons. A growing body of literature shows that these walled structures — most of them have not been repaired for decades — are ill-equipped to tackle floods, especially at a time when climate change is complicating the state's hydrology. Assam's flood management data shows that it needs to take such studies seriously.
- Close to 1,300 cases of embankment breaches have been recorded since 2000.
- Floods ripped apart nearly 200 embankments in 2020. This year, they have destroyed nearly 300 such structures.
- A report of the Parliamentary Standing Committee on Water Resources last year advised the state government to strengthen flood protection structures, address soil erosion and de-silt rivers. But these measures continue to be on the to-do list of the Assam government. In fact, the state's flood management outlay has come down in the past two years.

**The Way Forward**
- The state government would do well to build people's resistance to the elements in cities, towns and villages. Such measures include putting flood warning systems in place and shifting people and livestock to safer locations.
- **Forming a de-siltation plan:** The river is one of the important ingredients when it comes to drainage. The de-siltation plan is very expensive but it is needed.
- **Sustainable usage of land:** Low-lying areas in cities have to be reserved for parks and other low-impact human activities, restrict encroachments in natural drainage areas; clearance of river beds, and proper implementation of Coastal Regulation Zone rules. Planting drought-resistant and flood-resistant sturdy trees in vulnerable areas also helps.

- **Utilising International best practices:** Implementing 'Mobile Walls' like in Germany, and 'sponge' cities in line with cities in China which involves replacing concrete pavements with porous pavements to ensure better filtration.
- **Policy making and city planning:** Each city should have their Flood mitigation plans strongly embedded within the master plan of the city. There should be prompt, well-coordinated and effective response in case of urban floods to minimize casualties and loss of property and also facilitate early recovery.
- **Wetlands protection:** Urban flooding may increase if wetlands not protected. Centre for Science and Environment(CSE) has recommended strong laws to protect urban lakes, their catchment and feeder channels
- Idea is that a holistic plan should engage all the development partners. It should try to address all the issues and modify it as per local needs.

## SOIL CONSERVATION FOR FOOD SECURITY

- Food Security as one of the core indicators of economic development. The modernisation of agriculture has brought huge dividends in terms of ensuring food security to large swathes of people, apart from improving crop production.
- A key element of sustainable food production is healthy soil because nearly 95 percent of global food production depends on soil. The current status of soil health is worrisome.
- Soil degradation on an unprecedented scale is a significant challenge to sustainable food production:
- About one-third of the earth's soils is already degraded and alarmingly, about 90 per cent could be degraded by 2050 if no corrective action is taken.
- While soil degradation is believed to be occurring in 145 million hectares in India, it is estimated that 96.40 million hectares — about 30 per cent of the total geographical area — is affected by land degradation.
- Globally, the biophysical status of 5,670 million hectares of land is declining, of which 1,660 million hectares (29 per cent) is attributed to human-induced land degradation, according to the Food and Agriculture Organisation's 'State of Land, Soil and Water' report.

**The Way Forward**
- The time has come for collective global action involving governments and civil society to reverse this alarming trend.
- With the threat to food security looming large globally, compounded by the attendant hazard of serious damage to the environment, the need of the hour is to adopt innovative policies and agro-ecological practices that create healthy and sustainable food production
- Reduce dependence on pesticides worldwide: Extensive use of fertilisers and pesticides led to the deterioration of soil health and contamination of water bodies and the food chain, which pose serious health risks to people and livestock.
- As soil is a fragile and finite resource, sustainable land management practices are essential to ensure healthy soil. They are critical not only to preventing degradation but also to ensuring food security. Every effort must also be made to prevent soil erosion as it not only affects fertility but also increases the risk of floods and landslides.
- To address soil salinization (Salinity is the presence of salts (such as sodium chloride, magnesium, and calcium sulfates) and bicarbonates, in soil and water.):
- Soil washing- Stagnate water and flush it out, but if the water table is affected this might not yield result.
- Chemical treatment- Use of Gypsum to counter salinity
- Isolating the canal water by building side walls.
- Proper choice of agricultural practices and crops.
- Discourage borewell instead do rain water harvesting using pits.
- Natural farming and organic farming are not only cost-effective but also lead to improvement in soil health and the farmland ecosystem.

**Soil Health Card Scheme**

- **Soil Health cards** have been distributed to about 23 crore farmers – Improved the health of the soil + benefited innumerable farmers by increasing crop production and their incomes.
- India is well on course to achieving the restoration of 26 million hectares of degraded land by 2030 – A decrease in the use of chemical fertilisers in the range of 8-10 per cent as a result of the application of fertilisers and micro-nutrients as per the recommendations on the soil health cards. Overall, an increase in crop yields to the tune of 5-6 per cent was reported as a result.

## EXPANSION OF THE INVASIVE PLANTS

- The Wildlife Institute of India has sought permission for a pilot project to check the expansion of the invasive plants threatening the rhino habitat.
- Kaziranga has had to deal with encroachment, poaching, and annual floods for decades. But none of these has been as damaging to the health of the 1,300 sq. km tiger reserve as the green invaders that have gone under the radar until now.
- This is the first time that such species have been identified with threat estimation.

**Invasive Plants**
- Regenerate at an alarming speed and threaten to edge out the indigenous flora
- Some of the invasive plants have a toxic impact on the landscape after remaining underwater, which is often for two months every monsoon.
- Some weeds have herbal properties, but their toxicity outweighs their utility. For instance, wild boars love to gorge on the succulent rootlets of the Leea macrophylla or 'kukura thengia' that is fast clogging the patrolling paths and grasslands.

**Invasive Species discovered**
- **Ipomoea (Ipomoea carnea)**
- **Mimosa (Mimosa himalaica)**
- **Parthenium (Parthenium hysterophorus)** is believed to have come to India as contaminants in a consignment of wheat imported from the U.S. in the 1950s
- **Lantana (Lantana camara)** was brought by the British as ornamental plants from South America two centuries ago.
- **Bombax ceiba** (locally called Semul)
- **Largestroemia speciosa** (locally called ejhar)
- **Cestrum diurnum** or day-blooming jasmine of West Indies origin; otherwise a source of vitamin D3. Once the modalities are finalised, this weed can be turned into a commercial crop for the people in the vicinity of Kaziranga. Pharmaceutical companies need tonnes of dry leaves of this plant periodically
- **Cane** is a commercial plant that is threatening to be an invasive plant in Kaziranga.

**Kaziranga National Park and Tiger Reserve**
- It is a national park in the Golaghat and Nagaon districts of Assam.
- The sanctuary, which hosts two-thirds of the world's great one-horned rhinoceroses, is a World Heritage Site.
- Kaziranga is recognized as an Important Bird Area by BirdLife International for conservation of avifaunal species.
- Kaziranga has the largest population of the Wild water buffalo anywhere accounting for about 57% of the world population.

**Greater One-Horned Rhinoceros**
- Also known as Indian rhino, it is the largest of the rhino species.
- India is home to the largest number of Greater One-Horned Rhinoceros in the world.
- At present, there are about 2,600 Indian rhinos in India, with more than 90% of the population concentrated in Assam's Kaziranga National Park.

- **Habitat**: The species is restricted to small habitats in Indo-Nepal terai and northern West Bengal and Assam.
- In India, rhinos are mainly found in
- Kaziranga NP, Pobitora WLS, Orang NP, Manas NP in Assam,
- Jaldapara NP and Gorumara NP in West Bengal
- Dudhwa TR in Uttar Pradesh.

**Threats:**
- Poaching for the horns
- Habitat loss
- Population density
- Decreasing Genetic diversity

**Protection Status:**
- IUCN Red List: Vulnerable.
- CITES: Appendix-I
- Wildlife Protection Act, 1972: Schedule I.

## BAN ON SINGLE-USE PLASTIC

- With the ban on single-use plastic coming into force on July 1, the government will be setting up control rooms at national and state levels to ensure its effective enforcement.
- Apart from the control rooms, which will be supervised by the Central Pollution Control Board, special enforcement teams will be formed to check illegal manufacture, import, stocking, distribution, sale and use of the 12 banned single-use plastic items.
- States and Union Territories have been asked to set up border check points to stop inter-state movement of any banned single-use plastic item.
- The list of banned items include ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene (thermocol) for decoration, plastic plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around sweet boxes, invitation cards, cigarette packets, plastic or PVC banners less than 100 micron, stirrers.
- The items have been chosen on the basis of three criteria – their low utility, high littering potential and availability of alternative materials.

**Stats**
- According to the CPCB, plastic waste generation in 2020-21 was 41,26,997 tonnes, while per capita waste generation was 3 kg per annum.
- Characterization of plastic waste in 18 cities has found that the percentage of single-use plastic in total plastic waste is between 10% and 35 %.
- The government has over the past year focused on encouraging industry and MSMEs to come up with alternatives to plastic, including biodegradable plastic and compostable plastic.

## ITALY DROUGHT

**Mortara**
- Italy
- The worst drought Italy has faced in 70 years is thirsting paddy fields in the river Po valley and jeopardizing the harvest of the premium rice.
- Italy's largest river is turning into a long stretch of sand due to the lack of rain, leaving the Lomellina rice flats — nestled between the river Po and the Alps — without the necessary water to flood the paddies.
- The lack of rainfall has brought governors of various Italian regions to declare a state of emergency in order to conserve water and coordinate the management of minimal resources.

- The region's main water sources, the rivers Po and Dora Baltea, are eight times lower than the average seasonal levels.

**Po River Basin**
- The Po River is the longest river in Italy (661 km)
- It originates from Pian del Re of Monte Viso, and flows eastward till the Adriatic Sea near Venice
- The basin population is close to 17 million inhabitants, almost 1/3 of the population of Italy.
- The main land use of the Po plain is intensive agriculture.

# HISTORY AND CULTURE

## VEER SAVARKAR

- May 28th 2022 marked the 139th birth anniversary of Veer Savarkar .

**Veer Savarkar**
- Born on May 28, 1883 in Bhagur, a city in Maharashtra's Nashik.

**Nationalism and social reforms:**
- Formed a youth organization- Mitra Mela, this organization was put into place to bring in national and revolutionary ideas.
- He was against foreign goods and propagated the idea of Swadeshi.
- He championed atheism and rationality and also disapproved orthodox Hindu belief. In fact, he even dismissed cow worship as superstitious.
- He also Worked on abolishment of untouchability in Ratnagiri. Dr Babasaheb Ambedkar also compared his work to Lord Buddha.
- Vinayak Savarkar was a president of Hindu Mahasabha from 1937 to 1943.
- When congress ministries offered resignation on 22nd October 1939, Hindu Maha Sabha under his leadership cooperated with Muslim league to form government in provinces like Sindh, Bengal and NWFP.
- In Pune, Savarkar founded the "Abhinav Bharat Society".
- He joined Tilak's Swaraj Party.
- He founded the Free India Society. The Society celebrated important dates on the Indian calendar including festivals, freedom movement landmarks, and was dedicated to furthering discussion about Indian freedom.
- He believed and advocated the use of arms to free India from the British and created a network of Indians in England, equipped with weapons.

**Important works:**
1. Book- The History of the war of Indian Independence.
2. An armed revolt against the Morley-Minto reform.
3. Two-nation theory in his book 'Hindutva'.

## STATE OF ENVIRONMENT REPORT 2022

**Heavy Toxic Metal Pollution**
- Three out of every four river monitoring stations in India posted alarming levels of heavy toxic metals such as lead, iron, nickel, cadmium, arsenic, chromium and copper.
- Of the 33 monitoring stations in Ganga, 10 had high levels of contaminants.
- India has 764 river quality monitoring stations across 28 states.
- Of the 588 water quality stations monitored for pollution, total coliform and biochemical oxygen demand were high in 239 and 88 stations across 21 States – an indicator of poor wastewater treatment from industry, agriculture and domestic households.
- India dumps 72% of its sewage waste without treatment.
- Ten States do not treat their sewage at all, as per the Central Pollution Control Board.

**Coastline erosion**

- Over a third of India's coastline that is spread across 6,907 km saw some degree of erosion between 1990 and 2018.
- West Bengal is the worst hit with over 60% of its shoreline under erosion.
- The reasons for coastal erosion include increase in frequency of cyclones and sea level rise and anthropogenic activities such as construction of harbours, beach mining and building of dams.
- While the global average of the Ocean Health Index, a measure that looks at how sustainably humans are exploiting ocean resources, has improved between 2012 and 2021, India's score in the index has declined over the same period.

**Forest Cover**
- India's total forest cover has registered a little over a 0.5% increase between 2017 and 2021 though most of the increase has taken place in the open forest category, which includes commercial plantations.
- This has happened at the cost of moderately dense forest, which is normally the area closest to human habitations.
- At the same time, very dense forests, which absorb maximum carbon dioxide from the atmosphere, occupy just 3% of total forest cover.
- India has a forest cover of 77.53 million hectares. But recorded forests—the area under the forest department— with forest cover are only 51.66 million. This gap of 25.87 million hectares —a size bigger than Uttar Pradesh— remains unaccounted

**State of Environment Report 2022**
- State of Environment Report 2022 is published by Centre for Science and Environment (CSE), an NGO
- The report is the annual publication of the CSE and Down To Earth (magazine).
- The report focuses on climate change, migration, health and food systems.
- CSE is a public interest research and advocacy organisation based in New Delhi.

## SANT KABIR DAS

- President of India inaugurated the Sant Kabir Academy and Research Centre Swadesh Darshan Yojana and paid tribute to the Bhakti saint, Kabir at Maghar (Uttar Pradesh)
- According to legends, Kabir is said to have departed from the mortal world in Maghar.

**Sant Kabir Das**
- Sant Kabir Das was born in the city of Varanasi, Uttar Pradesh. He was a 15th century mystic poet, saint and social reformer and a proponent of the Bhakti Movement.
- Teacher: His early life was in a Muslim family, but he was strongly influenced by his teacher, the Hindu Bhakti leader Ramananda.
- He belonged to Nirguni tradition, in this tradition, God was understood to be a universal and formless being.
- Kabir's compositions can be classified into three literary forms – Dohas (short two liners), Ramanas (rhymed 4 liners), sung compositions of varying length, known as Padas (verses) and Sabdas (words).
- Kabir Das' writings had a great influence on the Bhakti movement and includes titles like Kabir Granthawali, Anurag Sagar, Bijak, and Sakhi Granth.
- His verses are found in Sikhism's scripture Guru Granth Sahib.
- The major part of his work was collected by the fifth Sikh guru, Guru Arjan Dev.
- He was best known for his two-line couplets, known as 'Kabir Ke Dohe'.
- Language: Kabir's works were written in the Hindi language which was easy to comprehend. He used to write in couplets to enlighten people.

**Kabir's critique of religion and caste:**
- Kabir synthesized Islam and Hinduism
- While he did borrow elements from different traditions, he proclaimed his independence from them

- He did not only target the rituals and practices of both Hinduism and Islam, but also dismissed the sacred authority of their religious books
- Instead of God being an external entity that resided in temples or mosques, Kabir argued that God existed inside everyone.
- Kabir's revolt against the caste system also sought to do away with the complex rituals and ceremonies performed by the Brahmins.
- He argued that it was only through bhakti, intense love or devotion to God could one attain salvation.
- He sought to eradicate caste distinctions and attempted to create an egalitarian society, by stressing the notion that a Bhakt (devotee) was neither a Brahmin nor an 'untouchable' but just a Bhakt.

**Kabir's legacy**
- Kabir's legacy is still going on through a sect known as Panth of Kabir, a religious community that considers him as the founder.
- A sect in northern and central India, many of their members are from the Dalit community
- Today, the sect exists as a large and distinct community, with various sects under different spiritual leaders.
- However, all regard Kabir as their guru and treat the Bijak as their holy scripture. The Bijak contains works attributed to Kabir.

## KHEER BHAVANI TEMPLE

- Around 18,000 Kashmiri Pandits and other devotees visited the Kheer Bhavani temple in Kashmir Valley's Ganderbal district on Jyeshtha Ashtami.
- The religious sanctity of the Mata Kheer Bhavani temple, built atop a holy spring, has a special spiritual significance among Kashmir Pandit devotees across the world.

**About Kheer Bhavani temple**
- Mata Kheer Bhavani temple at Tulmulla in central Kashmir's Ganderbal.
- The temple is dedicated to the goddess Ragnya Devi.
- Situated 30 km from Srinagar city, it is one of the most sacred pilgrimage sites for Kashmiri Hindus.
- The temple gets its name from Kheer, or milk and rice pudding, that pilgrims pour into the spring inside the temple complex as an offering to the goddess.
- Legend has it that the water of the temple's spring changes colour from white to red and black.
- The colour of the water is said to predict the impending future.
- Maharaja Pratap Singh of Jammu and Kashmir and Maharaja Hari Singh contributed to building and renovating the temple.

## SANT TUKARAM

- The Prime Minister of India will inaugurate the Sant Tukaram Shila Mandir in the temple town of Dehu in Pune district.
- Shila refers to a rock that is currently on the Dehu Sansthan temple premises, and that for centuries has been the starting point of Wari, the annual pilgrimage to Pandharpur.

**The Shila Mandir**
- The Bhakti saint Sant Tukaram had sat on this piece of rock for 13 continuous days when challenged about the authenticity of the Abhyangs he had written.
- The very rock where Sant Tukaram Maharaj sat for 13 days is pious and a place of pilgrimage for the Warkari sect.

**The Warkari sect**
- Sant Tukaram and his work are central to the Warkari sect spread across Maharashtra.

- His message about a casteless society and his denial of rituals had led to a social movement.
- Sant Tukaram is credited with starting the Wari pilgrimage
- The Wari sees lakhs of devotees congregating in the temple towns of Dehu and Alandi to accompany the padukas of Sant Tukaram and Sant Dyaneshwar respectively as they start for Pandharpur.
- Participants finish their sowing before they set off. The pilgrims reach Pandharpur on the day of Ekadashi

**Tukaram (1608-1650)**
- Tukaram was born in the Indian state of Maharashtra. Tukaram Bolhoba Ambile was his full name.
- His master was Saint Chaitanya Mahaprabhu of the Bhakti movement.
- A 17th-century poet-saint who lived with Maratha ruler Shivaji Maharaj and saints such as Eknath and Ramdas.
- His poetry was dedicated to Vithoba or Vitthala, an avatar of Vishnu, the Hindu God.
- He is most known for his Marathi Abangas (Dohas), which are a rich inheritance of Gatha – devotional poetry
- He emphasized community-based worship through spiritual melodies known as Kirtans. He promoted the virtues of piety, forgiveness, and inner tranquility.
- He was a vocal critic of caste and gender injustice.
- Tukaram is considered to be the pinnacle of the Bhagawat tradition, which began with Namdev.

## ANCIENT ROCK PAINTINGS

- Volunteers have spotted rock paintings in the Bargur Hills, Erode district, Tamil Nadu.
- The place, called Rukkal Muniyappan, is where a deity of Muneeswarar is located.
- It is worshipped by tribal people, including the Sholagar, the Kurumbar and the Bedagampana Lingayat.
- A rock, 30 feet high and 250 feet in length, has paintings in red ochre and white.
- A hunting scene in red displays human figures and a herd of deer standing opposite each other, while in some images, deer of various sizes are presented.
- An anthropomorphic painting, four feet high, was seen. It looks similar to the Mother Goddess megalithic structures – Two deer and a few animals can be seen beneath the leg of the painting, which depicts the deity blessing humans with resources for hunting.
- The elephant, tiger, and deer paintings are seen separately, while the middle row has the painting of a human.
- It comprises a man standing on a crescent-shaped object and some other symbols, and is considered to be a picture of a boat ride.
- The bottom layer depicts the racial conflict between people, with three warriors opposing 10.
- The conflict between the racial groups is depicted at three more places as ethnic groups fight to dominate or rule the region.

## AHOBILAM

- 'Nava Narasimha': A thematic dance production on the presiding deity of Ahobilam
- Ahobilam, or Singavezhkundram, one of the 108 divyadesams, located in Kurnool district, Andhra Pradesh, consists of nine separate shrines for the deity that are divided into lower and upper Ahobilam, some of which are located on a hilly terrain and a few amid thick forest.
- According to the sthala purana, Lord Narasimha, who took this fierce form to protect his devotee Prahlada, came to Ahobilam to vanquish demon Hiranyakasipu. It is here that deities including Shiva, Rama, Brahma, Hanuman and Garuda have offered their prayers to this fierce avatar.
- Apart from this, Ahobilam has abundant architectural and epigraphical evidences, chronicled right from the times of the **Chalukyas i**n the eighth century AD.
- Nalayira Divyaprabhandam, Abeethi Stavam, Narayaneeyam, Avanthika Parinayam (the Sanskrit play written by Yateendra Mahadesikan, the seventh Jeer of Ahobila Mutt, about the wedding of Narasimha (Ahobaleshwar) with Mahalakshmi (Chenchu Lakshmi)), Ashtapadi, Karavalamba Stotram, and Annamacharya kritis, are some of the hymns that highlight the different qualities of the deity.

- The Telugu folk songs, (chosen in consultation with Aparna Srikanth), which are used in the production, signifies the importance of the **Chenchu tribe** in Ahobilam.

## PRASANTA CHANDRA MAHALANOBIS

- June 29, is **"National Statistics Day",** in 'recognition of the contributions made by Prof. Prasanta Chandra Mahalanobis, the 'Plan Man' of India.
- Every year, the Statistics Day is celebrated on 29th June, the birth anniversary of Prof. Prasanta Chandra Mahalanobis, to recognise his invaluable contribution in establishing the National Statistical System.
- The theme of Statistics Day, 2022 is 'Data for Sustainable Development'.
- On this occasion, MoSPI declare the winners of P C Mahalanobis National Award and Prof. P. V. Sukhatme Award 2020 will be declared during the event.

**Prasanta Chandra Mahalanobis (1893-1972)**
- He is considered the father of modern statistics in India, founded the Indian Statistical Institute (ISI) and shaped the Planning Commission of India.
- He also devised a statistical method called 'Fractile Graphical Analysis', used to compare socio-economic conditions of varied groups.

**Contributions**
- **Mahalanobis Distance:** In 1930 he proposed the Mahalanobis Distance for the first time, which is a measure of comparison between two data sets.
- **Indian Statistical Institute:** In 1932 he founded ISI in Kolkata.
- Journal: In 1933 he started '**Sankhya: The Indian Journal of Statistics'**.
- He established **National Sample Survey** and set up the **Central Statistical Organisation** to coordinate statistical activities in 1950
- In 1955 he became the **member of Planning Commission**
- He was instrumental in **formulating India's second five-year-plan (1956-1961),** which laid the **blueprint for industrialisation and development in India**.

# SOCIETY

## CASTE BASED CENSUS

- An all-party meeting held in Bihar has unanimously decided to start the caste based census very soon.

**Background:**
- Bihar Legislature's two resolutions demanding caste-based census had already been rejected by the Central Government because it would be a "divisive exercise". The centre, however, said "States can hold caste census on their own".

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

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

**What is SECC 2011?**
- The Socio-Economic Caste Census 2011 was a major exercise to obtain data about the socio-economic status of various communities.
- It had two components: a survey of the rural and urban households and ranking of these households based on pre-set parameters, and a caste census.
- However, only the details of the economic conditions of the people in rural and urban households were released. The caste data has not been released till now.

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

**Pros of caste census:**
- The precise number of the population of each caste would help tailor the reservation policy to ensure equitable representation of all of them.

**Concerns associated:**
- There is a possibility that it will lead to heartburn among some sections and spawn demands for larger or separate quotas.
- It has been alleged that the mere act of labelling persons as belonging to a caste tends to perpetuate the system.

## SOLOGAMY

- A 24-year-old Vadodara woman announced that she would marry herself in what she described as an "act of self-love".
- The wedding, being seen as one of the first instances of self-marriage or sologamy in the country

**What is sologamy or 'self-marriage'?**
- Sologamy is the act of marrying oneself in a public ceremony, also referred to as self-marriage or autogamy.
- While such a marriage has no legal sanction or status, the symbolic ceremony is used by many as an act to emphasize their self-love and independence.

**When did the trend begin?**
- It can be traced back to Linda Baker, a dental hygienist from the US, who married herself in 1993
- It is widely considered the first publicized act of self-marriage
- A sologamy divorce was also reported last year when a Brazilian model, announced she was ending her solo-marriage after just 90 days as she had fallen in love with someone else.

## RELIGIOUS TOLERANCE AND SOCIAL HARMONY

- The atmosphere of religious intolerance which has seen a sharp rise in the last several years has been a serious cause for concern in the country.
- India is the beloved home for practitioners of all major religions in the world. Indian culture accepts diversity of faiths and beliefs.
- Religious harmony and social cohesion are two core elements for progress and development.
- As per Pew Research Survey 2021, Indians of diverse religious backgrounds overwhelmingly say they are very free to practice their faiths
- But there is growing intolerance towards diverse religions leading to communal violence and ripples in social harmony.

**Instances of intolerance**
- Recent incident of ruling party spokesperson commenting on Islam and the Prophet
- Haridwar Hate speech incident
- Frequent use of National Security Act (NSA) for 'cow slaughter' by some state governments
- As per pew research on the question of inter-religious marriage, most Hindus (67%), Muslims (80%), Sikhs (59%), and Jains (66%) felt it was 'very important' to stop the women in their community from marrying outside their religion

**Why is there raise in intolerance?**
- Political parties polarize naive voters in the name of religion
- Various cultural organisations are misinterpreting and propagating truths to affirm revivalist predispositions
- Irresponsible Reporting by Media: Many a times media broadcasts unconfirmed, sensitive and often biased reports on national television
- For instance: Tablighi Jamaat case during first Covid lockdown
- State's support: India has many hostile neighbors, who wish to make it weak through a communal divide.
- Struggle for identity

**Consequences**
- **Threat to minority:** Rise in intolerance and communal disharmony lead to majoritarianism

- **Mob-violence:** Rise in disharmony has led to targeting of religious minorities and led to a rise in mob-violence
- **Threat to Rule of law:** With rise in incidence of mob lynchings, there is a threat to rule of law – Lynching on cow smuggling, lynching of youth in golden temple
- **Freedom of speech:** It has also impacted freedom of speech-shows of comedians being banned by vigilante groups
- **Regionalism:** The anti-national elements get adequate opportunity to fan regional feelings and work on creating an atmosphere to break the cohesiveness of our society.
- **Damage social fabric:** The social fabric of the society gets irreparably damaged and the conditions of mistrust serve as a catalyst for future conflicts
- **Degrading International image** where countries are losing faith in India's diverse credentials

**Way forward**
- Political and moral support to the minorities
- Effective administration – fair probe, media guidelines
- Implementation of constitutional and legal safeguards
- We, the people of India, must strive hard to generate compassion, strength, sincerity and commitment to ensure the safety and security of the people of India. And uphold the values which are synonym with the word "INDIA" – tolerance, compassion and peace.

## DRAFT ANTI TRAFFICKING BILL

- Activists from different part of the country are planning to travel to the national capital and press for the passage of the Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2022.

**Highlights of the Bill:**
- **The bill proposes stringent punishments** for offenders, including hefty fines and seizing of their properties.
- The Bill also extends beyond the protection of women and children as victims to now **include transgenders as well as any person who may be a victim of trafficking.**
- The draft also does away with the provision that a victim necessarily needs to be transported from one place to another to be defined as a victim.
- **Exploitation has been defined to include,** at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation including pornography, any act of physical exploitation, forced labour or services, slavery or practices similar to slavery, servitude or forced removal of organs etc.

**Applicability**- The law will extend to:
- All citizens inside as well as outside India.
- Persons on any ship or aircraft registered in India wherever it may be or carrying Indian citizens wherever they may be.
- A foreign national or a stateless person who has his or her residence in India at the time of commission of offence under this Act.
- Every offence of trafficking in persons with cross-border implications.
- Defence personnel and government servants, doctors and paramedical staff or anyone in a position of authority.

**What are the constitutional & legislative provisions related to Trafficking in India?**
1. Trafficking in Human Beings or Persons is prohibited under the Constitution of India under Article 23 (1).
2. The Immoral Traffic (Prevention) Act, 1956 (ITPA) is the premier legislation for prevention of trafficking for commercial sexual exploitation.
3. Criminal Law (amendment) Act 2013 has come into force wherein Section 370 of the Indian Penal Code has been substituted with Section 370 and 370A IPC which provide for comprehensive measures to counter the menace of human trafficking.

## WORLD DAY AGAINST CHILD LABOUR

- The United Nations observes **June 12 each year as the 'World Day Against Child Labour'** to bring attention to the evil practices of child labour across the world.
- **The International Labour Organisation launched this day in 2002** to tackle this global issue against child labour.

**Theme: "Universal Social Protection to End Child Labour".**

**UN report on Child Labour:**
- 160 million children are still engaged in child labour – some as young as five.
- At the beginning of 2020, one in ten children aged five and over were involved in child labour worldwide.
- The number of children in child labour declined by 85.5 million between 2000 and 2020 i.e from 16% to 9.6%.
- At the global level, national expenditure on social protection for children amounts to only 1.1% of GDP.
- Africa is the region with the largest share of children in the population.

**ILO Conventions on the issue:**
- **The ILO Convention No. 182,** which deals with the worst forms of child labour as well as **ILO Convention No. 138,** that deals with the minimum age for employment, are the two main global conventions on the issue.

**Indian Constitution provisions in this regard:**
- **Article 21(A) and Article 45 –** The child has the right to Education i.e. the state shall provide compulsory and free education to the children of the age six to 14 years.
- **Article 24 –** There is a provision under which a child below the age of 14 years cannot be employed in any mine, factory or hazardous workplace.
- **Article 39(f) –** The child's youth and childhood are to be protected against moral and material abandonment and exploitation.

**Government measures undertaken to eradicate child labour in India:**
- **Child Labour (Prohibition and Regulation) Act (1986)** to prohibit the engagement of children in certain employments and to regulate the conditions of work of children in certain other employments.
- **Child Labour (Prohibition and Regulation) Amendment Act, 2016:** The Amendment Act completely prohibits the employment of children below 14 years.
- **National Policy on Child Labour (1987),** with a focus more on rehabilitation of children working in hazardous occupations and processes, rather than on prevention.
- **Juvenile Justice (Care and Protection of Children) Act2000 and amendment of the JJ Act in 2006:** includes the working child in the category of children in need of care and protection, without any limitation of age or type of occupation.
- **Pencil:** The government has launched a dedicated platform viz. pencil.gov.in to ensure effective enforcement of child labour laws and end child labour.
- **The Right to Education Act 2009** has made it mandatory for the state to ensure that all children aged six to 14 years are in school and receive free education.

## THE ROLE OF CASTE IN ECONOMIC TRANSFORMATION

- Caste, a structural factor that impedes economic transformation in India.
- Caste through its rigid social control and networks facilitates economic mobility for some and erects barriers for others by mounting disadvantages on them.

- Caste shapes the ownership pattern of land and capital and simultaneously regulates access to political, social, and economic capital too.

## Ways it impedes
- There are three ways in which caste impedes the economic transformation in India:
- Ownership and land inequality related to productivity failure within the farm sector;
- Elite bias in higher education and historical neglect of mass education, and
- Caste-based entry barriers and exclusive networks in the modern sector.
- The divergent outcomes in structural transformation between countries in the global South, particularly India, China and South East Asia, is due to these three factors.
- All the nations which succeeded in achieving inclusive growth in the Global South had land reforms combined with human capital, invested in infrastructure by promoting capitalism from below and began industrialisation in the rural sector.
- India lost on all three counts.

## Land Ownership, Productivity
- India has one of the highest land inequalities in the world today.
- Unequal distribution of land was perpetuated by British colonial intervention that legalised a traditional disparity.
- Some castes were assigned land ownership at the expense of others by the British for its administrative practices.
- The British inscribed caste in land governance categories and procedures that still underpin post-colonial land ownership pattern in India
- The prescribed categories and practices have entrenched caste inequality in land ownership.
- Even the subsequent land reform that took place after India's independence largely excluded Dalits and lower castes.
- It emboldened and empowered mainly intermediate castes at the expense of others in rural India.
- Further green revolution tightened landlords social control over others in rural India.
- Land still defines social status and pride in many parts of rural India.

## Modern Day Real Estate
- Real estate and construction still works as a source of inheritance, family lineage and speculative capital
- Those castes that had a stake in agriculture did not benefit from the economic reforms (1991) for two reasons — historical neglect of education and the entry barriers erected by the upper castes in modern sectors.

## Neglect of Education
- If strong growth in productivity within the farm sector is crucial for sustained economic growth, an educated workforce is equally necessary to move to the modern sectors.
- India failed on both accounts.
- The Indian education system has been suffering from an elite bias since colonial times.
- It primarily focused on higher education for the elites neglecting basic education of mass
- Inequality in access to education got translated into inequality in other economic domains including wage differentials in India.
- In contrast, Chinese and other East Asian countries invested in basic education and gradually shifted towards higher education.
- Their success in manufacturing is a direct outcome of the investment in human capital.
- As South East Asia and China captured low-end manufacturing jobs, India largely concentrated in high-end technology jobs.

## Barrier to Entrepreneurship
- India did not witness such capitalism from below except in a few cases.

- Caste shaped policy outcomes, including India's highly unequal land reform and lack of public provision of education and health, which in turn erected barriers to economic diversification.
- Castes that were already in control of trading and industrial spaces resisted the entry of others.
- Social inequalities have mounted barriers for economic transition
- For caste is not a residual variable, but is an active agent which stifles economic transformation.

# INTERNATIONAL RELATION

## FREE TRADE DEAL BETWEEN ISRAEL AND UAE

- Israel signed a free trade deal with the United Arab Emirates its first with an Arab country, building on their U.S.-brokered normalisation of relations in 2020 i.e. Abraham Accords
- UAE-Israel trade will exceed $2 billion in 2022, rising to around $5 billion in five years, bolstered by collaboration in renewable, consumer goods, tourism and the life sciences sectors
- The UAE was the first Gulf country to normalise ties with Israel and only the third Arab nation to do so after Egypt and Jordan.
- The signing came two days after thousands of flag-waving Israelis marched through Jerusalem's Old City during a nationalist procession marking Israel's 1967 capture of east Jerusalem. Israel annexed east Jerusalem in 1980, a move never recognised by the international community. The UAE "strongly condemned" what it called Israel's "storming" of Jerusalem's Al Aqsa mosque compound, one of Islam's holiest sites.

**Abraham Accords**

- Abraham Accords deal, sponsored by the US, was part of the country's regional security agenda to counter Iran.
- As part of this security agenda — signed during the Trump administration — the US prioritised improving relations between Israel and the Gulf countries, something that the latter nations have been wary of because of the Israel-Palestine conflict.
- As part of the Abraham Accords, Israel agreed to stop further annexation of Palestinian territory.
- The accords were signed by the leaders of Bahrain, Israel and the UAE in September 2020.
- After Egypt in 1979 and Jordan is 1994, the UAE became the third Arab country to agree to formally normalize relations with Israel, as well as the first Persian Gulf country to do so.
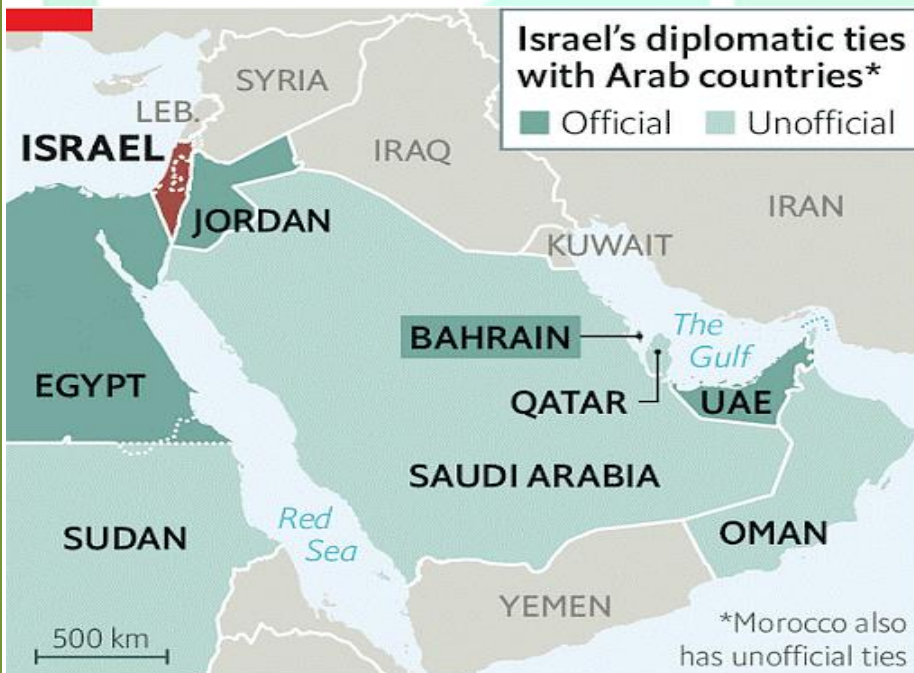


The Economist

## CHINA AND PACIFIC ISLANDS NATIONS

- The Foreign Minister of China, is currently on an eight-day visit to ten Pacific Island Countries (PICs), and has co-hosted with Fiji the Second China-Pacific Island Countries Foreign Ministers Meeting
- During the meeting, China's effort to push through a comprehensive framework deal failed to gain consensus among the PICs.
- Though this has raised regional concerns about China's growing footprint in the Pacific islands, it has also been seen as a demonstration of China's limitations in the region.
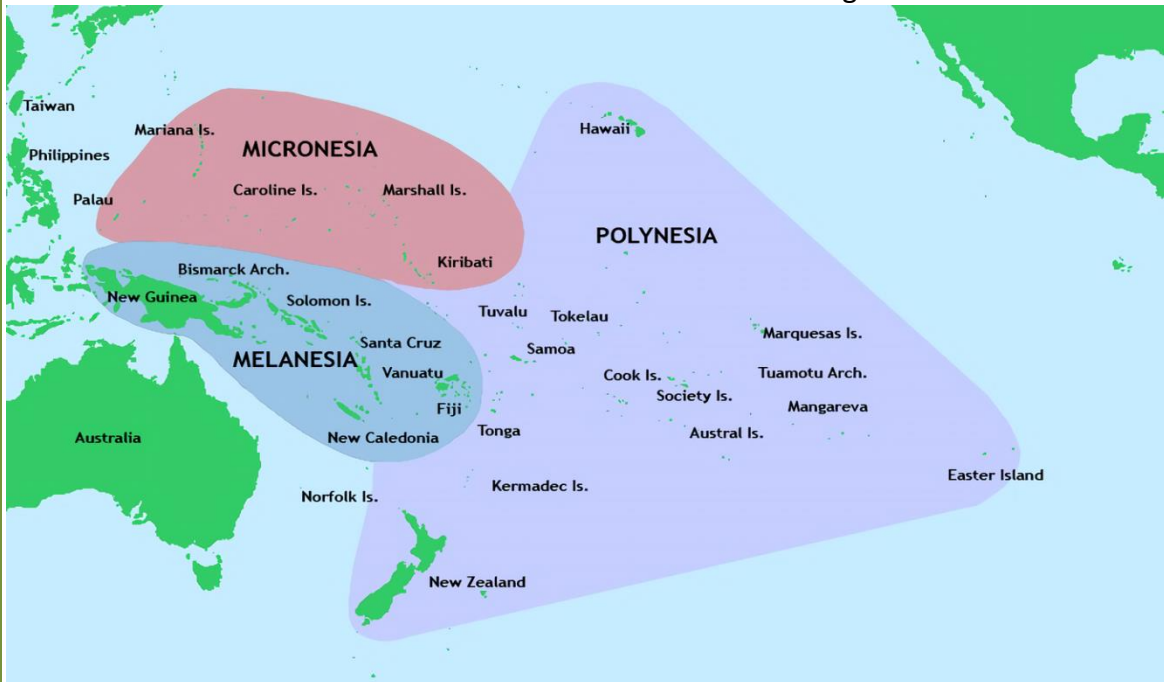


## What is the strategic significance of the PICs?

- The Pacific Island Countries are a cluster of 14 states which are located largely in the tropical zone of the Pacific Ocean
- They include Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.
- They are divided on the basis of physical and human geography into three distinct parts — Micronesia, Melanesia and Polynesia.
- Though they are some of the smallest and least populated states, they have some of the largest Exclusive Economic Zones (EEZs) in the world.
- Large EEZs translate into huge economic potential due to the possibility of utilising the wealth of fisheries, energy, minerals and other marine resources present in such zones.
- Hence, they prefer to be identified as Big Ocean States, rather than Small Island States.
- The major powers of the colonial era competed with each other to gain control over these strategic territories.
- The Pacific islands also acted as one of the major theatres of conflict during the Second World War between imperial Japan and the U.S
- The 14 PICs, bound together by shared economic and security concerns, account for as many number of votes in the United Nations, and act as a potential vote bank for major powers to mobilise international opinion.

## What does China seek to achieve from the PICs and how?

- The PICs lie in the natural line of expansion of China's maritime interest and naval power.
- The PICs are located geo-strategically in what is referred to by China as its 'Far Seas', the control of which will make China an effective Blue Water capable Navy — an essential prerequisite for becoming a superpower.
- At a time when the Quad has emerged as a major force in the Indo-Pacific vis-à-vis China, the need to influence the PICs have become an even more pressing matter for China.
- The Taiwan factor plays a major role in China's Pacific calculus – Wooing the PICs away from the West and Taiwan will therefore make the goal of Taiwan's reunification easier for China.

- A zero-sum game has been underway in the past few decades in the Pacific between China and Taiwan in terms of gaining diplomatic recognition.

**What are the implications of China's latest move?**

- China has increasingly started talking about security cooperation in addition to its economic diplomacy towards the PICs.
- Recently, China signed a security deal with the Solomon Islands, which raised regional concerns.
- The recent documents rejected by PICs gives a broad proposal about co-operation in the political, security, economic and strategic areas and outlines the more specific details of co-operation in the identified areas.
- The intensification of China's diplomacy towards the Pacific Islands have made the powers who have traditionally controlled the regional dynamics like the U.S. and Australia more cautious.

## INDIA HOLDS TALK WITH AFGHANISTAN GOVERNMENT

- For the first time since the Taliban takeover, India has sent an official delegation to Afghanistan, led by Joint secretary at Ministry of External Affairs.

**Areas of discussion:**

- Resumption of stalled infrastructure projects, activation of diplomatic ties, and restarting the issue of visas for Afghan students and patients.

**India's assistance so far:**

- In terms of humanitarian assistance, India has sent 20,000 metric tonnes (MT) of wheat, 13 tonnes of medicines, 500,000 doses of Covid vaccines, and winter clothing for the Afghan people so far.
- This aid has been distributed through international organisations like the United Nations, the World Health Organization, the World Food Programme, and UNICEF because India doesn't have people on the ground to distribute it.

**India's stand on Afghanistan after Taliban takeover:**

- Under India's presidency, UNSC adopted resolution 2593. It stated that the territory of Afghanistan is not to be used to threaten any country or shelter terrorists.
- Participated in the UN High-Level Meeting on the Humanitarian Situation in Afghanistan held in September. In this meeting, India called for normalisation of regular commercial operations of Kabul airport which could help the flow of relief material to Afghans.
- India hosted the Delhi Regional Security Dialogue on Afghanistan in November 2021.

**Issue**

- Taliban has taken full control of Afghanistan. People have no jobs and incomes. Over 22 million Afghans will suffer food insecurity last winter as a drought driven by climate change adds to their woes. This will force them to choose between migration and starvation.

**Significance of Afghan Stability**

- Can have spill over to Neighbouring central Asian countries like Tajikistan, Uzbekistan etc
- Taliban resurgence will revive extremism in the region and the region can become a safe sanctuary for Let,ISIS etc.
- Civil war in Afghanistan will lead to a refugee crisis in Central Asia and beyond.
- Afghanistan's stability will help the Central Asian countries with the shortest access to the seaports of the Indian ocean.
- Afghanistan has been an important link in the regional trade, cultural, playing the role of a connecting bridge for Central and the rest of the world.

**Need of India to engage with Taliban**

- Taliban is now having a significant presence in Afghanistan.
- India is already having huge investment in Afghanistan.To secure assets worth $3 billion, India should engage with all parties in Afghanistan.
- Taliban engaging with Pakistan deep state will not be in India's best interest.
- If India does not engage now Russia, Iran, Pakistan and China will emerge as the shapers of Afghanistan's political and geopolitical destiny, which for sure will be detrimental to Indian interests.

**Need of the hour:**
- Urgent need to collectively act for the safety of Afghan civilians by checking violence by Taliban
- Afghanistan should be given enough space in Central Asian architectures like SCO (Shanghai cooperation organisation)
- The USA,Iran,China,and Russia should actively involve India to maintain stability in Afghanistan.
- Unified action for the refugee crisis if it arises.
- Indian engagement with Taliban to maintain peace with immediate neighbours.

## INDO-PACIFIC ECONOMIC FRAMEWORK FOR PROSPERITY (IPEF)

- India needs to be cautious and have clarity on the U.S.-led Indo-Pacific Economic Framework for Prosperity
- Recently in Quad Summit, United States announced the establishment of Indo-Pacific Economic Framework for Prosperity (IPEF) with other partner countries
- Within days of its launch, IPEF expanded its membership to the Pacific Island states, with Fiji joining the initiative.
- At its launch, the IPEF was proposed as an elaborate framework of rules covering four pillars, namely, fair and resilient trade, supply chain resiliency, clean energy decarbonisation, and tax and anti-corruption.

**Areas of Concern**
**On IPRs**
- Under the "fair and resilient trade" pillar, the initiative aims to develop high-standard, worker-centered commitments covering labour rights, the environment and climate etc
- Notable exclusion from this list is intellectual property rights (IPRs) that have generally been at the heart of the U.S.' economic engagements with its partner countries.

**Import Tariffs**
- The primary objective of the IPEF is to ensure a high degree of regulatory coherence and to make market access contingent upon realisation of regulatory standards.
- The standards and regulations in most developed countries often create discriminatory barriers to trade and overcoming these barriers is usually beyond the capacities, both institutional and otherwise, of lesser developed countries.

**Labour Rights and the Environment and Climate Change**
- Labour rights and the environment and climate change are included in IPEF
- WTO members had arrived at a consensus that the internationally recognized core labour standards of the ILO should be used to deal with issues pertaining to labour rights.
- The UNFCCC had cautioned that measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.
- The IPEF could threaten abrogation of these decisions at the WTO and the UNFCCC.

**Data Portability**
- Control over data, the driver of the digital economy, will increasingly determine the dynamics of economies, and hence the issue of data portability assumes critical importance

**For India to Watch**
- On this issue of data localisation, the Government of India has not yet taken a clear position.
- In 2019 in the Draft National e-Commerce Policy, wherein it had backed restrictions on cross-border data flows. The key challenge for India is to sustain this diametrically opposite view to an uncompromising position of the U.S. on data localisation.
- India should also be wary of emphasis that is being given to strengthening labour rights in the on-going discussions on the IPEF

**Way Forward**
- **Establishing Common Standards**: Such standards will cover labour rights, environmental standards, protection of intellectual property rights.
- **Addressing Tech-related Issues:** Clear framework on Data flow
- **Balancing Self-Reliance and Globalisation:** India has always expressed its desire to attract foreign investment and become part of global supply chains, it is time to utilize the opportunities provided under IPEF with carefully framed policies.

## BIMSTEC

- June 6 marked the completion of 25 years since the **1997 Bangkok Declaration** launched a grouping BIMSTEC

**BIMSTEC**
- **The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)** is a regional organisation comprising seven Member States: five deriving from South Asia, including Bangladesh, Bhutan, India, Nepal, Sri Lanka and two from Southeast Asia, including Myanmar and Thailand.
- This sub-regional organisation came into being on 6 June 1997 through the Bangkok Declaration. Nepal, Bhutan and Myanmar joined the grouping later
- The BIMSTEC Secretariat is in Dhaka.

**Institutional Mechanisms:**
- BIMSTEC Summit
- Ministerial Meeting
- Senior Officials' Meeting
- BIMSTEC Working Group
- Business Forum & Economic Forum

**Key achievements**
- It has crafted a new Charter for itself, spelling out the grouping's vision, functions and has secured a legal personality.
- It has prioritized the sectors of cooperation with each member-state serving as the lead country for the assigned sector
- Survival through the turns and twists of internal tensions: influx of over a million Rohingya refugees, Military coup in Myanmar and political and economic crisis afflicting Sri Lanka
- Unlike SAARC and IORA, BIMSTEC has continued to hold its summits and meetings of Foreign Ministers and it has now resolved to hold regular summits once in two years
- The grouping has also registered progress in combating terrorism, forging security cooperation, and creating mechanisms and practices for the better management of humanitarian assistance and disaster relief.
- Institutions such as an Energy Centre and the Centre on Weather and Climate are in place to push sectoral cooperation forward.

**The Fault Lines**
- A major failure relates to the continuing inability to produce a comprehensive Free Trade Agreement (FTA) 18 years after the signing of the Framework Agreement.
- **Connectivity:** Only limited progress has been achieved so far, despite the adoption of the Master Plan for Connectivity supported by the Asian Development Bank (ADB).
- **Access to financial resources:** For greater regional connectivity, more financial resources are needed. The movement towards establishing the BIMSTEC Development Fund is minimal.
- The grouping has talked about the Blue Economy but is yet to begin any work on it.

**Way Ahead**
- In this Indo-Pacific century, BIMSTEC has the potential to play a pivotal role, deepening linkages between South Asia and Southeast Asia. It should accelerate the region's economic development by collaborating with the newly minted Indo-Pacific Economic Framework for Prosperity (IPEF). New synergy should be created between BIMSTEC and the IPEF.

## GULF REGION

- Recently, the ruling party of India suspended its national spokesperson and expelled its Delhi spokesperson, following comments they had made about Islam and the Prophet
- The move came after three countries in the Gulf region had summoned the Indian ambassadors to their nations to register their protest
- The ruling party's action underlines the significance of the Gulf region for India
- Barring the Jewish state of Israel, the 10 other countries of the Gulf region — Saudi Arabia, Qatar, Iran, Iraq, Bahrain, Kuwait, United Arab Emirates, Oman, Jordan and Yemen — together account for one-fifth of the world's Muslim population, and are among the strongest voices of the Muslim world.

**Why is the region important for India?**
- The two most important reasons for the relationship are oil and gas, and trade.
- Two additional reasons are the huge number of Indians who work in the Gulf countries, and the remittance they send back home.



**Trade**

- **UAE:** The UAE was India's third-largest trading partner in 2021-2022, and second-largest for both exports ($28 billion) and imports ($45 billion)
- The UAE accounted for 6% of India's total exports and 7.3% of imports in the last financial year
- **Saudi Arabia:** At a total volume of $42.9 billion in 2021-22, Saudi Arabia was India's fourth-largest trading partner**.**
- **Iraq:** It was India's fifth-largest trading partner in 2021-22 at $34.3 billion.
- **Qatar:** The total trade was $15 billion, accounting for just 1.4% of India's total trade, but the country is India's most important supplier of natural gas.
- Qatar accounts for 41% of India's total natural gas imports. The UAE accounts for another 11%.

**Oil**
- The share of Persian Gulf countries in India's crude imports has remained at around 60% over the last 15 years.
- In 2021-2022, the largest exporter of oil to India was Iraq, whose share has gone up from 9% in 2009-2010 to 22%.

**Indian Diaspora in Gulf Countries**
- The Gulf has the largest Indian Diaspora working there.
- The UAE, Saudi Arabia and Kuwait together account for over half of all NRIs.
- In terms of remittances from abroad, India was the largest recipient in 2020 at $83.15 billion. The largest contributor is the huge Indian diaspora in the Gulf.
- India has underlined the importance of Gulf countries by frequent visit by Indian delegations to the region and the Gulf countries have reciprocated the same. It is highly important that India maintain a cordial relationship with these countries given their importance in India growth and development.

## REAM NAVAL BASE

- A Chinese base in Cambodia could become a choke-point in the Gulf of Thailand close to the strategically important Malacca Strait that has prompted global concern that it will be used by Beijing as a naval outpost on the Gulf of Thailand.
- Cambodia's official described the expansion of the Ream Naval Base as **"cooperation between China and Cambodia"**

**Background**
- China and Cambodia have reportedly signed a secret pact allowing China exclusive use of a naval base on the Gulf of Thailand, although officials from both countries have denied such a deal exists.

**Ream Naval Base**
- **Location:** Ream Naval Base is a facility operated by the Royal Cambodian Navy on the coast of the Gulf of Thailand in the province of Sihanoukville, Cambodia.
- Ream faces the Gulf of Thailand, adjacent to the South China Sea
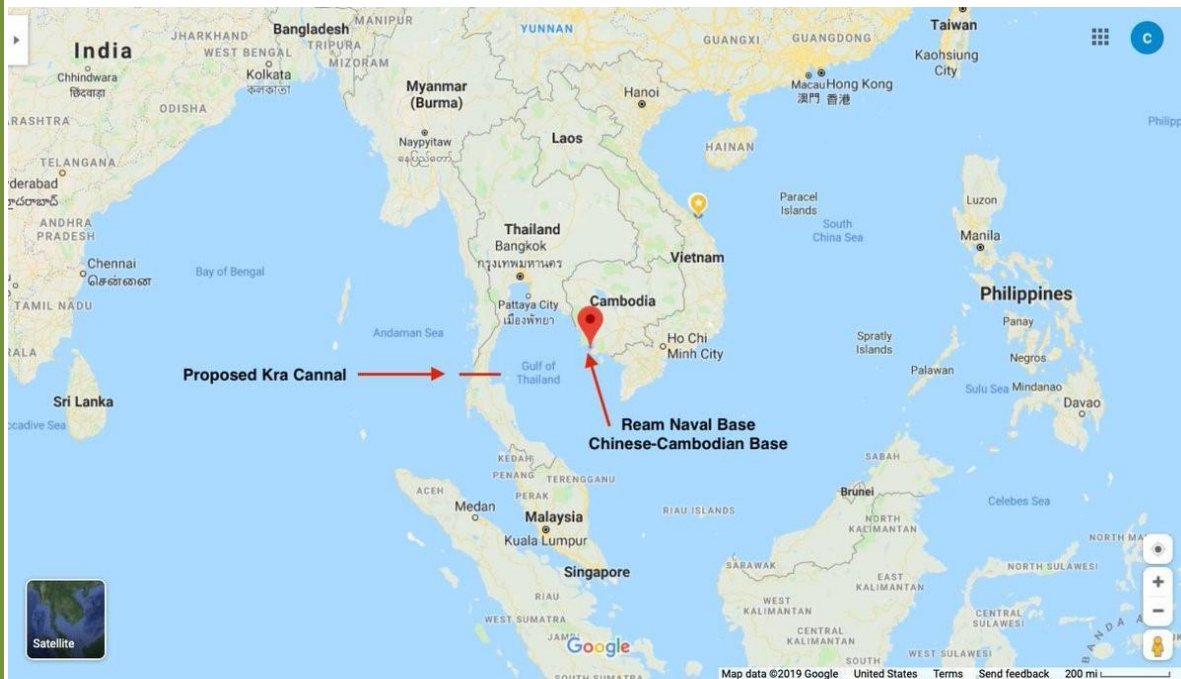
**Significance**

- This would be china's second overseas naval foothold, after a base in Djibouti opened in 2017.
- A Chinese base in Cambodia could become a choke-point in the Gulf of Thailand close to the strategically important Malacca Strait.
- China's strategic military footprint in Southeast Asia would help it bolster its territorial claims in the disputed South China Sea.

## INDIA AND VIETNAM RELATION

- India and Vietnam signed a Memorandum of Understanding (MoU) on mutual logistics support
- Also signed the 'Joint Vision Statement on India-Vietnam Defence Partnership towards 2030', which will significantly enhance the scope and scale of existing defence cooperation
- And agreed for early finalization of $US 500 million Defence Line of Credit extended to Vietnam.

**What are Logistics agreements?**

- Logistics agreements are administrative arrangements facilitating access to military facilities for exchange of fuel and provisions on mutual agreement simplifying logistical support and increasing operational turnaround of the military when operating away from India.

**India- Vietnam Relations**

- Relations between India and Vietnam have been governed by several areas of shared political interests.

**Areas of Cooperation:**
**Economic ties:**

- India is now the 8th largest trading partner of Vietnam.
- Vietnam is the 4th largest trading partner of India among ASEAN countries
- Vietnam is also the second largest export destination for India after Singapore in the ASEAN region.
- India is investing in development and capacity assistance for Vietnam through quick impact projects (QIP), proposals in the area of water resource management in Vietnam's Mekong Delta region, Sustainable Development Goals (SDGs), and digital connectivity.

**Defence Cooperation:**

- The relations between the two countries especially defence ties, benefited extensively from India's Look East policy.
- Vietnam is interested in India's Akash surface-to-air systems and Dhruv advanced light helicopters and Brahmos missiles.
- Apart from this, the defence relations include capacity building, dealing with common security concerns, training of personnel, and cooperation in defence R&D.
- Both countries reaffirm the strong India-Vietnam Defence cooperation which is a key pillar of Comprehensive Strategic Partnership.

**Strategic partnership:**
- Bilateral relations were upgraded to a "Strategic Partnership" in 2017, and upgraded to a "Comprehensive Strategic Partnership" in 2016
- Cooperation in the UN Security Council has been exemplary. The shared respect for international law, including UNCLOS 1982, and a rules-based order is a strong commonality.

**Cooperation at Multiple Fora:**
- India and Vietnam closely cooperate in various regional forums such as East Asia Summit, Mekong Ganga Cooperation, Asia Europe Meeting (ASEM), and UNSC.

**Tourism:**
- Around 169,000 Indians visited Vietnam and over 31,000 Vietnamese visited India in 2019, recording a growth of 28% and 32% over 2018 respectively.
- India is a favored spiritual destination for many Vietnamese because it is home to many famous Buddhist temples

**China factor:**
- Both countries have border problems with China.
- China aggressively continues to encroach in the territories of the two countries.
- Hence, it is natural for both the countries to come closer with a view to restrain China from its aggressive actions.

**Way Forward**
- **Mutual Co-ordination and Co-operation:** Considering the unique challenges of Indo-Pacific region, both the countries should work in close coordination at multiple forums
- **Promoting Common areas:** India and Vietnam both can mutually benefit each other in the arena of **Blue Economy and ocean security**.
- **Providing financial resources, improving connectivity** and establishing good relations in the region, helps both the country to fight Chinese presence in the region.

## INDIA-ASEAN CONCLAVE

- India is hosting the two-day conclave to mark the 30th anniversary of its relations with the 10-nation Association of Southeast Asian Nations (ASEAN).
- The foreign ministers of India and ASEAN countries to uphold multilateralism in jointly responding to the regional and global challenges
- They reaffirmed the commitment to multilateralism founded on the principles of the international law, including the Charter of the United Nations, the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and other relevant UN treaties and conventions, maintain an open and inclusive regional cooperation framework, support ASEAN Centrality in the evolving rules-based regional architecture, uphold multilateralism in jointly responding to regional and global challenges
- Myanmar did not participate in the India-ASEAN foreign ministers' meeting.

**ASEAN**

- The Association of Southeast Asian Nations was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration)
- The motto of ASEAN is "One Vision, One Identity, One Community".
- Founding Members Indonesia, Malaysia, Philippines, Singapore and Thailand.
- Brunei Darussalam (1984), Vietnam (1995), Lao PDR and Myanmar (1997), and Cambodia (1999), joined the ASEAN later.
- ASEAN Secretariat – Indonesia, Jakarta.

**Significance**

- It is the 3rd largest market in the world
- It is the 6th largest economy in the world, 3rd in Asia.
- The Free-trade agreements (FTAs) with China, Japan, South Korea, India, Australia and New Zealand.

**ASEAN-led Forums**

- **ASEAN Regional Forum (ARF)**: Launched in 1993, the twenty-seven-member multilateral grouping was developed to facilitate cooperation on political and security issues to contribute to regional confidence-building and preventive diplomacy.
- **ASEAN Plus Three**: The consultative group initiated in 1997 brings together ASEAN's ten members, China, Japan, and South Korea.
- **East Asia Summit (EAS)**: The summit seeks to promote security and prosperity in the region and is usually attended by the heads of state from ASEAN, Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States.

**India and ASEAN**

- India's relationship with ASEAN has emerged as a key cornerstone of our foreign policy.
- The relationship has evolved from the 'Look East Policy' enunciated in early 1990s which led India to become a Sectoral Partner of ASEAN in 1992, a Dialogue Partner in 1996 and a Summit-level Partner in 2002.
- The India-ASEAN Strategic Partnership acquired a new momentum with the announcement of "Act-East Policy" in the 12th Summit in 2014.
- India and ASEAN already has 25 years of Dialogue Partnership, 15 years of Summit Level interaction and 5 years of Strategic Partnership with ASEAN.

**Economic Cooperation:**

- ASEAN is India's fourth largest trading partner.
- India's trade with ASEAN stands at approx. 10.6% of India's overall trade.
- India's export to ASEAN stands at 11.28% of our total exports. The ASEAN-India Free Trade Area has been completed.

**Socio-Cultural Cooperation:**

- Programmes to boost People-to-People Interaction with ASEAN, such as inviting ASEAN students to India, Special Training Course etc

**Delhi Declaration:**

- To identify Cooperation in the Maritime Domain as the key area of cooperation under the ASEAN-India strategic partnership.

**Delhi Dialogue:**

- Annual Track 1.5 event for discussing politico-security and economic issues between ASEAN and India.

**ASEAN-India Centre (AIC):**

- To undertake policy research, advocacy and networking activities with organizations and think-tanks in India and ASEAN.

**Political Security Cooperation:**
- India places ASEAN at the centre of its Indo-Pacific vision of Security and Growth for All in the Region.

**Financial Assistance**
- Financial assistance has been provided to ASEAN countries from the following Funds:
- ASEAN-India Cooperation Fund
- ASEAN-India S&T Development Fund
- ASEAN-India Green Fund



## INDIA-IRAN RELATION

**Political relation**
- India and Iran shared a border till 1947 and share several common features in their language, culture and traditions.
- Independent India and Iran established diplomatic links on 15 March 1950

**Economic relation**
**Energy**
- India-Iran commercial ties have traditionally been dominated by Indian import of Iranian crude oil.
- Iran has been one of the top sources of crude oil for India.
- The proposed Iran-Oman-India undersea gas pipeline can help India move towards clean energy

**Geo-Strategic/connectivity**
- Infrastructure projects like Chahbahar Port, International North South Transport Corridor will help India to bypass the overland route through Pakistan and help in better trade relations with West and Central Asia.

**Geopolitical**
- Iran would act as a gateway to Central Asia and Afghanistan
- India and Iran can engage each other to strengthen the demand for rule based order in Afghaistan

**Cultural relation**
- A MoU was signed in 2008 on holding of "Days of Culture" in two countries.
- India over the years has emerged as one of the favourite tourist destinations for Iranian tourists and every year around 40,000 Iranians visit India for various purposes.

**Terrorism**
- India and Iran both face the threat of terrorism by outfits like Al-Qaeda and Islamic State. Hence both the countries can merge their interest to counter terrorism.

**Challenges**
**Intolerance**
- The comments made in India on the Prophet was criticised by the 57-member Organisation for Islamic Cooperation (OIC).
- The controversy has overshadowed India's other diplomatic engagements.

**China factor**

- Iran is a part of **China's ambitious Belt And Road initiative**. This might come in conflict with India's interests in Iran.

**USA Sanctions on Iran**
- India has drastically cut its Iranian engagement due to sanctions (oil import), while Iran has looked to China for more infrastructure investment
- Bilateral trade dropped to just over $2 billion (2020-21) from $17 billion (2017-18).

**India-Israel ties**
- Ties appeared to have been hit by New Delhi's decision to join the Israel-India-UAE-U.S. group, portrayed as an "anti-Iran" coalition.

**Way forward**
- India needs to play a balancing act between the Middle East and the west. India needs to closely watch the space created by its exit, given India's loss is an opportunity for other countries, especially China.

## SOLIDARITY-2023

- India backs China's plan for joint border activity
- India has supported an initiative by China to conduct a "joint border operation" in 2023 of all member countries of SCO
- The border operation called "Solidarity-2023" will be organised by China
- The Border Security Force (BSF) hosted the 21st meeting of Experts' Group and Border Security Conference of SCO countries
- At the meeting participants exchanged information reflecting assessments of the situation on the State borders of the SCO member states, trends and forecasts of its development.
- The results of the Joint Border Operation "Solidarity-2019-2021" carried out in 2021 by the border services of the competent authorities of the SCO member states were discussed and highly appreciated.
- The plan for the preparation and conduct of the Joint Border Operation "Friendship Border – 2022, this year was reviewed and approved.

**Shanghai Cooperation Organization (SCO)**
- SCO is a permanent intergovernmental international organization.
- It's a Eurasian political, economic and military organization aiming to maintain peace, security and stability in the region.
- It was created in 2001.
- The SCO Charter was signed in 2002, and entered into force in 2003.
- Founding members: Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five.
- Following the accession of Uzbekistan to the organization in 2001, the Shanghai five was renamed the SCO.
- India and Pakistan became members in 2017.

**Structure:**
- **Heads of State Council** – The supreme SCO body which decides its internal functioning and its interaction with other States & international organizations
- **Heads of Government Council** – Approves the **budget, considers and decides upon issues** related to economic spheres of interaction within SCO.
- **Council of Ministers of Foreign Affairs** – Considers issues related to day-to-day activities.
- **Regional Anti-Terrorist Structure (RATS)** – Established to **combat terrorism, separatism and extremism.**
- **SCO Secretariat** – Based in Beijing to provide informational, analytical & organizational support.

**Official language:**
- The official working language of the SCO Secretariat is **Russian and Chinese**.

## GENEVA PACKAGE

- The recently held 12th Ministerial Conference of the WTO agreed to a series of deals relating to the temporary waivers on Covid-19 vaccines, a moratorium on e-commerce trade, food security and setting limits on harmful fishing subsidies.
- Together these agreements are referred to as the "Geneva Package".

**Ministerial Conference**
- The Ministerial Conference is the WTO's top decision-making body and usually meets every two years.
- All members of the WTO are involved in the MC and they can take decisions on all matters covered under any multilateral trade agreements.
- The WTO's 12th Ministerial Conference was held in Geneva

**Key takeaways**
**Curtailing harmful fishing subsidies**
- A multilateral agreement was passed to curb 'harmful' subsidies on illegal, unreported and unregulated fishing for the next four years, to better protect global fish stocks.

**Note:**
- Overfishing refers to exploiting fishes at a pace faster than they could replenish themselves — currently standing at 34% as per the UN Food and Agriculture Organization (FAO).
- Declining fish stocks threaten to worsen poverty and endanger communities that rely on aquatic creatures for their livelihood and food security.

**Global Food Security**
- Members agreed to a binding decision to exempt food purchased by the UN's World Food Programme (WFP) for humanitarian purposes, from any export restrictions.
- However, countries would be allowed to restrict food supplies to ensure domestic food security needs.

**Covid-19 vaccine production**
- Members agreed to temporarily waive intellectual property patents on Covid-19 vaccines without the consent of the patent holder for 5 years, so that they can more easily manufacture them domestically
- The waiver did not cover all medical tools like diagnostics and treatments

**E-commerce transactions**
- All members agreed to continue the long standing moratorium on custom duties on e-commerce transmissions until the subsequent Ministerial Conference

**India's interest secured**
- India and other developing countries were able to win some concessions on fishing subsidies
- They successfully lobbied to remove a section of the proposal that would threaten some subsidies which would assist small-scale artisanal fishing
- The agreements hold that there would be no limitation on subsidies granted or maintained by developing or least-developed countries for fishing within their exclusive economic zones (EEZ)

**Current moratoriums on electronic transmissions been extended**
- Member countries agreed to extend the current moratorium on not imposing customs duties on electronic transmission (ET) until MC13
- ETs consist of online deliveries such as music, e-books, films, software and video games. They differ from other cross-border e-commerce since they are ordered online but not delivered physically.

- Proponents had put forth that the moratorium would help maintain certainty and predictability for businesses and consumers particularly in the context of the pandemic.
- India and South Africa, citing data from the UN Conference on Trade and Development submitted that extending duty-free market access due to the moratorium resulted in a loss of $10 billion per annum globally — 95% of which was borne by developing countries.

## INDIA- BANGLADESH RELATIONS

- 7th round of India-Bangladesh Joint Consultative Commission was held recently
- India extended its assistance in management of the annual flood in Bangladesh
- And also stated its wish to work with Bangladesh on Artificial Intelligence, start-ups, Fintech and cybersecurity

**India-Bangladesh relations**
- India was one of the first countries to recognize Bangladesh and establish diplomatic relations immediately after its independence in December 1971

**Economic Relations:**
- Bangladesh is India's biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh.
- In the FY 2019-20, India's exports to Bangladesh were $8.2 bn and imports were $1.26 bn

**Connectivity:**
- Both countries jointly inaugurated the newly restored railway link between Haldibari (India) and Chilahati (Bangladesh).
- Agreed to an early operationalization of the Bangladesh-Bhutan-India-Nepal (BBIN) initiative Motor Vehicles Agreement through the expeditious signing of the Enabling MoU
- The second addendum to the Protocol on Inland Water Transit and Trade (PIWTT) was signed recently
- Kolkata-Dhaka-Agartala Bus Service also launched in 2015. This reduced the distance between Kolkata and Agartala from 1,650 km to just 500 km.

**Cooperation over Rivers:**
- India and Bangladesh share 54 common rivers.
- A bilateral Joint Rivers Commission (JRC) has been working since June 1972 to maintain liaison between the two countries to maximize benefits from common river systems.

**Defence Cooperation:**
- Border Management: India and Bangladesh share 7 km. of border, which is the longest land boundary that India shares with any of its neighbours.
- The India-Bangladesh Land Boundary Agreement (LBA) came into force following the exchange of instruments of ratification in June 2015.
- Various Joint exercises of Army (Exercise Sampriti) and Navy (Exercise Milan) take place between the two countries

**Medical tourism**
- Bangladesh accounts for more than 35% of India's international medical patients.
- Bangladesh alone contributes to more than 50% of India's revenue from medical tourism.

**Cooperation in multilateral platforms**
- Members of major regional organisations like South Asian Association for Regional Cooperation (SAARC) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)
- Solidarity at global platforms like UNSC, working together in achieving SDGs

- Cooperation to tackle the challenge of COVID-19 pandemic – participation of Bangladesh in SAARC leaders Video Conference in March 2020 and for creation of the SAARC Emergency Response Fund to counter effects of the global pandemic in the South Asian region.

**Recent Advancements**
- Recently, India and Bangladesh signed seven agreements and also inaugurated three projects to deepen their partnership.
- The use of the Chattogram and Mongla ports in Bangladesh for movement of goods to and from India, particularly from Northeastern India.
- Use of Bangladesh's Feni River for drinking water supply in Tripura.

**Challenges**
**The Teesta river water dispute:**
- The 2011 interim deal aims to share the Teesta river water between India and Bangladesh about 42.5 per cent and 37.5 per cent respectively.
- But, the state of West Bengal object to this demand and never signed the deal, and strain in this issue goes on.

**The issue of Illegal migrants:**
- Bangladesh has already raised concerns over roll out of the National Register of Citizens (NRC) in Assam, an exercise carried out to identify genuine Indian citizens living in Assam and weed out illegal Bangladeshis

**China Factor**
- Bangladesh is an active partner of the Belt and Road Initiative (BRI) that India has not signed up to.
- Bangladesh is also a major recipient of Chinese military inventory, including submarines.

**Other Issues**
- Armed Dacoity in border districts, fake money transfer, cattle smuggling is also a cause of concern for India.
- Trafficking of Illegal migrants and involving them in terrorist activities, prostitution in India is also a challenge in India-Bangladesh relations.
- Apart from that, Bangladesh is also opposing India's proposed the Tapaimukh Dam on the Barak River in Manipur and the Interlinking of the rivers project by India.

**Way forward**
- The early resolution of river water disputes like Teesta is the better way to boost India-Bangladesh relations.
- Involvement of joint forces to reduce border issues such as illegal trading, trafficking, cattle smuggling, etc
- Strengthening of regional groups like SAARC, BIMSTEC etc and focusing on Neighbourhood First policy.
- Good relation between India and Bangladesh is essential for the development of North-east region, exploring the Indo-Pacific region and for greater connectivity to South Asian countries.

## INDO-AUSTRALIA RELATION

- India is one of Australia's Closest security partners and the government is focused on revitalizing Australia's Historically deep engagement with our partners across the Indo-Pacific, Deputy Prime Minister and Defense Minister of Australia ahead of visit to India.
- This is the first high-level visit from Australia after the formation of a new government.

**India-Australia Defense cooperation:**
- An MoU on Defense Cooperation has been signed as well as a Joint Declaration on Security Co-operation.

- There are frequent exchanges of visits including at the level of Service Chiefs, regular Naval, Air Force, and Army Talks; joint naval exercises; regular exchanges at each other's training institutes and seminars.
- The India-Australia defence relationship now encompasses almost every major function of the military:
- Strategic dialogues, coordination, and information exchanges.
- Military exercises involving ground, air, and maritime forces.
- Exchanges and training.
- Defense scientific and technological cooperation.

## GROUP OF SEVEN (G7)

- G7 aiming for $600 bn global infrastructure programme.
- The G7 group announced an attempt to compete with China's formidable Belt and Road Initiative by raising $600 billion for global infrastructure programmes in poor countries
- The Partnership for Global Infrastructure and Investment will deliver hundreds of billions of dollars and deliver quality, sustainable infrastructure that makes a difference in people's lives around the world, strengthens and diversifies our supply chains
- The proposed G7 funding would depend largely on private companies being willing to commit to massive investments

### Group of Seven (G7)

- It is an intergovernmental organisation that was formed in 1975.
- The bloc meets annually to discuss issues of common interest like global economic governance, international security and energy policy.
- The G7 countries are the UK, Canada, France, Germany, Italy, Japan and the US.
- All the G7 countries and India are a part of G20.
- The G7 does not have a formal constitution or a fixed headquarters. The decisions taken by leaders during annual summits are non-binding.

## INDIA-VIETNAM RELATIONS

- Recently, Indian Defence Minister signed Defence Agreements with his Vietnamese counterpart which will significantly enhance the relationship between both the countries.

### India-Vietnam Defence Partnership towards 2030:

- Both the Defence Ministers signed the **'Joint Vision Statement on India-Vietnam Defence Partnership towards 2030'** to bolster bilateral defence cooperation.

### Defence Line of Credit:

- The two ministers agreed on the finalisation of the USD 500 million Defence Line of Credit extended to Vietnam with implementation of the projects under it adding substantially to Vietnam's defence capabilities and furthering the government's vision of **'Make in India, Make for the World.'**

### Mutual Logistics Support:

- Both inked a Memorandum of Understanding (MoU) on **Mutual Logistics Support.**

### Simulators and a Monetary Grant:

- India will gift **two simulators and a monetary grant towards** setting up of Language and IT Lab at the Air Force Officers Training School for capacity building of the Vietnamese Armed Forces.

### India-Vietnam Relations

- India had established the Consul General's office in Hanoi as early as 1956.

- India had stood by Vietnam in opposing US intervention in that country at the cost of embittering Indo-US relations.
- The relationship was further strengthened when India, in the early 1990s, initiated its **"Look East Policy"**

**Economic Cooperation:**
**Trade relations:**
- They have signed ASEAN- India Free Trade Agreement
- During the Financial Year (FY) April 2020 – March 2021, bilateral trade between India and Vietnam reached USD 11.12 billion.

**Defence Cooperation:**
- Vietnam is interested in India's Akash surface-to-air systems and Dhruv advanced light helicopters and Brahmos missiles.
- The defence relations also include capacity building, dealing with common security concerns, training of personnel, and cooperation in defence R&D.

**Strategic Partnership:**
- India and Vietnam agreed to strengthen their strategic partnership "in line with India's Indo-Pacific Oceans Initiative (IPOI) and the ASEAN's Outlook on Indo-Pacific to achieve shared security, prosperity and growth for all in the region."
- Cooperation at Multiple Fora like ASEAN, UNSC, Mekong Ganga Cooperation, Asia Europe Meeting (ASEM), etc

**China Factor:**
- The China factor also weighs heavily in the respective strategic calculus of India and Vietnam.
- Both countries had fought wars with China and both have border problems with that country. China aggressively continues to encroach in the territories of the two countries.
- Hence, it is natural for both the countries to come closer with a view to restrain China from its aggressive actions.

**Way forward**
- **Focus on Indo-Pacific region:** Keeping in mind the strategic challenges in the Indo-Pacific region, both the countries should work together to maintain stability in the region
- **Convergence of interest:** Blue economy, building supply chain resilience, economic integration of the region etc. India's foreign policy envisages India to play an anchor for peace, prosperity and stability in Asia and Africa, deepening ties with Vietnam will only strengthen this narrative.

## PARTNERS IN THE BLUE PACIFIC

- The US and its allies — Australia, New Zealand, Japan and the United Kingdom — have launched a new initiative called 'Partners in the Blue Pacific' for "effective and efficient cooperation" with the region's small island nations.

**What is Partners in the Blue Pacific (PBP) initiative?**
- The PBP is a five-nation "informal mechanism" to support Pacific islands and to boost diplomatic, economic ties in the region.
- It speaks of enhancing "prosperity, resilience, and security" in the Pacific through closer cooperation.
- Through the PBP, the counties — together and individually — will direct more resources here to counter China's aggressive outreach.
- The initiative members have also declared that they will "elevate Pacific regionalism", and forge stronger ties with the Pacific Islands Forum.

- The areas where PBP aims to enhance cooperation include "climate crisis, connectivity and transportation, maritime security and protection, health, prosperity, and education".

## How is China trying to transform its ties in the Pacific?

- Recently China signed a security pact with Solomon Islands, the deal flagged serious concerns about the Chinese military getting a base in the southern Pacific, close to the US island territory of Guam, and right next to Australia and New Zealand.
- Its failed attempt to push 10 Pacific nations to endorse a "game-changing" agreement called the "Common Development Vision" – where it intended to work with "traditional and non-traditional security," and expand law enforcement cooperation with these countries.
- China indicated that it would continue pursuing this goal.

## What is being done by the US and its allies to counter China?

- The US and its partners started **the Indo-Pacific Economic Framework for Prosperity (IPEF)**, a trade-boosting play in the region with 13 nations
- Recently G7 announced a plan — Partnership for Global Infrastructure and Investment (PGII) — to rival China's Belt and Road Initiative by promising to raise $600 billion to fund development projects in low and middle-income countries.
- And now the new initiative 'Partners in the Blue Pacific' for "effective and efficient cooperation" with the region's small island nations

## Why is the Pacific region strategically important?

- In its 2019 strategy report, the US Department of Defence called the Indo-Pacific the "single most consequential region for America's future".
- Spanning a vast stretch of the globe from the west coast of the United States to the western shores of India,
- The region is home to the world's most populous state (China),
- Most populous democracy (India), and largest Muslim-majority state (Indonesia),
- And includes over half of the earth's population.
- Among the 10 largest standing armies in the world, 7 reside in the Indo-Pacific;
- And 6 countries in the region possess nuclear weapons.
- Nine of the world's 10 busiest seaports are in the region,
- And 60 percent of global maritime trade transits through Asia, with roughly one-third of global shipping passing through the South China Sea alone.

## Pacific Island Forum

- Pacific Island Forum is an 'Inter-governmental organization'.
- It was established in year 1971.
- The objective of the organization is to work in support of Forum member governments, to enhance the economic and social well-being of the people of the South Pacific by fostering cooperation between governments and between international agencies.
- The summit of the organization held annually and which is presided by the host country.
- The summit discusses about decisions related to the development and implementations of policies in the region.
- The forum has 18 members, which are as follows- Australia, Cook Islands, Federation of Micronesia, Fiji, French Polynesia, Kribati, Nauru, Palau, Republic of Marshal Island, New Caledonia, New Zealand, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

## INDIA-UAE RELATIONS

- Prime Minister visit to the UAE on June 28 was his fourth visit, given the fact that no Indian PM had visited the UAE for 34 years since the visit of Indira Gandhi in 1981, the transformation in India's engagement with this Gulf state has been quite extraordinary.

## India-UAE relations
- India and the UAE established diplomatic relations in 1972.
- India and United Arab Emirates (UAE) enjoy strong bonds of friendship based on age-old cultural, religious and economic ties between the two nations.

## Economic Co-operation
- The UAE was India's third-largest trading partner in 2021-2022, and second-largest for both exports ($28 billion) and imports ($45 billion)
- The UAE accounted for 6% of India's total exports and 7.3% of imports in the last financial year
- The UAE's investment in India is estimated to be around U.S. $11.67 billion, which makes it the ninth biggest investor in India.
- Under India's revamped FTA strategy, the Government has prioritised at least six countries/regions to deal with, in which the UAE figures at the top of the list for an early harvest deal (or Interim Trade Agreement)
- Recently, the Comprehensive Economic Partnership Agreement (CEPA) between India and the United Arab Emirates (UAE) was signed.
- CEPA provides for an institutional mechanism to encourage and improve trade between the two countries.

## Energy Partner
- The UAE accounts for 8 percent of India's oil imports and was fifth largest supplier of crude oil to India.

## Indian Diaspora
- Around 3 million Indians are living harmoniously in the UAE.
- The remittances from the UAE in the first half of 2020 accounted for US $21 billion.

## India's West Asia policy:
- The UAE occupies a key place in India's West Asia policy.
- The high-level visit from both sides has given a new impetus to this partnership.

## Strategic Importance
- The **UAE, due to its strategic location**, has emerged as an important economic centre in the world.
- **In 2017 the two sides signed the agreement on Comprehensive Strategic Partnership (CSP).**
- The region is home to important strait like **Strait of Hormuz** – which plays important role in ensuring energy security of east Asia

## Space Cooperation
- Space cooperation between India and the UAE gained quick momentum during Prime Minister visit to the Emirates in 2015.
- Together, the two space agencies have developed the **nano-satellite, Nayif-1**, which was launched from the Satish Dhavan Space Centre, Sriharikota in India.
- The two countries are likely to work together on Emirates' '**Red planet Mission'.**
- **Co Operation at Multilateral Forums** like United Nations, West Asia Quad that includes India, Israel, UAE and USA

## Challenges
## Non Tariff Barriers (NTBs):
- Non-Tariff Measures (NTMs) have mostly been covered by Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT).
- **The UAE has 451 SPS notifications and 534 TBT notifications**.

- The SPS notifications are mainly related to live poultry, meat, and processed food. In addition, the TBT notifications are mainly related to fish, food additives, meat, rubber, electrical machinery, etc.
- These measures hamper India's exports to UAE.

**Arab – Iran Conflict:**
- The differences between Iran and the Arab world hinder India's engagement in the Middle-east region. Balancing the relationship sometimes results in reluctance of some strategic agreements.

**Kafala System:**
- The inhuman conditions imposed by the Kafala system on immigrants sometimes create differences between the two countries.

**Growing Intolerance in India:**
- The recent crack caused due comments on Prophet Mohammed by members of ruling party spoils the positive atmosphere between two countries.

**Way forward**
- India should take steps to fight growing intolerance in the country and make sure that such incidents do not affect its relationship with other countries
- The countries should focus on completing their MOUs in order to take their relationship to the next level.
- They should establish more strategic dialogues between them like the 2+2 dialogue.
- India-UAE must try to bring more transparency and predictability in the use of NTBs so that their compliance becomes less cumbersome.
- In recent years, the UAE, through its 'Vision 2021', has sought to diversify its economy and reduce its dependency on oil. This provides an opportunity for India to engage with it in new areas of renewable energy, start-ups, fintech, etc.
- Shared economic visions and geopolitical outlooks have spurred the two sides to seek to expand cooperation across multiple domains. Both nations should come together to further engage with each other, bilaterally as well as on multi-lateral fora, based on mutual trust and confidence. The recent visits by high delegation have created a fresh opportunity for even greater India-UAE coordination and cooperation.

# POLITY

## PREVENTION OF MONEY LAUNDERING ACT

- The Enforcement Directorate has arrested Delhi Health Minister and senior Aam Aadmi Party (AAP) leader Satyendar Jain under the criminal provisions of the Prevention of Money Laundering Act (PMLA) in connection with his alleged involvement in a 'hawala transactions' case.

**About The Prevention of Money Laundering Act**
- It was enacted as a response to India's global commitment (including the Vienna Convention) to curb the menace of money laundering.
- **Objectives of the Act:** PMLA was enacted in 2002 and it came into force in 2005, to curb money laundering (process of converting black money into white) and to provide for seizure of property derived from money-laundering.

**There are mainly 3 objectives of PMLA:**
- To prevent and control money laundering.
- To confiscate and seize the property obtained from the laundered money.
- To deal with any other issue connected with money laundering in India.

**Dispute Redressal**
- The Adjudicating Authority is appointed by the central government. It decides whether the property attached or seized is involved in money laundering.
- The Adjudicating Authority shall not be bound by the procedure laid down by the Code of Civil Procedure,1908, but shall be guided by the principles of natural justice and subject to the other provisions of PMLA.
- **Appellate Tribunal:** An Appellate Tribunal appointed by the Government is given the power to hear appeals against the orders of the Adjudicating Authority. Orders of the tribunal can be appealed in the appropriate High Court.
- **Special Court:** Provision for establishing special court by the Union government under Prevention of Money Laundering Act, 2002 (PMLA).

**PMLA (Amendment) Act, 2012:**
- Adds the concept of 'reporting entity' which would include a banking company, financial institution, intermediary etc.
- PMLA, 2002 levied a fine up to Rs 5 lakh, but the amendment act has removed this upper limit.
- It has provided for provisional attachment and confiscation of property of any person involved in such activities.

## GUN CONTROL LEGISLATION IN INDIA

- The recent incident in the Texas school massacre, Gun Control Legislation in India came into news.

**Arms Act, 1959**
- The Arms Act, 1959 governs matters related to acquisition, possession, manufacture, sale, transportation, import and export of arms and ammunition.
- It defines a specific class of 'prohibited' arms and ammunitions, restricts their use and prescribes penalties for contravention of its provisions.

**Key Provisions**

- Gun license applicants in India must be at least 21 years and not convicted of any offence involving violence, of 'unsound mind' or a threat to public safety and peace.
- Upon receiving an application, the licensing authority (i.e., the Home Ministry), asks the officer in-charge of the nearest police station to submit a report about the applicant after thorough vetting.
- It also enlists specific provisions on curtailing the use of licensed weapons to ensure social harmony.
- No entity is permitted to sell or transfer any firearm which does not bear the name of the maker, manufacturer's number or any other visible or stamped identification mark.
- Any act of conversion (such as shortening the barrel of a firearm or converting an imitation firearm into a firearm) or unlawful import-export is punishable with an imprisonment term of seven years, which may extend to life imprisonment and be liable to monetary fines.

**The Arms (Amendment) Act, 2019**

- The Arms Act amended in 2019 reduces the number of firearms that an individual can procure from three to two.
- The Amended Act also increases the duration of the validity of a firearm license from three years to five years.

## NAGA PEACE PROCESS

- Naga rebel group National Socialist Council of Nagaland (Isak-Muivah) or NSCN(IM) has stuck to its demands for a separate flag and a constitution in an indication that the deadlock in the peace talks with the central government, aimed at bringing an end to India's oldest insurgency, is likely to continue.

**Background**

- The process has been ongoing since mid-1997 when the NSCN (I-M) declared a ceasefire with the armed forces. Other groups began opting for talks in 2001. However, it has been put in a cold storage since the Framework Agreement was signed on August 3, 2015.

**Naga Political Issue**
**Pre- Independence:**

- The British annexed Assam in 1826, and in 1881, the Naga Hills too became part of British India. The first sign of Naga resistance was seen in the formation of the Naga Club in 1918, which told the Simon Commission in 1929 "to leave us alone to determine for ourselves as in ancient times".
- In 1946 came the Naga National Council (NNC), which declared Nagaland an independent state on August 14, 1947.
- The NNC resolved to establish a "sovereign Naga state" and conducted a "referendum" in 1951, in which "99 per cent" supported an "independent" Nagaland.

**Post- Independence:**

- On March 22, 1952, the Naga Federal Government (NFG) and the Naga Federal Army (NFA) were formed. The Government of India sent in the Army to crush the insurgency and, in 1958, enacted Armed Forces (Special Power) Act (AFSPA).

**Agreement in this regard:**

- The NSCN (IM) entered into a ceasefire agreement with the Centre in 1997 and the two have been holding talks since then, while a conglomerate of seven different Naga national political groups (NNPGs) also got into separate talks with the Centre since 2017.
- The Centre signed a "framework agreement" with NSCN (IM) in
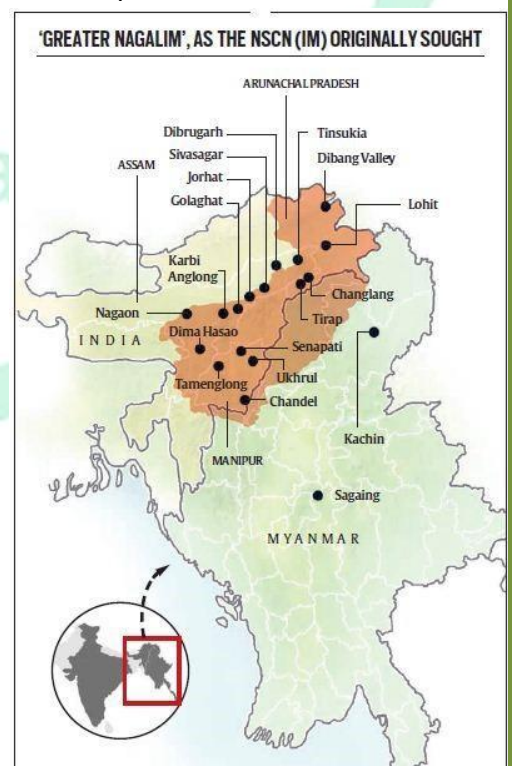
2015, and an "agreed position" with the NNPGs in 2017. However, the NSCN (IM)'s demand for a separate Naga flag and constitution has been a delaying factor in signing a final deal on the protracted Naga political issue.

**The 2015 'agreement':**
- After years of negotiations with successive governments, the NSCN(IM) had on August 3, 2015 signed a framework agreement with the BJP-led Centre.
- The "agreement" was based on the idea of "shared sovereignty" for the Naga's a community comprising more than 60 tribes (the exact number is unclear) spread across the Northeast and parts of neighbouring Myanmar.
- Shared sovereignty denotes sharing of administrative and legislative power between India and 'Nagalim'.
- Under this arrangement, the Naga Hoho, the apex body of all Naga tribes, would look after the welfare of all Naga-inhabited areas, irrespective of their integration with the proposed Nagalim.

## THE UNIQUE IDENTIFICATION DEVELOPMENT AUTHORITY OF INDIA (UIDAI)

- The Unique Identification Development Authority of India (UIDAI) chose to withdraw its advisory two days after it was issued, encouraging users to desist from distributing photocopies of their Aadhaar Card. The notification has been withdrawn to avoid any misinterpretation.

**What did the UIDAI advisory say?**
- Holders should utilise a masked Aadhaar card instead of the traditional photocopy.
- The document must not be downloaded from a cybercafe or a public computer, and if it is, it must be wiped from the system permanently.
- The first eight numbers of the twelve-digit ID are hidden behind 'XXXX' characters in **'Masked Aadhaar.'**

**What does the law say on usage of Aadhar and its safety?**
- The Aadhaar (Targeted Delivery of Financial and Other Subsidies Benefits and Services) Act, 2016 makes it clear that Aadhaar authentication is necessary for availing subsidies, benefits and services that are financed from the Consolidated Fund of India.
- The requesting entity would have to obtain the consent of the individual before collecting his/her identity and ensure that the information is only used for authentication purposes on the Central Identities Data Repository (CIDR).
- The Act makes it clear that confidentiality needs to be maintained and the authenticated information cannot be used for anything other than the specified purpose.
- Identity information or authentication records would only be liable to be produced pursuant to an order of the High Court or Supreme Court, or by someone of the Secretary rank or above in the interest of national security.

**About UIDAI:**
- The UIDAI is a statutory authority established on 12th July 2016.
- **Parent body:** Works under the jurisdiction of the Ministry of Electronics and Information Technology.
- Initially, the UIDAI was set up by the Government of India in January 2009, as an attached office under the aegis of the Planning Commission.
- **Mandate:** The UIDAI is mandated to assign a 12-digit unique identification (UID) number (Aadhaar) to all the residents of India.
- **Total:** As of 31st October 2021, UIDAI had issued 131.68 crore Aadhaar numbers.

## SURROGACY ACT, 2021

- Petitioners in the Delhi High Court questioned why marital status, age, or gender were the criteria for being allowed to commission or not commission surrogacy in India.

**Surrogacy Act, 2021**
- The Act sought to regulate the surrogacy in India
- The Act defines 'surrogacy' as a practice where a woman undertakes to give birth to a child for another couple and agrees to hand over the child to them after birth

**Why is there a need for a Surrogacy Act in India?**
- **India has emerged as a hub for infertility treatment**, attracting people from the world due to prevailing socio-economic inequities, underprivileged women found an option to 'rent their wombs' and thereby make money to take care of their expenses
- By 2012, **India had become the 'surrogacy capital' of the world** with surrogacy tourism valued at approximately $500 million annually.
- Thus, it has become more than imperative to regulate surrogacy in the country.
- **To curb unethical practices:** Lack of specific legislation had led to unregulated growth of Commercial Surrogacy services. Hence, to curb unethical practices related to issues of sex selection and exploitation of the surrogate, specific legislation was required.
- **To curb the exploitation of women**: Due to the absence of legal regulations and lack of implementation, surrogate mothers faced multiple challenges – there had been many cases of death related to surrogacy which neither commissioning parents nor the doctors were ready to take responsibility of.
- **Legal Issues:** Sometimes, Indian adoption laws or citizenship laws of some other countries also create problems. For example, Germany gives citizenship by mother; this creates issues in determining the nationality of child.
- In 2008, a Japanese couple began the process with a surrogate mother in Gujarat, but before the child was born they split and there were no takers for the child.
- In 2012, an Australian couple commissioned a surrogate mother, and arbitrarily chose one of the twins that were born.
- Ethical Issues: Surrogacy leads to commoditization of the child. Renting of the womb breaks the bond between a mother and the child, interferes with nature

**Key Provisions of the Act**
- The Act prohibits commercial surrogacy, but allows altruistic surrogacy.
- **Eligibility Criteria for Intending Couple:** Any couple that has 'proven infertility' are candidates. The 'intending couple' as the Act calls them, will be eligible if they have a 'certificate of essentiality' and a 'certificate of eligibility' issued by the appropriate authority.
- **Eligibility Criteria for Surrogate Mother:** Only a close relative of the couple can be a surrogate mother, one who is able to provide a medical fitness certificate. She should have been married, with a child of her own, and must be between 25 and 35 years, but can be a surrogate mother only once.
- **Appropriate Authority:** The central and state governments shall appoint one or more appropriate authorities. The functions of the appropriate authority include;
- Granting, suspending or cancelling registration of surrogacy clinics;
- Enforcing standards for surrogacy clinics;
- **National and State Surrogacy Boards:** The central and the state governments shall constitute the National Surrogacy Board (NSB) and the State Surrogacy Boards (SSB), respectively.
- **Parentage and Abortion of Surrogate Child:** An abortion of the surrogate child requires the written consent of the surrogate mother and the authorization of the appropriate authority. This authorisation must be compliant with the Medical Termination of Pregnancy Act, 1971.
- The surrogate mother will have an option to withdraw from surrogacy before the embryo is implanted in her womb.

**What are the controversies behind the Act?**

- **Exclusion:** The eligibility criteria for legally availing surrogacy excludes a chunk of society like unmarried females, LGBTQ+ persons, live-in couples, and single parents who wish to have surrogate child.
- **Paternalistic:** The altruistic model expects a woman to go through the physical and emotional tolls of surrogacy free of cost and only out of compassion.
- **Autonomy of Woman:** The banning of commercial surrogacy moves from the rights-based approach to a needs-based approach, thus removing the women's autonomy to make their own reproductive decisions and right to parenthood.
- **Limitations of Altruistic Surrogacy:** Having a relative as a surrogate mother may lead to emotional complications. Altruistic surrogacy also limits the option of the intending couple in choosing a surrogate mother as very limited relatives
- **Children with Disability:** The Act considers having children with physical and special needs as childless. It further encourages considering surrogacy if the couple has a child with a life-threatening disorder. This clause directly violates the right of the children with the disability, thus denying them treatment with dignity.
- As India is one of the major hubs of these practices, the Act is certainly a step in the right direction. More reforms are still needed recognize the rights of all stakeholders involved. The law needs to keep up with rapidly evolving demands of morality and societal changes.

## DRAFT AMENDMENTS TO IT RULES, 2021

- The Ministry of Electronics and Information Technology (MeitY) has published a fresh draft of amendments to the Information Technology Rules, 2021

**What are the proposed amendments to the IT Rules, 2021?**
- The draft proposes to create government-appointed appeal committees that will be empowered to review and possibly reverse content moderation decisions taken by social media companies.
- It means in case a user is not satisfied with the content moderation decision taken by a company's grievance officer, they can appeal that decision before the proposed government-appointed appeals committee.
- Every order passed by the Grievance Appellate Committee shall be complied with by the concerned intermediary
- Currently, the only recourse a user has against companies' content decisions is to approach the courts
- Responsibility on grievance officers appointed by social media companies – if a user complains about content which is "patently false", infringes copyright, and threatens the integrity of India, among other things, a grievance officer will have to expeditiously address it within 72 hours.
- Under current rules, grievance officers have 15 days to act on and dispose of users' complaints.

**What prompted the amendments?**
- The IT Rules, 2021 provide for a robust grievance redressal mechanism.
- However, there have been many instances that grievance officers of intermediaries either do not address the grievances satisfactorily and/or fairly.
- In such a scenario, the need for an appellate forum has been proposed to protect the rights and interests of users

**Concerns**
- The proposal, without any legislative basis, seeks to subject content on social media to the direct scrutiny of the government by permitting users to appeal decisions of social media platforms to a Grievance Appellate Committee constituted by MeitY

**IT Rules, 2021**
- These new rules deal with social media and over-the-top (OTT) platforms.

- These rules have been framed in exercise of powers under section 87 (2) of the Information Technology (IT) Act, 2000

**New Guidelines for Social Media/Intermediaries:**
**Categories of Social Media Intermediaries:**
- Based on the number of users, on the social media platform intermediaries have been divided in two groups:
- Social media intermediaries.
- Significant social media intermediaries.

**Features**
- In case, due diligence is not followed by the intermediary, safe harbor provisions will not apply to them.
- The safe harbor provisions have been defined under Section 79 of the IT Act, and protect social media intermediaries by giving them immunity from legal prosecution for any content posted on their platforms.

**Grievance Redressal Mechanism is Mandatory:**
- Intermediaries shall appoint a Grievance Officer to deal with complaints and share the name and contact details of such officers.
- The grievance Officer shall acknowledge the complaint within twenty-four hours and resolve it within fifteen days from its receipt.

**Ensuring Online Safety and Dignity of Users:**
- Intermediaries shall remove or disable access within 24 hours of receipt of complaints of contents that exposes the private areas of individuals, show such individuals in full or partial nudity or in sexual act or is in the nature of impersonation including morphed images etc.

**Additional Due Diligence for the Significant Social Media Intermediaries:**
- **Appointments:** Need to appoint Chief Compliance Officer, a Nodal Contact Person and a Resident Grievance Officer, all of whom should be resident in India.
- Rules for News Publishers and OTT Platforms and Digital Media:

**For OTT:**
- **Self-Classification of Content:** The OTT platforms, called as the publishers of online curated content in the rules, **would self-classify the content into five age based categories- U (Universal), U/A 7+, U/A 13+, U/A 16+, and A (Adult).**
- **Parental Lock:** Platforms would be required to implement parental locks for content classified as U/A 13+ or higher, and reliable age verification mechanisms for content classified as "A".
- **Display Rating:** Shall prominently display the classification rating specific to each content or program together with a content descriptor informing the user about the nature of the content

**For Publishers of News on Digital Media:**
- They would be required to observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act 1995 thereby providing a level playing field between the offline (Print, TV) and digital media.
- **Grievance Redressal Mechanism:** A three-level grievance redressal mechanism has been established under the rules with different levels of self-regulation.
- **Self-regulation by the Publisher:**
- Publisher shall appoint a Grievance Redressal Officer based in India who shall be responsible for the redressal of grievances received by it.
- The officer shall take decision on every grievance received by it within 15 days.
- **Self-Regulatory Body:**
- There may be one or more self-regulatory bodies of publishers.

- Such a body shall be headed by a retired judge of the SC, a High Court or independent eminent person and have not more than six members.
- Such a body will have to register with the Ministry of Information and Broadcasting.
- This body will oversee the adherence by the publisher to the Code of Ethics and address grievances that have not been resolved by the publisher within 15 days.

**Oversight Mechanism:**
- Ministry of Information and Broadcasting shall formulate an oversight mechanism.
- It shall publish a charter for self-regulating bodies, including Codes of Practices. It shall establish an Inter-Departmental Committee for hearing grievances.

## GOVERNOR'S ROLE IN UNIVERSITIES

- The West Bengal government's decision to make the Chief Minister the Chancellor of State-run universities, instead of the Governor has refocused the attention on the Governor's Role in Universities
- The area of conflict here are the appointment of Vice-Chancellors and the functioning of universities
- VCs were appointed by the Chancellor of the universities

**Similar Instances:**
**Tamil Nadu**
- Tamil Nadu recently passed Bills to empower the State government, instead of the Chancellor, to appoint VCs.
- It also passed a separate bill to establish a new university for alternative systems of medicine with the Chief Minister as its Chancellor.

**Kerala**
- In Kerala, the situation is different, with Governor asking the Chief Minister to take over the Chancellor's role in the light of alleged political interference in the functioning of universities.
- These developments underscore that the conferment of statutory roles to Governors may be a source of friction between elected regimes and Governors who are seen as agents of the Centre

**Governor's Role in**
**State Universities:**
- In most cases, the Governor of the state is the ex-officio chancellor of the universities in that state.
- While the Governor's powers and functions as the Chancellor are laid out in the statutes that govern the universities under a particular state government.
- Their role in appointing the Vice-Chancellors has often triggered disputes with the political executive.

**Central Universities:**
- Under the Central Universities Act, 2009, and other statutes, the President of India shall be the Visitor of a central university.
- Chancellors are appointed by the President in his capacity as Visitors.
- They are titular heads with their role limited to presiding over convocations in central universities.
- The VCs too are appointed by the Visitor from panels of names picked by search and selection committees formed by the Union government.
- The President, as Visitor, shall have the right to authorize inspections of academic and non-academic aspects of the universities and also to institute inquiries
- The original intent of making Governors hold the office of Chancellor and vesting some statutory powers on them was to insulate universities from political influence

**Sarkaria Commission**

- Justice R.S. Sarkaria Commission noted the use of discretion by some Governors in some university appointments had come in for criticism.
- It acknowledged the distinction between the Governor's constitutional role and the statutory role performed as a Chancellor, and also underlined that the Chancellor is not obliged to seek the government's advice.

**M.M. Punchhi Commission**
- Noted that Governor should not be "burdened with positions and powers, which may expose the office to controversies or public criticism, it advised against conferring statutory powers on the Governor, it advised against conferring statutory powers on the Governor.

## NATIONAL AIR SPORTS POLICY

- The Union Ministry of Civil Aviation (MoCA) announced the country's first National Air Sports Policy (NASP 2022).
- It has been launched to improve the state of aero sports in India, with a vision to make India a hub for air sports in the world by 2030.
- It aims to provide a safe, affordable, accessible, and sustainable air sports ecosystem in India.

**Highlights of the Policy**
- **Four-tier governance structure:** The air sports in India will be under a four-tier governance structure. This includes: 1) Air Sports Federation of India (ASFI) as the apex governing body, 2) National associations for individual air sports or a set of air sports, 3) Regional or state and union territory level units of the national air sports associations and 4) District-level air sports associations.
- **About ASFI:** The ASFI will be an autonomous body under the Ministry of Civil Aviation and will represent India at the Lausanne-headquartered Fédération Aéronaautique Internationale (FAI) and other global platforms related to air sports. It will be chaired by the Secretary, Ministry of Civil Aviation.
- **Functions:** It will provide governance over various aspects of air sports, including regulation, certification, competitions, awards and penalties, etc.
- **Rules and Functions of Each air sports association:** Lay down its safety standards for equipment, infrastructure, personnel and training, and specify the disciplinary actions to be taken in case of non-compliance. Inability to do so may lead to penal action by the ASFI.
- **Coverage:** It will cover 13 air sports activities like aerobatics, aero-modelling, amateur-built and experimental aircraft, ballooning, drones, gliding, hang gliding, paragliding, microlighting, paramotoring, skydiving, and vintage aircraft.

**Significance of the Policy:**
- Besides the revenue from air sports activities, multiplier benefits in terms of growth in travel, tourism, infrastructure and local employment, especially in hilly areas of the country, are much greater.
- Creating air sports hubs across the country will bring in air sports professionals and tourists from across the world.

**Need for:**
- The aerosports industry has expressed its displeasure that the government was not doing enough to encourage aero sports in the country despite the fact that there is a tremendous potential in the country keeping in view the diverse scenic locales.
- Aerosports create significant opportunities for growth of tourism, employment generation and interest in aviation activities.
- A growth-oriented NASP may help attract investments in latest aerosports technology, infrastructure and best practices.

## RAJYA SABHA ELECTION

- The Assemblies of 4 states will elect 16 MPs to Rajya Sabha
- Rajya Sabha, or the Council of States, has 245 seats
- No ruling party has ever touched the 100 mark in the last three-and-a-half decades
- Every Rajya Sabha seat counts as any Bill, barring Money Bills, needs the assent of the second chamber to become law.

**How often are Rajya Sabha elections held?**
- Rajya Sabha is a permanent House and cannot be dissolved.
- To ensure continuity, one-third of its members retire after every second year, under Article 83(1) of the Constitution, and "biennial elections" are held to fill these vacancies.
- The term of a member is six years.
- Out of the 245 members, 12 are nominated by the President and 233 are representatives of the States and Union territories of Delhi and Puducherry.

**Rajya Sabha polls: Who votes, and how?**
- Rajya Sabha MPs are elected by MLAs through an indirect election.
- Article 80(4) provides that members shall be elected by the elected members of state Assemblies through a system of proportional representation by means of a single transferable vote.
- The Fourth Schedule to the Constitution provides for allocation of Rajya Sabha seats to the states and Union Territories, on the basis of the population of each state.

**How are the votes counted?**
- The number of votes a candidate requires depends on the number of vacancies and the strength of the House.
- If there is only one vacancy, the required quota is calculated by taking the number of votes polled, divided it by 2, and adding 1.
- If there is more than one vacancy, the equation is based on an assigned value of 100 for every first-preference vote. The values of the votes credited to all candidates are total. The total is divided by 1 more than the number of vacancies, and 1 is added to this quotient.
- If for any seat, candidates fail to get the specified number, the second-preference votes will be taken into account, but with a lower value.

**Beyond passing Bills, why do Rajya Sabha numbers matter?**
**Rajya Sabha enjoys some special powers**
- It can pass resolution to enact laws on state subject
- Recommend creation of one or more All India Services common to the Union and the states
- Rajya Sabha has a role to play if the President proclamations national emergency, in the event of failure of constitutional machinery in a State, or in the case of financial emergency. Every such proclamation has to be approved by both Houses of Parliament within a stipulated period
- If a proclamation is issued at a time when Lok Sabha has been dissolved or the dissolution of Lok Sabha takes place within the period allowed for its approval, then the proclamation remains effective, if the resolution approving it is passed by Rajya Sabha within the period specified under Articles 352, 356 and 360 of the Constitution.

## PREVENTION OF MISLEADING ADVERTISEMENTS AND ENDORSEMENTS FOR MISLEADING ADVERTISEMENTS, 2022

- The guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022, had been notified by the Department of Consumer Affairs

- The guidelines provide for regulation of bait, free claims and children-targeted advertisements and prohibit surrogate advertisements.

**Provisions**
- An advertisement for junk foods, including chips, carbonated beverages and such other snacks and drinks shall not be advertised during a programme meant for children or on a channel meant exclusively for children
- It states an advertisement of any goods, product or service that addresses or targets children shall not –
- be such as to develop negative body image in children;
- Give any impression that such goods, products or services are better than the natural or traditional food that children may be consuming.
- It states any advertisement that offers promotional gifts to persuade children to buy goods, product or service without necessity or promotes illogical consumerism shall be discouraged.
- Also bars Indian citizens living abroad from endorsing such advertisements that have been barred for Indian professionals living in the country.
- Endorsers are required to disclose their material connection with the endorsed product or service, and specify duties of manufacturer, service provider, advertiser and advertising agency.
- No surrogate advertisement or indirect advertisement shall be made for goods or services whose advertising is otherwise prohibited or restricted by law, by circumventing such prohibition or restriction and portraying it to be an advertisement for other goods or services, the advertising of which is not prohibited or restricted by law.

## ELECTION COMMISSION

- The EC sent six key proposals to the Law Ministry
- Linking of Aadhaar with voter IDs
- Allowing four qualifying dates for eligible people to register as voters
- Ban on exit polls and opinion polls and said there should be some restriction on conducting and disseminating the results of opinion polls right from the day of the first notification of an election till the completion of the election in all its phases
- Also recommended limiting the seats from which a candidate can contest to just one
- The EC has also sought powers to deregister political parties
- EC has sought the modification of Form 24A to mandate the disclosure of all donations above Rs 2,000 instead of Rs 20,000

**Linking Aadhaar with voter IDs**
- In December 2021, Parliament passed the Election Laws (Amendment) Bill, 2021 enabling "the linking of electoral roll data with the Aadhaar ecosystem"

**Enrollment**
- As of now, for an election to be held in a particular year, only an individual who has attained the age of 18 years as on January 1 of that year or before is eligible to be enrolled in the voters' list.
- The ECI had told the government that the January 1 cut-off date set for the purpose deprives several youngsters from participating in the electoral exercise held in a particular year.

**What are exit & opinion polls?**
- An opinion poll is a pre-election survey to gather voters' views on a range of election-related issues.
- An exit poll is conducted immediately after people have voted, and assesses the support for political parties and their candidates.

**Why is the Election Commission (EC) against these polls?**
- Both kinds of polls can be controversial if the agency conducting them is perceived to be biased.

- The projections of these surveys can be influenced by the choice, wording and timing of the questions, and by the nature of the sample drawn.
- Political parties often allege that many opinion and exit polls are motivated and sponsored by their rivals, and could have a distorting effect on the choices voters make in a protracted election, rather than simply reflecting public sentiment or views.

**Number of Seats**
- The EC has sought an amendment of Section 33(7) of the Representation of People Act, 1951 to restrict the number of seats a candidate can contest from.
- The Act currently allows a person to contest a general election or a group of by-elections or biennial elections from up to two constituencies.

**Registration and De-registration**
- Section 29A of the Representation of the People Act, 1951 empowers the commission to register associations and bodies as political parties.
- However, there is no constitutional or statutory provision that gives power to the EC to deregister parties.
- Many political parties get registered, but never contest election. Such parties exist only on paper.
- The possibility of forming political parties with an eye on availing the benefit of income tax exemption also cannot be ruled out.
- It would only be logical that the commission which has the power to register political parties is also empowered to deregister in appropriate cases.

## NATIONAL E-VIDHAN APPLICATION (NeVA) PROJECT

- A delegation of MLAs from Gujarat recently visited the Uttar Pradesh Legislative Assembly, to learn about the novel E-Vidhan System for paperless proceedings that has been recently adopted by the UP state assembly.

**What is e-Vidhan?**
- It is a Mission Mode Project (MMP) under the Digital India Programme.
- The Ministry of Parliamentary Affairs (MoPA) is the 'Nodal Ministry' for its implementation in all the 31 States/UTs with Legislatures.
- The funding for e-Vidhan is provided by the MoPA and technical support by the Ministry of Electronics and Information Technology (MietY).
- The funding of NeVA is through Central Sponsored Scheme.
- 60:40; and 90:10 for North East & hilly States and 100% for UTs.

**Aim of the project:** To bring all the legislatures of the country together, in one platform thereby creating a massive data depository without having the complexity of multiple applications.

**Key features:**
- Paperless Assembly or e-Assembly is a concept involving electronic means to facilitate the work of Assembly.
- It enables automation of entire law making process, tracking of decisions and documents, sharing of information.
- Through the cloud technology (Meghraj), data deployed can be accessed anywhere at any time.
- Himachal Pradesh is already the first Digital Legislature of the country.

**State Government's Role in the implementation of e-Vidhan:**
- The State Government will appoint a Secretary level officer to be designated as the nodal officer/representative for e-Vidhan implementation in the State Legislature(s).
- State Government will bear the funds required for running of e-Vidhan MMP after 3 years.

- The State Government will ensure capacity building for the effective implementation of e-Vidhan MMP module.
- The State Government/Legislature will undertake maintenance and replacement of ICT equipment after 3 years.

## SECTION 295A OF IPC

- The debate surrounding the comments by ruling party spokespersons have put the spotlight on the law that deals with criticism of or insult to religion.
- Section 295A of IPC defines the contours of free speech and its limitations with respect to offences relating to religion.
- India does not have a formal legal framework for dealing with hate speech.
- However, a cluster of provisions, loosely termed hate speech laws, are invoked.

**Section 295A & others**
- Section 295A defines and prescribes a punishment for deliberate and malicious acts, intended to outrage religious feelings of any class by insulting its religion or religious beliefs.
- It includes offences to penalise damage or defilement of a place of worship with intent to insult the religion (Section 295); trespassing in a place of sepulture (Section 297); uttering, words, etc, with deliberate intent to wound the religious feelings of any person (Section 298); and disturbing a religious assembly (Section 296).
- The state often invokes Section 295A along with Section 153A of the Indian Penal Code, which penalises promoting enmity between different groups on grounds of religion, race, place of birth, residence, language, etc, and doing acts prejudicial to maintenance of harmony and Section 505 of the IPC that punishes statements conducing to public mischief.

**Supreme Court Judgment**
- In 1957, the constitutionality of Section 295A was challenged in Ramji Lal Modi v State of Uttar Pradesh.
- The Supreme Court upheld the law on the grounds that it was brought in to preserve "public order".
- Public order is an exemption to the fundamental right to freedom of speech and expression and the right to religion recognised by the Constitution.
- In 1973, in Ramlal Puri v State of Madhya Pradesh, the Supreme Court said the test to be applied is whether the speech in question offends the "ordinary man of common sense" and not the "hypersensitive man"
- In Baragur Ramachandrappa v State of Karnataka, a 2007 decision of the Supreme Court, "a pragmatic approach" was invoked in interpreting Section 295A.

## DEATH PENALTY SENTENCING

- Recently, the Supreme Court, in Manoj & others v. State of MP, embarked on a significant attempt to reform the administration of the death penalty.

**Background**
- There has long been a judicial crisis in death penalty sentencing on account of unprincipled sentencing, arbitrariness and worrying levels of subjectivity.
- The crisis has been acknowledged by the Supreme Court, the Law Commission of India, research scholars and civil society groups.
- At the heart of this concern is the fact that death penalty sentencing has been, by and large, crime-centric.

**Bachan Singh (1980)**
- The ruling of the five-judge bench in this case laid down a framework to be followed by judges who have to choose between life imprisonment and death sentence.

- This framework made it binding for the sentencing judges to take into account factors relating to both the crime and accused and assign them appropriate weight.
- Judges couldn't decide to impose the death penalty only on the basis of the crime.
- The background of the accused, the personal circumstances, mental health and age were considerations a sentencing judge had to account for.
- Judges were required to weigh mitigating and aggravating factors to ascertain if a case was fit for the death sentence and also determine if the option of life imprisonment was unquestionably foreclosed.
- There is confusion across all levels of the judiciary on the requirements of this framework and its implementation.
- An important reason for the breakdown is that factors relating to the crime — the nature of the crime and its brutality — are often dominant considerations, and there is barely any consideration of mitigating factors
- A vast majority of India's death row prisoners are extremely poor and often do not receive competent legal representation.
- Thus in the last four decades Bachan Singh framework has not been implemented in letter and spirit

**The significance Manoj & others v. State of MP**
- It takes the lax implemetation of Bachan Singh judgment problem head-on.
- The judgment is clear that certain procedural thresholds must be met for sentencing to be fair and explicitly rejects the idea that death sentences can be determined solely on crime-based considerations

**Key Points**
- Commitment to recognising reformation as integral to the Indian criminal justice system, especially death penalty sentencing
- It asks the state and sentencing judges to establish that there is no probability of reformation of the accused.
- It recognises that aspects of the accused's life, both pre-offence and post-offence in prison, are relevant.
- As practical steps in this process, the judgment asks courts to call for reports from the probation officer as well as prison and independent mental health experts.
- The state too must present material that speaks to a wide range of factors. The right of the accused to present mitigating factors and rebut the state, if necessary, is also recognised.

**Challenges**
- The attempts to bring about procedural coherence and integrity will face significant challenges in the trial courts and the high courts it is far from certain that these reforms will be meaningfully implemented in those forums.
- The Supreme Court will have to provide basis for consideration of the above mentioned factors, in the absence of such foundations, death penalty sentencing will continue to be unprincipled and sentencing judges are not going to understand the need for this wide range of sentencing information.
- All our actions are a result of a complex web of biological, psychological, and social factors and that understanding has a very significant bearing on discussions on criminality and punishment including death penalty.

## DRAFT NATIONAL DATA GOVERNANCE FRAMEWORK POLICY

- The Minister of State, Electronics & Information Technology and Skill Development & Entrepreneurship highlighted the rapid digitalization and the subsequent rise in data volumes necessitating a framework for harnessing the potential of this data.
- Government's vision is to build a modern framework for Data Governance that will be a kinetic enabler of India's Digital Economy.

**Draft National Data Governance Framework Policy:**

- **Indian Datasets programme:** It calls for the creation of an India Datasets programme, which will consist of non-personal and anonymised datasets from Central government entities that have collected data from Indian citizens or those in India. Private companies will be "encouraged" to share such data.
- **The non-personal** data housed within this programme would be accessible to start ups and Indian researchers(Non-personal data is any set of data which does not contain personally identifiable information).
- **India Data Management Office (IDMO):** The draft also calls for creation of an India Data Management Office (IDMO), which will be in charge of designing and managing the India Datasets platform.
- The IDMO will prescribe rules and standards, including anonymization standards for all entities (government and private).
- For purposes of safety and trust, any non-personal data sharing by any entity can be only via platforms designated and authorized by IDMO.
- **No Selling of Data:** The most significant change in this new draft is the omission of the most contentious provision in the old draft — selling data collected at the Central level in the open market.

**Suggestions included:**
- Consultative process informing the functioning of the IDMO
- Provisions for harnessing the future potential of integrated datasets and clarifications around the nature of engagement with private players.
- Furthermore, information and clarity on the operations of the India Data Management Office
- Access to annotated datasets for AI innovation
- Active collaboration with private sector and social impact firms to build data capacity

## INTER-STATE COUNCIL

- Tamil Nadu Chief Minister wrote to Prime Minister of India asking that at least three meetings of the Inter-State Council should be held every year to strengthen the spirit of cooperative federalism

**Inter-State Council**
**Constitutional Provisions**
- According to Article 263 of the Indian Constitution, an Inter-State Council (ISC) may be constituted "if it seems to the President at any time that the public interests would be served by the creation of a Council".
- It was set up in 1990 through a presidential ordinance for the first time as per the recommendations of the Sarkaria Commission under the Ministry of Home affairs.

**Inter-State Council Composition**
- Prime Minister acts as the chairman of the council.
- Union Ministers of Cabinet rank in the Union
- Council of Ministers nominated by the Prime Minister.
- Chief Ministers of all states
- Chief Ministers of Union Territories having a Legislative Assembly
- Administrators of UTs not having a Legislative Assembly
- Governors of the states being administered under President's rule

**Functions of Inter-State Council**
- Inter-State Council is a recommendatory body with duties to investigate and discuss the subjects of common interest between the Union and State(s) or among the States, making recommendations particularly for better coordination of policy and action on these subjects and deliberating upon such other matters of general interest to the States which may be referred to it by its Chairman
- Making suggestions on any such subject, for the better coordination of policy and action with respect to that subject

**Issues**
- The Council has met only once in the last six years and there has been no meeting since July 2016.
- Since its constitution in 1990, the body has met only 11 times, although its procedure states it should meet at least three times every year.
- In 2016, the meeting included consideration of the Punchhi Commission's recommendations on Centre-State Relations that were published in 2010

**Current Stats:**
- The Council was reconstituted recently by the Government of India
- Headed by the PM, the Council will comprise six Union ministers, besides the Chief Ministers of the 28 states and UTs with a legislature, and administrators of UTs without a legislature.
- It will also have 10 Union ministers as permanent invitees.
- The government has also reconstituted the standing committee of the Council, with Union Home Minister as it chairman.

## A NEW GLOBAL STANDARD FOR AI ETHICS

- UNESCO's global agreement on the ethics of AI can guide governments and companies alike. Artificial intelligence (AI) is more present in our lives than ever.

**Issues in AI**
- The data used to feed into AI often aren't representative of the diversity of our societies, producing outcomes that can be said to be biased or discriminatory.
- For instance, while India and China together constitute approximately a third of the world's population, Google Brain estimated that they form just 3% of images used in Image Net, a widely used dataset.
- There are problems emerging in facial recognition technologies, which are used to access our phones, bank accounts and apartments, and are increasingly employed by law-enforcement authorities, in identifying women and darker-skinned people.
- For three such programs released by major technology companies, the error rate was 1% for light-skinned men, but 19% for dark-skinned men, and up to 35% for dark-skinned women.
- These issues are of particular importance to India, which is one of the world's largest markets for AI-related technologies, valued at over $7.8 billion in 2021.
- To ensure that the full potential of these technologies is reached, the right incentives for ethical AI governance need to be established in national and sub-national policy.

**A common rulebook**
- Until recently, there was no common global strategy to take forward this importance agenda.
- This changed when 193 countries reached a groundbreaking agreement at UNESCO on how AI should be designed and used by governments and tech companies.
- It aims to fundamentally shift the balance of power between people, and the businesses and governments developing AI
- Countries which are members of UNESCO have agreed to implement this recommendation by enacting actions to regulate the entire AI system life cycle, ranging from research, design and development to deployment and use.

**Recommendations**
- It underscores the importance of the proper management of data, privacy and access to information.
- It also calls on member states to ensure that appropriate safeguards schemes are devised for the processing of sensitive data and effective accountability, and redress mechanisms are provided in the event of harm.
- Recommendation taking a strong stance that
- AI systems should not be used for social scoring or mass surveillance purposes;

- that particular attention must be paid to the psychological and cognitive impact that these systems can have on children and young people;
- And that member states should invest in and promote not only digital, media and information literacy skills, but also socio-emotional and AI ethics skills to strengthen critical thinking and competencies in the digital era.

**Significance**
- The new agreement is broad and ambitious.
- It is a recognition that AI-related technologies cannot continue to operate without a common rulebook.
- Governments will themselves use the recommendation as a framework to establish and update legislation, regulatory frameworks, and policy to embed humanistic principles in enforceable accountability mechanisms.

## REFORM IN INDIA'S HIGHER JUDICIARY

- Problems in India's Higher Judiciary

**Retirement age of judges**
- Disparity between the retirement ages of High Court and Supreme Court judges; High Court judges now retire at 62 and Supreme Court judges at 65.
- Doing away with this disparity and increasing the age of retirement for both High Court and Supreme Court judges will reduce the burden of pending cases in higher judiciary

**Lack of a culture of service**
- Most of Supreme Court judges after their tenure focus on arbitrations and amass considerable fortunes with high fees and multiple sittings.
- A minority of judges devote themselves to public service
- Another lot are appointed to various constitutional posts and tribunals and commissions.
- It would be worthwhile reform to create a cadre of public service for retired judges and from this pool make appointments to the constitutional and statutory posts and special assignments.

**Selection of Chief Justice of India**
- It is generally assumed that the senior most judge of the Supreme Court should be the Chief Justice of India is not mentioned in the constitution
- Article 124 merely states that the President will appoint every judge of the Supreme Court, and this includes the Chief Justice
- Public purpose is better served by ensuring that the judges of the Supreme Court during their entire tenure are not swayed by their expectations or aspirations to the higher office of CJI.

**So who should be the Chief Justice of India (CJI)?**
- CJI should be the best reputed Chief Justice of a High Court who has proved himself worthy both in judicial office as well as administrative leadership and has those qualities of heart and head which mark a good leader.
- The appointee should have a clear three year term — not the truncated weeks and months that some CJIs now get.
- He/she should work in a strict manner especially in regard to the roster of allotment of cases, especially the sensitive ones, and appointments to the Supreme Court and High Courts and other important matters of judicial and administrative importance.
- The above mentioned reforms will increase the productivity of the higher judiciary and make it accountable to the people of India.

## FERTILISER BILL

- No country has as much area under farming as India. But there's one resource in which the country is short and heavily import-dependent — mineral fertilizers.
- In 2021-22, India imported 10.16 million tonnes (mt) of urea, 5.86 mt of di-ammonium phosphate (DAP) and 2.91 mt of muriate of potash (MOP). In value terms, imports of all fertilisers touched an all-time high of $12.77 billion last fiscal.
- In 2021-22, India also produced 25.07 mt of urea, 4.22 mt of DAP, 8.33 mt of complex fertilisers (containing nitrogen-N, phosphorus-P, potassium-K and sulphur-S in different ratios) and 5.33 mt of single super phosphate (SSP). The intermediates or raw materials for the manufacture of these fertilisers were substantially imported.

**The total value of fertiliser imports by India, inclusive of inputs used in domestic production**
- A whopping $24.3 billion in 2021-22.
- There are two costs here.
- The first is foreign exchange outgo
- The second cost is fiscal: Fertilisers are not only imported, but Indian farmers also pay below what it costs to import or manufacture using imported inputs. The difference is paid as a subsidy by the government.
- That bill was Rs 1,53,658.11 crore or $20.6 billion in 2021-22 and projected at Rs 2,50,000 crore ($32 billion) this fiscal.
- Both costs are unsustainably high to bear for a mineral resource-poor country.

**The Way Forward**
- There is a need to cap or even reduce consumption of high-analysis fertilisers – particularly urea (46 per cent N content), DAP (18 per cent N and 46 per cent P) and MOP (60 per cent).
- One way to do this is by incorporating urea and nitrification inhibition compounds in urea.
- These are basically chemicals that slow down the rate at which urea is hydrolysed (resulting in the production of ammonia gas and its release into the atmosphere) and nitrified (leading to below-ground loss of nitrogen through leaching).
- By reducing ammonia volatilisation and nitrate leaching, more nitrogen is made available to the crop, enabling farmers to harvest the same, if not better, yields with a lesser number of urea bags.
- Together with products such as liquid "nano urea" – their ultra-small particle size is conducive to easier absorption by the plants than with bulk fertilisers, translating into higher nitrogen use efficiency – it is possible to achieve a 20 per cent or more drop in urea consumption from the present 34-35 mt levels.
- A second route is by promoting sales of SSP (containing 16 per cent P and 11 per cent S) and complex fertilisers such as "20:20:0:13" and "10:26:26".
- DAP use should be restricted mainly to paddy and wheat; other crops don't require fertilisers with high P content.
- India can also import more rock phosphate to make SSP directly or it can be converted into "weak" phosphoric acid.
- **India needs to wean its farmers away from all high-analysis fertilisers:** That movement requires a concerted push, alongside popularising high nutrient use-efficient water-soluble fertilisers (potassium nitrate, potassium sulphate, calcium nitrate, etc) and exploiting alternative indigenous sources (for example, potash derived from molasses-based distillery spent-wash and from seaweed extract).
- **Knowledge Building of Farmers:** No plan to cap/reduce consumption of high-analysis fertilisers can succeed without farmers knowing what is a suitable substitute for DAP and which NPK complex or organic manure can bring down their urea application. It calls for agriculture departments and universities not just revisiting their existing crop-wise nutrient application recommendations, but disseminating this information to farmers on a campaign mode.

## ACCESS TO ABORTION IS A HUMAN RIGHT

- The United States Supreme Court on June 24 overturned by a 6-3 majority 'Roe v. Wade', the court's landmark 1973 judgment that made abortion a constitutional right.

- The decision will transform life for women in America. Near-total bans on abortion will come into effect in about half of the country's states.
- Availability of clinics, insurance payouts, are crucial issues that form part of the struggle of many women even with the backing of 'Roe'. With this legal backing gone, access could become even harder.
- Laws against abortion put many women in US at risk of back-alley abortions outside institutional care. For women in the relatively liberal Democratic states, and for women elsewhere who have the means to travel to a clinic, abortion may still be accessible. However, poor women, especially in many Republican states, may find traveling to other states for in-clinic abortions to be an impossible challenge.
- **Foetal viability** was around 28 weeks (7 months) at the time of the 'Roe' judgment nearly 50 years ago; experts now agree that advances in medicine have brought the threshold down to 23 or 24 weeks (6 months or a little less), and newer studies show this could be further pegged at 22 weeks. An average pregnancy lasts about 40 weeks.
- Foetal viability is often seen as the point at which the rights of the woman can be separated from the rights of the unborn foetus. The length of a pregnancy is commonly calculated from the start of a person's most recent menstrual period. Since many people identify pregnancy only after the sixth week, pre-viability timelines leave women with very little time and opportunity to make a decision to abort.

## Abortion – Human Rights
- Access to safe and legal abortion is a matter of human rights, and its availability is the best way to protect autonomy and reduce maternal mortality and morbidity.
- Authoritative interpretations of international human rights law establish that denying women, girls, and other pregnant people access to abortion is a form of discrimination and jeopardizes a range of human rights.
- Where safe and legal abortion services are unreasonably restricted or not fully available, many other internationally protected human rights may be at risk, including rights to non-discrimination and equality; to life, health, and information; to freedom from torture and cruel, inhuman and degrading treatment; to privacy and bodily autonomy and integrity; to decide the number and spacing of children; to liberty; to enjoy the benefits of scientific progress; and to freedom of conscience and religion.
- According to the World Health Organization (WHO), complications from pregnancy and childbirth are the leading cause of death for girls and young women ages 15 to 19, and children ages 10 to 14 have a higher risk of health complications and death from pregnancy than adults. WHO has also found that the removal of restrictions on abortion results in the reduction of maternal mortality.

## Key Insight: Do restrictive abortion policies reduce the rate of abortions?
- Abortion restrictions do not prevent abortions. Research has shown that when abortion is banned or restricted, the number of abortions does not decrease. Abortions just move underground.
- Restrictive abortion policies push pregnant people seeking abortions, especially those living in poverty or rural areas, out of the healthcare system and into unsafe, unregulated settings.
- WHO has also stated that lack of access to safe, affordable, timely, and respectful abortion care, as well as the promotion of stigma associated with abortion, poses risks to abortion seekers' physical and mental well-being throughout their lives.

## Abortion Laws in India
- Abortion is legal in India via Medical Termination of Pregnancy (Amendment) Bill, 2020.
- India's Medical Termination of Pregnancy Act, 1971 allows abortion until 20 weeks of pregnancy. Through an amendment in 2021, the ceiling for abortions was raised to 24 weeks, but only for special categories of pregnant women such as rape or incest survivors, that too, with the approval of two registered doctors.

## Eligibility
- An unmarried woman can avail (In case the woman is under 18, the guardian's signature would be needed + a case should be registered under the POCSO (Protection of Children from Sexual Offences) Act)
- If the pregnancy is the result of incest or rape.

- Major deformations in the fetus
- If it is a result of failed contraception.
- If the continuation of the pregnancy can cause grave injury to the physical or mental health of the mother.
- In case of a miscarriage i.e. if the baby is dead inside

**Procedural Details**
- The procedure can be carried out only by a registered medical practitioner.
- The abortion should take place at a hospital or at a clinic that is fully equipped to do so.

**PCPNDT (Pre-Conception and Pre-Natal Diagnostic Techniques) Act**
- Enacted to prevent misuse of the MTP Act and so that abortions aren't carried out at the whims and fancies of a woman or a couple.
- While consent of the spouse isn't required for a woman to undergo an abortion, a spouse cannot force a woman to undergo an abortion. In such a case, a case for domestic violence can be registered and under IPC 312/313, a case for causing miscarriage can be booked against the husband.
- A woman, whether a minor or not, cannot walk into a pharmacy to avail a pill for termination of pregnancy unless she has a prescription from a trained medical practitioner.

## ABORTION LAW IN INDIA

- Amid the overturning of the landmark **Roe v. Wade judgement in the U.S**, the laws on abortions in India have come to focus.
- In order to reduce maternal mortality owing to unsafe abortions, the Medical Termination of Pregnancy (MTP) Act was brought into force in 1971.
- This law is an exception to the Indian Penal Code (IPC) provisions of 312 and 313 and sets out the rules of how and when a medical abortion can be carried out.
- The latest amendment to the MTP Act was made in 2021

**What is the MTP (Amendment) Act, 2021?**
- The 2021 Act increased the upper limit of the gestation period to which a woman can seek a medical abortion to 24 weeks from 20 weeks permitted in the 1971 Act
- Under the 2021 Act, medical termination of pregnancy is permitted if it is backed by medical opinion and is being sought for at least one of the following reasons —
- If the continuation of pregnancy would involve a risk to the life of the pregnant woman
- If its continuation would result in grave injury to the woman's physical or mental health
- In the case of a substantial risk that if the child was born, it would suffer from serious physical or mental abnormality
- The pregnancy can be terminated upto 24 weeks of gestational age after the opinion of two registered medical practitioners under these conditions —
- If the woman is either a survivor of sexual assault or rape or incest
- If she is a minor
- If her marital status has changed during the ongoing pregnancy
- If she has major physical disabilities or is mentally ill
- On the grounds of foetal malformation incompatible with life or if the child is born, it would be seriously handicapped
- If the woman is in humanitarian settings or disaster, or emergency situations as declared by the government
- Besides, if the pregnancy has to be terminated beyond the 24-week gestational age, it can only be done on the grounds of foetal abnormalities if a four-member Medical Board, as set up in each State under the Act, gives permission to do so.

- The law, notwithstanding any of the above conditions, also provides that where it is immediately necessary to save the life of the pregnant woman, abortion can be carried out at any time by a single registered medical practitioner.
- Unmarried women can also access abortion under the above-mentioned conditions, because it does not mention the requirement of spousal consent.
- If the woman is a minor, however, the consent of a guardian is required.
- Section 5A of the Act contains provisions for the protection of the privacy of a woman undergoing an abortion.

**Judicial Verdicts**

- Despite the fact that existing laws do not permit unconditional abortion in the country, in the landmark **2017 Right to Privacy judgement in the Justice K.S. Puttaswamy v. Union of India** and others, the Supreme Court had held that the decision by a pregnant person on whether to continue a pregnancy or not is part of such a person's right to privacy as well and, therefore, the right to life and personal liberty under Article 21 of the Constitution.

**What are the criticisms against the abortion law?**
**Demand-Supply mismatch**

- According to a 2018 study in the Lancet, 6 million abortions were accessed every year in India as of 2015.
- The MTP Act requires abortion to be performed only by doctors with specialisation in gynaecology or obstetrics
- According to a study there is a 70% shortage of obstetrician-gynaecologists in rural India.
- As the law does not permit abortion at will, it pushes women to access illicit abortions under unsafe conditions.
- Statistics put the annual number of unsafe and illegal abortions performed in India at 8,00,000, many of them resulting in maternal mortality.

## ANTI-DEFECTION LAW

- The crisis in Maharashtra shows the anti-defection law to be ineffective, even counterproductive.
- The political crisis in Maharashtra has brought focus back on the anti-defection law.
- The law has failed to shore up the stability of elected governments.
- Not only have many governments fallen due to defections in recent times, but the defectors have not suffered any cautionary consequences.

**Issues**

- The Speaker has delayed deciding on the disqualification.
- Due to Anti-Defection law, the chain of accountability has been broken by making legislators accountable primarily to the political party.
- Through 91st CAA, the anti-defection law created an exception for anti-defection rulings. The amendment does not recognise a 'split' in a legislature party and instead recognises a 'merger'
- The defection leads to instability in the government and affects the administration.
- Defection also promotes horse-trading of legislators which clearly go against the mandate of a democratic setup
- The voters don't seem to care about punishing the defectors either – 11 out of the 14 defectors who stood for re-election in the 2019 Karnataka bypolls won.

**What needs to be done?**
**Reforms at Party level**

- Political parties must address organizational and ideological infirmities which have made them susceptible to mass defections in the first place.

- Political parties need ideological clarity and the ability to attract individuals with a sense of purpose and not love for power alone
- Internal party processes must be geared to identify and promote members into leadership positions
- Create intra-party forums: provide some institutional leverage to express intra-party dissidence.
- The Election Commission has suggested it should be the deciding authority in defection cases
- The Supreme Court has suggested that Parliament should set up an independent tribunal headed by a retired judge of the higher judiciary to decide defection cases swiftly and impartially.
- Some commentators have said the law has failed and recommended its removal – as the law has undermined not just the very principle of representation but has also contributed to polarization in our country by making it impossible to construct a majority on any issue outside of party affiliation.

## Anti-Defection Law
- The Tenth Schedule – popularly known as the Anti-Defection Act – was included in the Constitution via the 52nd Amendment Act, 1985 and sets the provisions for disqualification of elected members on the grounds of defection to another political party.
- It was a response to the toppling of multiple state governments by party-hopping MLAs after the general elections of 1967.
- However, it allows a group of MP/MLAs to join another political party without inviting the penalty for defection. And it does not penalise political parties for encouraging or accepting defecting legislators.
- As per the 1985 Act, a 'defection' by one-third of the elected members of a political party was considered a 'merger'.
- But the 91st Constitutional Amendment Act, 2003, changed this and now at least two-thirds of the members of a party have to be in favour of a "merger" for it to have validity in the eyes of the law.
- The decision on questions as to disqualification on ground of defection are referred to the Chairman or the Speaker of such House, which is subject to 'Judicial review'.
- However, the law does not provide a time-frame within which the presiding officer has to decide a defection case.

## Grounds of Disqualification:
- If an elected member voluntarily gives up his membership of a political party.
- If he votes or abstains from voting in such House contrary to any direction issued by his political party or anyone authorised to do so, without obtaining prior permission.
- As a pre-condition for his disqualification, his abstention from voting should not be condoned by his party or the authorised person within 15 days of such incident.
- If any independently elected member joins any political party.
- If any nominated member joins any political party after the expiry of six months.

- While granting interim relief to rebel MLAs of the Shiv Sena, the Supreme Court made an unusual judicial intervention that raises questions on the powers of the Speaker under the Tenth Schedule of the Constitution.
- The Speaker's powers under the Tenth Schedule have been previously upheld by the Supreme Court itself; the court has allowed judicial review only once the Speaker has made a decision, and has ruled out interference with the process.

## What does the interim order say?
- The interim order grants more time to the rebel MLAs to reply to the disqualification notice served on them. It seeks affidavits from them, and also a counter-affidavit from the Deputy Speaker on his removal as demanded by the rebels.
- In granting more time, the Supreme Court has essentially delayed the disqualification proceedings, which would have a direct impact on a trust vote in the Assembly

## What does the Tenth Schedule say?

- The Tenth Schedule gives the Speaker of the House the power to disqualify legislators who 'defect' from the party.
- In the landmark case **Kihoto Hollohan versus Zachillhu in 1992**, the Supreme Court upheld the power vested in the Speaker and said that only the final order of the Speaker **will be subject to judicial review.**
- Courts have **refrained from interfering with the process itself**.
- However, a **2016 ruling of a Constitution Bench of the Supreme Court in Nabam Rebia ruling** has shifted the balance on the powers of the Speaker.

**What was the Nabam Rebia ruling?**
- The Supreme Court held that it is "constitutionally impermissible" for a speaker to proceed with disqualification proceedings, if a no-confidence motion against him is pending.
- If a Speaker truly and rightfully enjoys support of the majority of the MLAs, there would be no difficulty whatsoever, to demonstrate the confidence which the members of the State Legislature, repose in him.
- This ruling gave a window to defecting legislators to stall or circumvent the Tenth Schedule by seeking removal of the Speaker when disqualification proceedings are anticipated — effectively tying the hands of the Speaker.

**Have legislators used this legal route?**
- Yes, since 2016, this legal route has a been a familiar playbook for legislators cutting across states and political affiliations.

**How can the Speaker be removed?**
- Under Article 179 of the Constitution, a Speaker can be removed by a resolution of the Assembly passed by a majority of "all the then members of the Assembly".
- The process begins with notice of at least 14 days.
- In the 2016 Nabam Rebia ruling, the Supreme Court interpreted Article 179, specifically the term "all the then members of the Assembly", to mean the composition of the house at the date/time of giving the notice for the removal of the Speaker.
- This interpretation would mean that the composition of the Assembly cannot be changed from the date of issuing of a notice of the removal of the Speaker, and therefore the Speaker cannot make any decisions under the Tenth Schedule to change the composition of the House until the question of his removal is settled.
- The Supreme Court's reasoning in barring the Speaker from acting under the Tenth Schedule when a notice for his own removal is pending, is to ensure that the Speaker who disqualifies legislators must enjoy the confidence of the Assembly.

## APPOINTMENT OF ATTORNEY-GENERAL

- Attorney-General (A-G) K.K. Venugopal has been reappointed the country's top law officer for a period of three months.
- Venugopal was appointed the 15th AG of India in 2017. He succeeded Mukul Rohatgi who was AG from 2014-2017.

**Attorney General Of India**
- **Article 76** of the Constitution provides for the office of AG of India
- AG is the **top legal officer in the country** & **part of Union Executive**
- AG is assisted by 2 Solicitor Generals & 4 Additional Solicitor Generals.
- AG is **not considered as a government servant**

**Eligibility**
- S/He must be a person who is qualified to be appointed a judge of the Supreme Court .i.e.

- he must be a citizen of India and
- he must have been a judge of some high court for five years or an advocate of some high court for ten years or an eminent jurist

**Tenure: not fixed** by the Constitution
- The remuneration of the AG is not fixed by the Constitution. He receives such remuneration as the president may determine

**Removal:**
- The Constitution does not contain the procedure and grounds for his removal. He holds office during the pleasure of the president.
- He may also quit his office by submitting his resignation to the president.

**Functions**
- Advise Government on legal matters.
- Perform legal duties assigned by President.
- Appear on behalf of Government in all cases in SC or HC.
- Represent Government under Article 143.
- Discharge functions conferred by Constitution or law.

**Rights**
- Right to speak & take part in proceedings of both Houses of Parliament/joint sitting/any committee of Parliament of which he/she may be named a member.
- Enjoys privileges & immunities of a Member of Parliament.
- S/he is not debarred from private legal practice.

**Limitations**
- No Right to Vote in House proceedings/committees.
- Should not advise against or hold a brief against Government.
- Should not defend accused persons in criminal prosecutions without the permission of the Government of India.
- Should not accept appointment as a director in any company or corporation without the permission of the Government of India.

# ECONOMY

- The National Asset Reconstruction Company Ltd. (NARCL), set up to take over large bad loans of more than ₹500 crore from banks, will pick up the first set of such non-performing assets (NPAs) in July.

**What is NARCL?**
- Setting up of NARCL, the proposed bad bank for taking over stressed assets of lenders, was announced in the Budget for 2021-22.
- The plan is to create a bad bank to house bad loans of ₹500 crore and above, in a structure that will contain an asset reconstruction company (ARC) and an asset management company (AMC) to manage and recover dud assets.
- The new entity is being created in collaboration with both public and private sector banks.
- Majority-owned by state-owned banks, the NARCL will be assisted by the India Debt Resolution Company Ltd (IDRCL), in turn majority-owned by private banks, in resolution process in the form of a Principal-Agent basis.

**How is NARCL different from existing ARCs? How can it operate differently?**
1. The proposed bad bank will have a public sector character since the idea is mooted by the government and majority ownership is likely to rest with state-owned banks.
2. At present, ARCs typically seek a steep discount on loans. With the proposed bad bank being set up, the valuation issue is unlikely to come up since this is a government initiative.
3. The government-backed ARC will have deep pockets to buy out big accounts and thus free up banks from carrying these accounts on their books.

**What is an Asset Reconstruction Company (ARC)?**
- It is a specialized financial institution that buys the Non-Performing Assets (NPAs) from banks and financial institutions so that they can clean up their balance sheets. This helps banks to concentrate on normal banking activities.
- The asset reconstruction companies or ARCs are registered under the RBI.

**Legal Basis:**
- The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002 provides the legal basis for the setting up of ARCs in India.

**Capital Needs for ARCs:**
- As per amendment made in the SARFAESI Act in 2016, an ARC should have a minimum net owned fund of Rs. 2 crores. The RBI raised this amount to Rs. 100 crores in 2017.
- The ARCs also have to maintain a capital adequacy ratio of 15% of its risk weighted assets.

**Need**
- The total stress in the banking system would be in excess of Rs 15 lakh crore. The banks burdened with stressed assets and limited capital will find it difficult to manage the NPAs. There is also limited capital that the government can provide. This is where the bad bank model would step in and help both the government and banks.

- The Union Cabinet hiked the minimum support price (MSP) for 2022-23 Kharif season. The rates for 14 Kharif crops have been increased, the hikes ranging from 4% to 8%.

**MSP**
- The MSP is the rate at which the government purchases crops from farmers, and is based on a calculation of at least one-and-a-half times the cost of production incurred by the farmers.
- The Commission for Agricultural Costs & Prices (CACP) recommends MSPs for 22 mandated crops and fair and remunerative price (FRP) for sugarcane.
- CACP is an attached office of the Ministry of Agriculture and Farmers Welfare.
- The mandated crops include 14 crops of the kharif season, 6 rabi crops and 2 other commercial crops.
- In addition, the MSPs of toria and de-husked coconut are fixed on the basis of the MSPs of rapeseed/mustard and copra, respectively.

**Factors for Recommending the MSP:**
- The CACP considers various factors while recommending the MSP for a commodity, it considers following factors
- Cost of production
- Changes in input prices
- Input-output price parity
- Trends in market prices
- Demand and supply
- Inter-crop price parity
- Effect on industrial cost structure
- Effect on cost of living
- Effect on general price level
- International price situation
- Parity between prices paid and prices received by the farmers
- Effect on issue prices and implications for subsidy

**Crops covered**
- The list of crops is as follows.
- Cereals (7) – paddy, wheat, barley, jowar, bajra, maize and ragi
- Pulses (5) – gram, arhar/tur, moong, urad and lentil
- Oilseeds (8) – groundnut, rapeseed/mustard, toria, soyabean, sunflower seed, sesamum, safflower seed and nigerseed
- Raw cotton
- Raw jute
- Copra
- De-husked coconut
- Sugarcane (Fair and remunerative price)
- Virginia flu cured (VFC) tobacco

## LINKING CREDIT CARDS WITH UPI

- The Reserve Bank of India has proposed to allow the linking of credit cards with the Unified Payments Interface (UPI).
- RBI also stated integration will first begin with the indigenous RuPay credit cards.

**What is the significance of the move?**
- Experts believe that the linkage of UPI and credit cards could possibly result in credit card usage zooming up in India given UPI's widespread adoption.

- The integration also opens up avenues to build credit on UPI through credit cards in India, where in the last few years, a number of startups have emerged
- The move could also be a push to increase adoption by banking on UPI's large user base.
- So far, UPI could only be linked to debit cards and bank accounts.

**Unified Payments Interface (UPI):**
- It is an advanced version of Immediate Payment Service (IMPS)- round–the-clock funds transfer service to make cashless payments faster, easier and smoother.
- UPI is a system that powers multiple bank accounts into a single mobile application merging several banking features, seamless fund routing & merchant payments into one hood.
- UPI is currently the biggest among the National Payments Corporation of India (NPCI) operated systems including National Automated Clearing House (NACH), Immediate Payment Service (IMPS), Aadhaar enabled Payment System (AePS), Bharat Bill Payment System (BBPS), RuPay etc.
- The top UPI apps today include PhonePe, Paytm, Google Pay, Amazon Pay and BHIM, the latter being the Government offering.
- NPCI launched UPI with 21 member banks in 2016

**Lithium**
- With the EV industry growing rapidly, the demand for lithium, an essential resource for EV battery makers, has surged along.

**Significance:**
- It is estimated that if the entirety of ore from the African mines are extracted, it will be sufficient to meet the demand for at least 27.78 million vehicles with 60 kWh batteries.

**About Lithium**
- It is a soft, silvery-white metal. Under standard conditions, it is the lightest metal and the lightest solid element.
- It is highly reactive and flammable, and must be stored in mineral oil. It is an alkali metal and a rare metal.

**Key Characteristics and Properties:**
- It has the highest specific heat capacity of any solid element.
- Lithium's single balance electron allows it to be a good conductor of electricity.
- It is flammable and can even explode when exposed to air and water.

**Uses:**
- Lithium is a key element for new technologies and finds its use in ceramics, glass, telecommunication and aerospace industries.
- The well-known uses of Lithium are in Lithium ion batteries, lubricating grease, high energy additive to rocket propellants, optical modulators for mobile phones and as convertor to tritium used as a raw material for thermonuclear reactions i.e. fusion.

**Prescribed substance:**
- The thermonuclear application makes Lithium as "Prescribed substance" under **The Atomic Energy Act 1962** which permits AMD for exploration of Lithium in various geological domains of the country.
- Under **the Atomic Energy Act, 1962,** "Prescribed Substance" means any substance including any mineral which the Central Government may, by notification, prescribe, being a substance which in its opinion is or may be used for the production or use of atomic energy or research into matters connected therewith and includes uranium, plutonium, thorium, beryllium, deuterium or any of their respective derivatives or compounds or any other materials containing any of the aforesaid substances.

## COMPENSATORY AFFORESTATION

- The Delhi Development Authority (DDA) is currently facing a shortage in land for compensatory afforestation.
- This issue of shortage of land for compensatory afforestation was raised by the agency in a letter to the Union Environment Ministry in March
- The DDA, in its letter to the Union Environment Ministry, cited paragraph 2.3 (v) of chapter 2 of the Handbook of Forest Conservation Act, which states: "In exceptional cases where non-forest land for CA is not available in the same State/UT in which the diversion of forest land is proposed, land for CA can be identified in any other State/UTs, preferably in neighboring State/UTs."

**Forest Conservation Act 1980**
- Alarmed at India's rapid deforestation and resulting environmental degradation, the Centre Government enacted the Forest (Conservation) Act in 1980.
- The Forest Conservation Act, 1980 stipulated that central permission is necessary to practice sustainable agro-forestry in forest areas. Violation or lack of permit was treated as a criminal offense.
- An Advisory Committee constituted under the Act advises the Centre on these approvals.
- The Act deals with the four categories of forests, namely reserved forests, village forests, protected forests, and private forests.

**Features**
- **Section 2 of the act lists four criteria** where permission of the Central Government is required for any action of State regarding –
- **Declaring that any reserved forest ceases to be reserved**.
- **Use of forestland for non-forest purposes**.
- **Leasing forest to any private person.**
- Declaring that any forest land may be cleared of trees that have grown naturally in that land, for the **purpose of using it for reforestation**.
- **Removing self-regenerating forest for the creation of plantation** is also the non-forest purpose.
- Under the act **compensatory afforestation** has to be carried out for the diversion of forest land, or deemed forest land, for non-forest purposes.
- Agencies carrying out development works are required to compensate for the loss of "land by land" and loss of "trees by trees".
- The land for CA has to be **free of encroachments and legal tussles**

## INDIA 7TH IN FDI INFLOWS: UNCTAD

- The United Nations Conference on Trade and Development's (Unctad) has released the annual World Investment Report.

**Highlights of the Report: India 7th in FDI Inflows: UNCTAD**
- India is ranked seventh despite a 30% decline in foreign direct investment (FDI) into the country.
- The United States ($367 billion) remained the top recipient of FDI.
- China ($181 billion) and Hong Kong ($141 billion) also retained second and third position respectively.
- Among the top 10 host economies, only India saw a decline in its inflows.
- However, outward FDI from India rose 43 per cent to $15.5 billion in 2021.

**What is FDI?**
- Foreign direct investment (FDI) is an investment from a party in one country into a business or corporation in another country with the intention of establishing a lasting interest. With FDI, foreign companies are directly involved with day-to-day operations in the other country.

**About United Nations Conference on Trade and Development (UNCTAD):**

- It is a permanent intergovernmental body established by the United Nations General Assembly in 1964.
- It is part of the UN Secretariat.
- It reports to the UN General Assembly and the Economic and Social Council, but has its own membership, leadership, and budget.
- It is also a part of the United Nations Development Group.

**TOP 10 FDI RECIPIENTS**
■ 2020 ■ 2021

| Ranking | Country | FDI inflows | (in $ billion) |
|---|---|---|---|
| 1 / 1 | United States | 151 / 367 | |
| 2 / 2 | China | 149 / 181 | |
| 3 / 3 | Hong Kong | 135 / 141 | |
| 6 / 4 | Singapore | 75 / 99 | |
| 12 / 5 | Canada | 23 / 60 | |
| 9 / 6 | Brazil | 28 / 50 | |
| 8 / 7 | India | 64 / 45 | |
| 51 / 8 | South Africa | 3 / 41 | |
| 22 / 9 | Russia | 10 / 38 | |
| 10 / 10 | Mexico | 28 / 32 | |

Source: UNCTAD World Investment Report
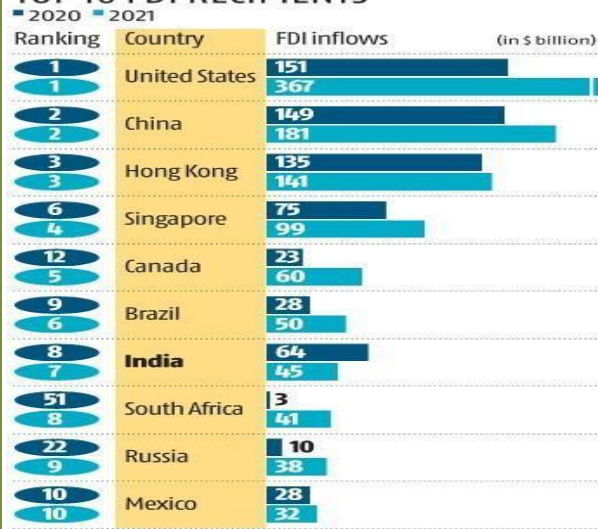
**Objectives and roles:**
- It supports developing countries to access the benefits of a globalized economy more fairly and effectively. Along with other UN departments and agencies.
- It also measures the progress made in the Sustainable Development Goals, as set out in Agenda 2030.

**Reports published by UNCTAD**
1. Trade and Development Report
2. World Investment Report
3. Technology and Innovation Report
4. Digital Economy Report

## QS WORLD UNIVERSITY RANKING 2023

- Leading global higher education analysts QS (Quacquarelli Symonds) has released the 19th edition of one of the most-consulted international university rankings.
- It is the only international ranking to have received the approval of **International Ranking Expert Group (IREG).**

**How are institutions ranked?**
- QS uses six indicators to compile the ranking: Academic reputation (AR), employer reputation (ER), citations per faculty (CPF), faculty/student ratio, international faculty ratio and international student ratio.

**Performance of Indian Institutions:**
- The latest edition features 41 Indian universities, of which 12 improved their positions, 12 remained stable, 10 declined and seven are new entries.
- **The IISc ranks 155th globally,** and is the global leader in the citations per faculty (CpF) indicator, which QS uses to evaluate the impact of the research produced by universities.
- The IISc is the fastest rising South Asian university among the top-200 universities in the QS rankings, having climbed 31 places year on year.
- The IIT Bombay, which was the top Indian university in QS World University Rankings of the previous edition, is the second best Indian institution this time and climbed five places globally to reach the 172 rank.

- The third best Indian university is the Indian Institute of Technology, Delhi (IITD), followed by IIT Madras and IIT Kanpur.
- Jindal Global University is the top-ranked private institute in India.

## PFMS (PUBLIC FINANCIAL MANAGEMENT SYSTEM)

- The Single Nodal Agency (SNA) Dashboard of PFMS (Public Financial Management System) was recently launched by the Union Ministry of Finance.

**What is SNA Dashboard?**
- It is a major reform initiated in 2021 with regards to the manner in which funds for Centrally Sponsored Schemes (CSS) are released, disbursed and monitored.
- Under this system, each state is required to identify and designate an SNA for every scheme.
- All funds for that State in a particular scheme are now credited in this bank account and all expenses by all other Implementing Agencies involved are affected from this account.

**Significance of SNA Model:**
1. Ensures timely allocation of funds.
2. Brought in greater efficiency in CSS fund utilization.
3. Tracking of funds has become easier.

**About PFMS:**
- It was previously known as Central Plan Schemes Monitoring System (CPSMS).
- It is a web-based online software application developed and implemented by the Office of Controller General of Accounts (CGA), Ministry of Finance.
- Objective: To facilitate a sound Public Financial Management System for the Government of India (GoI) by establishing an efficient fund flow system as well as a payment cum accounting network.
- Coverage: At present, the ambit of PFMS coverage includes Central Sector and Centrally Sponsored Schemes as well as other expenditures including the Finance Commission Grants.

## STATE FOOD SAFETY INDEX

- Food Safety and Standards Authority of India (FSSAI)'s 4th State Food Safety Index (SFSI) was released on the occasion of World Food Safety Day (June 7).
- It seeks to measure the performance of States across five parameters of food safety.

**What is the State Food Safety Index (SFSI)?**
- The index was developed by **FSSAI (Food Safety and Standards Authority of India)** in 2018-19 to measure the performance of states on five significant parameters of Food Safety.
- **The parameters include** Human Resources and Institutional Data, Compliance, Food Testing – Infrastructure and Surveillance, Training & Capacity Building and Consumer Empowerment.
- The index will help in providing **safe and nutritious food to our citizens.**



Safety check | Tamil Nadu topped 20 large States in terms of food safety, according to the 4th State Food Safety Index. A look at the top 10 States

| RANK | STATE | SCORE |
|------|-------|-------|
| 1 | TAMIL NADU | 82 |
| 2 | GUJARAT | 77.5 |
| 3 | MAHARASHTRA | 70 |
| 4 | HIMACHAL | 65.5 |
| 5 | WEST BENGAL* | 58.5 |
| 5 | MADHYA PRADESH* | 58.5 |
| 6 | KERALA | 57 |
| 7 | UTTARAKHAND | 55 |
| 8 | ODISHA* | 54.5 |
| 8 | UTTAR PRADESH* | 54.5 |
| 9 | KARNATAKA | 52.5 |
| 10 | RAJASTHAN | 50.5 |

*Ranks 5 and 8 were shared by two States each*

**Performance of various states:**
- Tamil Nadu topped the State Food Safety Index followed by Gujarat and Maharashtra.
- Among Smaller States, Goa stood first, followed by Manipur and Sikkim.
- Among UTs, Jammu and Kashmir, Delhi and Chandigarh secured first, second and third ranks.

**What is World food safety day?**
- **The World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO)** jointly facilitate the observance of World Food Safety Day, in collaboration with Member States and other relevant organizations.
- It was first celebrated in 2019.
- **Objective:** To strengthen the commitment to scale up food safety made by the Addis Ababa Conference and the Geneva Forum in 2019 under the umbrella of **"The Future of Food Safety".**
- The theme for 2022 was **Safer Food, Better Health.**

## AGNIPATH SCHEME

- The GoI unveiled its new Agnipath scheme for recruiting soldiers across the three services
- The soldiers recruited under the scheme will be called Agniveers.

**What is the Agnipath scheme?**
- Under the new scheme, around 45,000 to 50,000 soldiers will be recruited annually, and most will leave the service in just four years.
- Of the total annual recruits, only 25 percent will be allowed to continue for another 15 years under permanent commission.

**What is the eligibility criterion?**
- The new system is only for personnel below officer ranks
- Under the Agnipath scheme, aspirants between the ages of 17.5 years and 21 years will be eligible to apply.
- The recruitment standards will remain the same, and recruitment will be done twice a year through rallies.

**What happens after selection?**
- Once selected, the aspirants will go through training for six months and then will be deployed for three and a half years.
- During this period, they will get a starting salary of Rs 30,000, along with additional benefits which will go up to Rs 40,000 by the end of the four-year service.
- 30 per cent of their salary will be set aside under a Seva Nidhi programme, and the government will contribute an equal amount every month, and it will also accrue interest.
- At the end of the four-year period, each soldier will get Rs 11.71 lakh as a lump sum amount, which will be tax-free.
- They will also get an Rs 48 lakh life insurance cover for the four years.
- In case of death, the payout will be over Rs 1 crore, including pay for the unserved tenure.
- For those who are re-selected, the initial four-year period will not be considered for retirement benefits.
- Recruitment will begin within 90 days under the scheme which will bring "all India, all class" recruitment to the services.

**PAY & BENEFITS: WHAT THE AGNIVEERS GET**

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

Similar contribution to corpus fund by Government of India**

BASIC PAY PER MONTH

| | 1st Year | 2nd Year | 3rd Year | 4th Year |
|---|---|---|---|---|
| Basic Pay | 30,000 | 33,000 | 36,500 | 40,000 |
| In Hand | 21,000 | 23,100 | 25,580 | 28,000 |
| Seva Nidhi | 9,000 | 9,900 | 10,950 | 12,000 |

*All figures in ₹ (Monthly Contribution)*

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

**Exit After 4 Years** ₹11.71 Lakh as SevaNidhi Package *(Including interest accumulated on the above amount as per the applicable rates)*

*Graphics: Ritesh Kumar*

**Benefits**

- The average age in the forces is 32 years today, which will go down to 26 in six to seven years, the scheme envisions.
- It will create "future-ready" soldiers
- This is especially significant for the Army, where the regiment system has region and caste bases, and with time that will be eliminated to allow anybody from any caste, region, class or religious background to become part of existing regiments.
- The move will make the permanent force levels much leaner for the over 13-lakh strong armed forces in the country.
- This will, in turn, considerably reduce the defence pension bill, which has been a major concern for governments for many years.
- It will increase employment opportunities and because of the skills and experience acquired during the four-year service such soldiers will get employment in various fields.

## CHILD MALNUTRITION

**Malnutrition**

- Malnutrition, in all its forms, includes undernutrition (wasting, stunting, underweight), obesity, and resulting diet-related noncommunicable diseases.
- The term malnutrition addresses **3 broad groups of conditions**:
- **Undernutrition,** which includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age)
- **Micronutrient-related malnutrition,** which includes micronutrient deficiencies or micronutrient excess; and
- **Overweight, obesity and diet-related noncommunicable diseases** (such as heart disease, stroke, diabetes and some cancers).
- Malnutrition is a chronic problem and a longstanding challenge for the public administration of India.

**Status**

- The National Family Health Survey (NFHS-5) has shown marginal improvement in different nutrition indicators, indicating that the pace of progress is slow.
- While there was some reduction in stunting rates (35.5% from 38.4% in NFHS-4) 13 States or Union Territories have seen an increase in stunted children since NFHS-4

- The NFHS-5 survey indicates that more than 57% of women (15-49 years) and over 67% children (six-59 months) suffer from anaemia.
- Developing countries lose up to 4.05% in GDP per annum due to iron deficiency anaemia; India loses up to 1.18% of GDP annually.

**Reasons**
- **Monoculture agricultural practices**: Though India has achieved food security, it has not sufficiently addressed the issue of malnutrition.
- These intensive monoculture agricultural practices can perpetuate the food and nutrition security problem by degrading the quality of land, water and the food derived through them.
- **Changing food patterns:** Food consumption patterns have changed substantially in India over the past few decades, which has resulted in the disappearance of many nutritious local foods, for example, millets.
- **Poverty:** It affects the availability of adequate amounts of nutritious food for the most vulnerable populations.
- **Lack of sanitation and clean drinking water:** poor sanitation, and dangerous hygiene practices increase vulnerability to infectious and water-borne diseases
- **Gender injustice:** There is a correlation between gender discrimination and poor nutrition.
- Malnourished girls become malnourished adolescents who marry early and have children who become malnourished, and so the cycle continues.
- **Inappropriate policies and lax implementation –** policies are designed based on real-time data

**Measures Taken to Tackle Malnutrition**
**Integrated Child Development Services (ICDS) Scheme**
- It provides a package of six services namely supplementary nutrition, pre-school non-formal education, nutrition & health education, immunization, health check-up and referral services.

**National Health Mission (NHM)**
- The main programmatic components include health system strengthening in rural and urban areas for – Reproductive-Maternal- Neonatal-Child and Adolescent Health (RMNCH+A), and Communicable and Non-Communicable Diseases.

**Mid Day Meal Scheme**
- It provides that every child within the age group of six to fourteen years studying in classes I to VIII who enrols and attends the school shall be provided with a hot cooked meal, free of charge every day except on school holidays.

**Poshan Abhiyan**
- It was approved in 2017.
- It is a multi-ministerial convergence mission with the vision to ensure the attainment of malnutrition free India by 2022.

**Indira Gandhi Matritva Sahyog Yojna (IGMSY)**
- The scheme aims to contribute to a better enabling environment by providing cash incentives for improved health and nutrition to pregnant and lactating mothers.

**Way forward**
**Financial commitment**
- **Increase investment in women and children's health and nutrition** to ensure their sustainable development and improved quality of life.
- **Saksham Anganwadi** and the Prime Minister's Overarching Scheme for Holistic Nourishment **(POSHAN) 2.0** programme have seen only a marginal increase in budgetary allocation

**Outcome-oriented approach**
- **Strict monitoring and interventions** by parliamentarians in their constituencies
- **Direct engagement with nutritionally vulnerable groups** and contribute toward ensuring last-mile delivery of key nutrition services and interventions.

**Diversification:**
- **Public Distribution System** should be diversified, to include millets

## PERIODIC LABOUR FORCE SURVEY (PLFS) FOR 2020-21

- Periodic Labour Force Survey (PLFS) for 2020-21 was released by the Ministry of Statistics and Programme Implementation

**Findings**
- The unemployment rate saw a decrease of 0.6% and fell to 4.2% in 2020-21, compared with 4.8% in 2019-20
- Rural areas recorded an unemployment rate of 3% and urban areas recorded an unemployment rate of 6.7%.
- The National Statistical Office (NSO) uses "rotational panel sampling design" in urban areas to assess the Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR) and the unemployment rate, and visits selected households in urban areas four times.
- The LFPR, the percentage of persons in the labour force (that is, working or seeking work or available for work) in the population was 6% during 2020-21. It was 40.1% in the previous year.
- The WPR was 39.8%, an increase from 38.2% of the previous year.
- The migration rate is 28.9%. The migration rate among women was 48% and 47.8% in rural and urban areas,



**Looking for work** | The labour force participation rate (LFPR) has continued to improve further in 2020-21, according to the latest Periodic Labour Force Survey. The graph shows LFPR over years across genders

**What is the Periodic Labour Force Survey?**
- The NSO launched the Periodic Labour Force Survey (PLFS) in April 2017.

**The objective of PLFS is primarily two fold:**
- To estimate the key employment and unemployment indicators namely Worker Population Ratio, Labour Force Participation Rate, Unemployment Rate in the short time interval of three months for the urban areas only in the Current Weekly Status (CWS)
- To estimate employment and unemployment indicators in both usual Status and CWS in both rural and urban areas annually.

**Key Terms**

**Unemployment Rate (UR):**
- It is defined as the percentage of persons unemployed among the persons in the labour force.

**Labour Force Participation Rate (LFPR):**
- It is defined as the percentage of persons in the labour force (i.e. working or seeking or available for work) in the population.

**Worker Population Ratio (WPR):**
- It is defined as the percentage of employed persons in the population.

**National Statistical Office**
- It is the central statistical agency of the Government mandated under the Statistical Services Act 1980 under the Ministry of Statistics and Programme Implementation.
- It is responsible for the development of arrangements for providing statistical information services to meet the needs of the Government and other users for information on which to base policy, planning, monitoring and management decisions.

## FINANCIAL ACTION TASK FORCE

- The global money laundering and terrorist financing watchdog FATF has retained Pakistan on its terrorism financing "grey list" and asked Islamabad to address at the earliest the remaining deficiencies in its financial system
- Pakistan has been on the grey list of the Financial Action Task Force (FATF) since June 2018 for failing to check money laundering, leading to terror financing, and was given a plan of action to complete it by October 2019.
- The plenary recently decided against existing Pakistan from the category despite the country meeting 32 out of 34 action points
- Pakistan's robust progress on its global commitments to fight financial crimes was appreciated at the concluding session

**Financial Action Task Force**
- An inter-governmental body established in 1989 during the G7 Summit in Paris.
- Assesses the strength of a country's anti-money laundering and anti-terror financing frameworks.

**Objectives:**
- To set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.

**Headquarters:**
- Its Secretariat is located at the Organisation for Economic Cooperation and Development (OECD) headquarters in Paris.

**Member Countries:**
- The FATF currently has 39 members including two regional organisations – the European Commission and Gulf Cooperation Council. India is a member of the FATF.

**Lists under FATF:**
**Grey List:**
- Countries that are considered safe haven for supporting terror funding and money laundering are put in the FATF grey list.
- This inclusion serves as a warning to the country that it may enter the blacklist.

**Black List:**
- Countries known as Non-Cooperative Countries or Territories (NCCTs) are put in the blacklist. These countries support terror funding and money laundering activities.
- The FATF revises the blacklist regularly, adding or deleting entries.
- Currently, Iran and Democratic People's Republic of Korea (DPRK) are under High-risk Jurisdiction or black list.

**Sessions:**
- The FATF Plenary is the decision making body of the FATF. It meets three times per year.

## RBI GOVERNOR HAS ASKED FOR REGULATION OF BIGTECH

- RBI governor has asked for regulation of Bigtech and Fintech companies. For this, With an aim to provide secure and affordable e-payments, the Reserve Bank of India (RBI) has come up with a document 'Payments Vision 2025'

**Document 'Payments Vision 2025'**
- As part of its Vision 2025, the RBI will attempt
- Regulation of big tech and fintech in the payments space
- Explore guidelines on payments that involve BNPL(buy now pay later) services
- Work towards the introduction of CBDC (central bank digital currency)
- Seek inclusion of rupee in continuous linked settlement (CLS) (CLS provides protection for cross-currency settlement in 18 currencies)

**Why the need for such regulation?**
- **To avoid systemic concerns:** Big Tech's play in lending activities using customer data and sophisticated algorithms can lead to "systemic concerns" like **over-leverage and inadequate quality assessment of borrowers.**
- **Other Concerns:** The entry of firms like Google, Amazon and Meta, which are referred to as Big Tech, also poses concerns related **to competition, data sharing, data protection and operational resilience** of critical services in situations where banks and NBFCs utilise their services.
- Also, risks relating to cybersecurity, software development limitations in transaction capacity, the privacy of customer data and data security.
- **Last year's Financial Stability Report,** had raised some broad concerns, including about such companies' products accepting deposits for some regulated financial sector entities.
- **Sensitive user data:** Big-tech and fintech companies offer sophisticated services which use sensitive data from various sources to issue loans to users, including those not having collateral or credit history.
- **Issues of lending through digital channels, including mobile apps:** Issues related to unfair practices, data privacy, documentation, transparency, and breach of licensing conditions.
- **Multiple regulators:** The fintechs require multiple regulators to work together because a single technology like blockchain or de-centralised finance (DeFi) can have multiple uses coming under different watchdogs' ambit.
- **Anonymity:** DeFi poses unique challenges to regulators as it is anonymous. The lack of a centralised governance body and legal uncertainties can make the traditional approach to regulation somewhat ineffective.

**What needs to be done?**
- Authorities and regulators have to strike a fine balance between enabling innovation and preventing systemic risks.
- Guidelines: RBI will soon be issuing guidelines to make digital lending ecosystems "safe and sound while enhancing customer protection and encouraging innovation".

- Need for entity-based and outcome-based regulation.
- Globally coordinated regulatory approach and inter-regulatory coordination: This will enable comprehensive assessment of such activities, activities and mitigation of risks.
- Use of technology: Use of artificial intelligence and machine learning to determine the creditworthiness of a borrower.
- Transparency: The methodology of algorithms underpinning digital financial services has to be "clear, transparent, explainable and free from exclusionary biases".
- In the age of technological changes, banks should not just work like banking service firms but like technology companies.

## FOOD SECURITY

- Supply disruptions during the pandemic and the Russia-Ukraine war have led many nations to think about self-sufficiency in critical food items
- Examples include Russia's export ban on wheat and sunflower oil, Ukraine's ban on exports of food staples, Indonesia's ban on palm oil exports, Argentina's ban on beef exports, Turkey, Kyrgyzstan and Kazakhstan's ban on a variety of grain products, and India's wheat export ban.
- Sudden actions such as these exacerbate the pressure on global trade leading to a spike in the prices of these commodities, threatening the food security of net food-importing countries.
- Thus such disruptions in supply chain had made India to rethink about self-sufficiency in critical food items or at least reduce their excessive dependence on imports of essential food products.

**Stats**
- India agri-exports in FY22 touched $ 50.3 billion against its agri-imports of $ 32.4 billion.
- This means that Indian agriculture is largely globally competitive.
- But its biggest agri-import item, edible oil, accounts for 59 per cent of India's agri-import basket.
- India's edible oil import bill in 2021-22 (FY22) crossed $19 billion
- Palm oil comprises more than 50 per cent of India's edible oil imports, followed by soybean and sunflower.
- India imports 55 to 60 per cent of its edible oil requirements.
- The excessive dependence on imports has raised the pitch for atmanirbharta in edible oil.
- Thus the GoI launched National Edible Oil Mission-Oil Palm (NEOM-OP) in 2021

**National Edible Oil Mission-Oil Palm (NEOM-OP) in 2021**
- It aims raise the domestic production of palm oil by three times to 11 lakh MT by 2025-26.
- This will involve raising the area under oil palm cultivation to 10 lakh hectares by 2025-26 and 16.7 lakh hectares by 2029-30.

**Features:**
- The special emphasis of the scheme will be in India's north-eastern states and the Andaman and Nicobar Islands due to the conducive weather conditions in the regions.
- Under the scheme, oil palm farmers will be provided financial assistance and will get remuneration under a price and viability formula.

**Significance of the Scheme:**
- **Reduction in Import dependence** – India is the largest consumer of vegetable oil in the world.
- **Rise in Yields** – India produces less than half of the roughly 2.4 crore tonnes of edible oil that it consumes annually, with financial assistance and guidance there will be rise in the yield.
- **Food Security**

**Concerns**
- Achieving atmanirbharta in edible oils would require an additional area of about 39 million hectares under oilseeds.

- Such a large tract of land will not be available without cutting down the area under key staples (cereals) – this could endanger the country's food security
- Long gestation period crop it takes four to six years to come to maturity affecting farmers income
- Price volatility

**Way Forward**
- A rational policy to reduce import dependence in edible oils and achieve food security without affecting other essential crops
- Supporting farmers during gestation period with incentives and opportunity cost of their lands
- Proper pricing formula that take into account the price volatility
- Declare oil palm as a plantation crop and allow the corporate players to own/lease land on a long-term basis
- Development of processing units.

## BLACK SWAN EVENT

- A study by the Reserve Bank of India (RBI) has spoken about the possibility of capital outflows to the tune of $100 billion (around Rs 7,80,000 crore) from India in case of a major global risk scenario or a "black swan" event.

**What is a 'black swan' event?**
- A black swan is a rare, unpredictable event that comes as a surprise and has a significant impact on society or the world.
- These events are said to have three distinguishing characteristics – they are extremely rare and outside the realm of regular expectations; they have a severe impact after they hit; and they seem probable in hindsight when plausible explanations appear.

**When did the term originate?**
- The black swan theory was put forward by author and investor **Nassim Nicholas Taleb in 2001**, and later popularised in his 2007 book – **The Black Swan: The Impact of the Highly Improbable.**
- The term itself is **linked to the discovery of black swans**.
- Europeans believed all swans to be white until 1697, when a Dutch explorer spotted the first black swan in Australia.
- The metaphor 'black swan event' is derived from this unprecedented spotting from the 17th century, and how it upended the West's understanding of swans.

**When have such events occurred in the past?**
- Taleb's book predated the 2008 global financial crisis – a black swan event triggered by a sudden crash in the booming housing market in the US.
- The fall of the Soviet Union, the terrorist attack in the US on September 11, 2001, also fall in the same category

**Is the Covid-19 pandemic a black swan event?**
- The author called it a "white swan", arguing that it was predictable, and there was no excuse for companies and governments not to be prepared for something like this.

## FIVE STATES NEED TO TAKE STEPS TO STABILISE DEBT LEVELS: RBI

- As per the Recent RBI study, five states -Bihar, Kerala, Punjab, Rajasthan and West Bengal are highly stressed states.

**Status of states Debt:**

- **Punjab:** its debt-GSDP ratio is projected to exceed 45 per cent in 2026-27
- **Rajasthan, Kerala and West Bengal:** projected to exceed the debt-GSDP ratio of 35 per cent by 2026-27. These states will need to undertake significant corrective steps to stabilise their debt levels.
- **Ten states accounting for half of the total expenditure in India are** Punjab, Rajasthan, Kerala, West Bengal, Bihar, Andhra Pradesh, Jharkhand, Madhya Pradesh, Uttar Pradesh and Haryana.
- **Debt/GSDP ratio definition:** It is a metric that shows what a state owes with what it produces. It indicates that particular state's ability to pay back its debts.

**Reasons for fiscal deterioration in states:**

- **Not adhering to targets set by the 15th FC:** Among the ten states, Andhra Pradesh, Bihar, Rajasthan and Punjab exceeded both debt and fiscal deficit targets for 2020-21 set by the 15th Finance Commission.
- **Fall in own tax revenue:** It said the own tax revenue of some of these 10 states, viz., Madhya Pradesh, Punjab and Kerala, has been declining over time, making them fiscally more vulnerable.
- **Volatile non-tax revenue:** For most of these states, non-tax revenue has remained volatile, dropping significantly in recent years.
- The decline in non-tax revenue is under **general services, interest receipts and economic services.**
- **High revenue expenditure:** The share of revenue expenditure in total expenditure of these states varies in the range of **80-90 per cent.**
- Some states like Rajasthan, West Bengal, Punjab and Kerala spend around 90 per cent on revenue accounts. This results in **poor expenditure quality**, as reflected in their high revenue spending to capital outlay ratios.
- **Definition of Revenue expenditures: These** include the expenses required to meet the ongoing operational costs of running the government, and thus are essentially the same as operating expenses e.g., rent, employee salary etc.
- **High committed expenditure:** These include interest payments, pensions and administrative expenses, account for a significant portion (over 35 per cent) of the total revenue expenditure in states like Haryana, Uttar Pradesh, West Bengal, Kerala and Punjab, leaving **limited fiscal space for undertaking developmental expenditure.**
- Consequently, the **share of developmental expenditure** in these states is considerably lower than in the other states.
- Although welfare-enhancing, the **impact of revenue spending** on economic activity lasts for just about a year. In contrast, the **impact of capital outlay** is stronger and lasts longer, with the peak effect materialising after two-three years.
- **High losses of DISCOMs:** After the UDAY scheme, the losses of DISCOMs were made part of state government liability. This further worsened the situation.

**Immediate impact:**

- **Impact of COVID19:** It led to high expenditure and low revenue, thus misbalancing state finance
- **Impact of the Russia-Ukraine war:** The high oil prices have led the states to cut duty on Petroleum, thus further impacting their revenue.

**What happens if the debt-to-GDP ratio widens?**

- Each year's borrowing (or deficit) adds to the total debt. Paying back this debt depends on a state's ability to raise revenues.
- If a state, or all the states in aggregate, finds it difficult to raise revenues, a rising mountain of debt — captured in the debt-to-GDP ratio — could start a vicious cycle.
- Then, states end up paying more and more towards interest payments instead of spending their revenues on creating new assets that provide better education, health and welfare for their residents.

**Steps taken:**

- Central government directives: The Centre has urged chief secretaries of all states to keep a check on the increasing debt burden and fiscal deficit as their performance will have a huge bearing on the country's economy.

**Other long-term measures suggested by the central government:**
- Need to adopt the best practices of other states for crop diversification: discourage more paddy and wheat cultivation, and focus on pulses and oilseeds.
- Focus on slums redevelopment and cluster development
- Advance urban planning for Tier II and Tier III cities
- Urban development along the transit corridor
- Focus on the quality of their teachers: The states have been asked to fill vacancies of teachers, train them and equip them with the latest technologies.

**FRBM Act (2003)**
- **Aim:** To make the Central government responsible for ensuring inter-generational equity in fiscal management and long-term macro-economic stability.
- **Fiscal Limits:** The Act envisages the setting of limits on the Central and state government's debt and deficits.
- The States have since enacted their own respective **Financial Responsibility Legislation,** which sets the same 3% of Gross State Domestic Product (GSDP) cap on their annual budget deficits.
- **The NK Singh committee** (set up in 2016) recommendation: The debt to GDP ratio should be 7% for the central government, 20% for the state governments together by the FY 2022 – 23. Fiscal deficit: By FY 2022 – 23, the fiscal deficit should be 2.5% of GDP.

## HUB AIRPORT

- It is time India plans a hub airport flight path
- Transforming one of India's metro gateway airports into a hub airport deserves consideration as the aviation market puts the novel coronavirus pandemic behind it and passenger demand surges.
- India is the third largest domestic aviation market in the world, next only to the United States and China
- In view of the surge in passenger demand, India's airport operators have planned investments upwards of ₹90,000 crore to enhance capacity over the next four years or so.
- To boot, the conditions are just right for building a hub airport.

**What is a hub airport?**
- A hub airport is one served by a multitude of airlines, connecting several airports through non-stop flights.
- There are three basic requirements for becoming a major airport hub, whether domestic or international, i.e.
- Sufficient local consumer demand;
- Good geographic location, and
- Necessary infrastructure to support high-volume traffic.
- A typical hub airport operates on the concept of waves.
- A wave of incoming flights arrives and connects with another wave of outgoing flights that departs an hour or two later.
- Hubbing allows for the maximum combination of flight pairs and a wider choice of destinations and frequencies for connecting passengers.
- Some global examples are (Hub airport/Home airline): London/British Airways; Frankfurt/Lufthansa

**Significance**
- It is a win-win for all.
- A hub creates economies of scale for the airport and airlines alike.

- The airport benefits from increased direct connectivity with other airports and more revenue opportunities due to increased passenger footfalls.
- Improved passenger throughput has a knock-on effect on the wider airport ecosystem, such as aero and non-aero service providers at the airport, including cargo and ground handling, etc.
- Airlines, on their part, get to serve city pairs that are otherwise economically unviable for non-stop flights.
- Frequent fliers get greater choice and flexibility with flights, destinations, and service frequencies, as well as lower ancillary costs, such as avoiding the time and cost of an overnight stay.
- It is well established that the creation of one job in the aviation sector affects the creation of up to six jobs in allied sectors, such as tourism and hospitality.
- All this propels the economic and social development of the city and its inhabitants, too.

**An India perspective**
- In India the first two requirements are largely addressed and the focus is rightly on addressing the third requirement i.e. infrastructure

**Factors in favour**
- India has the largest diaspora, or transnational community, at 18 million people across all six continents and regions being third largest domestic aviation market in the world it can go for airport hub
- India is located on busy international air corridors that connect Europe, Africa, and the Middle East with Asia, making it ideal for a transit hub and alternative/diversion/fuel stop/technical stop; being the fifth-largest economy
- Given these favourable factors India can support development of more than one hub airport.

**Impediments**
- There are capacity constraints at major airports because of a lack of landing slots, especially during peak hours
- The Airports Authority of India Act (AAI), 1994 constrains the AAI/airport operators from commercially exploiting available land for non-aeronautical activities
- A high cost-low fare operating environment and increased competition hurts airline balance sheets and financials, which hurts the growth of airports
- There is a need to develop inter-modal connectivity (rail/road – air) and logistics support infrastructure as a part of the future master plans to fully exploit potential with cargo and freight. With the carefully framed policy, India can bring down its logistic cost, increase people to people contact and raise the contribution of hospitality sector to the economy.

## INDIA'S EMERGING TWIN DEFICIT PROBLEM

- The Monthly Economic Review highlights two key areas of concern for the Indian economy: the fiscal deficit and the current account deficit (or CAD)

**Fiscal deficit**
- As government revenues take a hit following cuts in excise duties on diesel and petrol, an upside risk to the budgeted level of gross fiscal deficit has emerged
- The fiscal deficit is essentially the amount of money that the government has to borrow in any year to fill the gap between its expenditures and revenues.
- Higher levels of fiscal deficit typically imply more borrowing by the government in the market which leads to crowding out effect.
- At a time when the government is trying its best to kick-start and sustain a private sector investment cycle, borrowing more than what it budgeted will be counter-productive.

**Current account deficit**
- The current account essentially **refers to two specific sub-parts**:

- **Import and Export of goods** — this is the "trade account".
- **Import and export of services** — this is called the "invisibles account".
- The **net effect of a trade account and the invisibles account is a deficit**, then it is **called a current account deficit or CAD.**
- A **widening CAD tends to weaken the domestic currency** because a CAD implies more dollars (or foreign currencies) are being demanded than rupees.
- Costlier imports such as crude oil and other commodities will not only widen the CAD but also put downward pressure on the rupee. A weaker rupee will, in turn, make future imports costlier.
- The report underscores the need to trim revenue expenditure.
- Rationalizing non-capex expenditure has thus become critical, not only for protecting growth supportive capex but also for avoiding fiscal slippages
- Capex or capital expenditure essentially refers to money spent towards creating productive assets such as roads, buildings, ports etc.
- Capex has a much bigger multiplier effect on the overall GDP growth than revenue expenditure.

## DIRECTORATE GENERAL OF CIVIL AVIATION (DGCA)

- In the occurrence of recent events of bird strikes during the flight, Directorate General of Civil Aviation (DGCA) has issued directives to all airport operators, it has asked all airports to "review their wildlife hazard management plans" for "within and outside the airfield"

**Directorate General of Civil Aviation (DGCA)**
- The Directorate General of Civil Aviation (DGCA) is a statutory body of the Government of India to regulate civil aviation in India, primarily dealing with safety issues.
- The headquarters are located in New Delhi with regional offices in the various parts of India.
- Mandate: DGCA is responsible for the regulation of air transport services to/from/within India and for enforcement of civil air regulations, air safety, and airworthiness standards.

**Functions**
- Registration of civil aircraft
- Formulation of standards of airworthiness for civil aircraft registered in India and grant of certificates of airworthiness to such aircraft.
- Licensing of pilots, aircraft maintenance engineers and flight engineers, and conducting examinations and checks for that purpose
- Licensing of air traffic controllers
- Conducting an investigation into accidents/incidents and taking accident prevention measures including formulation of implementation of Safety Aviation Management programs.
- Coordination at the national level for flexi-use of air space by civil and military air traffic agencies and interaction with ICAO for provision of more air routes for civil use through Indian air space.
- Promoting indigenous design and manufacture of aircraft and aircraft components by acting as a catalytic agent.

## INDIA'S DIGITAL ECONOMY

- Addressing the meeting of the BRICS Business Forum, Prime Minister said the digital transformation unfolding in India has never before been seen on the world stage
- India's digital economy and the infrastructure sector has a total potential for $2.5 trillion
- There are more than 100 unicorns in over 70,000 start-ups in India, and their number continues to grow.
- The value of the Indian digital economy will reach $1 trillion by 2025

**Advantages of a Digital Economy**

- **Removal of Black Economy:** By restricting cash-based transactions and using only digital payments, the government can efficiently expel the black economy.
- Empowerment to People: Direct Benefit Transfer, fight against Corruption
- **Creation of new jobs**
- **Increase in Revenues:** Each transaction is recorded, customers will get a bill for their purchase, and the merchants are bound to pay sales tax to the government.
- **e-governance:** Digital economy will pave a way to e-governance, where delivery of all government services would be done electronically

**Measures taken by Government**
- **Digilockers:** it is a "digital locker" service operated by the Government of India that enables Indian citizens to store certain official documents on the cloud.
- **Digital Payments:** The introduction of Unified Payments Interface (UPI), which introduced the benefits of digital payments in every part of the country.
- **BHIM app**—It is an app to enable digital payments.
- **Pradhan Mantri Gramin Digital Saksharta Abhiyan** to make citizen digitally literate.
- **BharatNet Project:** world's largest rural broadband connectivity programme using Optical fibre

**Challenges**
- **Lack of connectivity/infrastructure:** Slow roll-out of Wi-Fi hotspots and the slow speed
- **Lack of incentives:** Most small and medium scale industry is struggling to adapt to modern technology
- **Digital illiteracy:** Huge digital divide between gender, regions etc
- **Lack of skilled manpower:** Lack of user education and there are limited facilities to train personnel

**Way forward**
- India's technical and management institutes should revamp their curriculum to integrate and promote digital technologies
- Skill development initiatives to train manpower
- Stricter data protection laws that govern such cross border digital flows is needed he digital economy is heavily based on intellectual property, strict protection to patents and copyrighted work, whether produced in India or elsewhere is also need to be implemented.

**BRICS Summit**
- The BRICS summit is being hosted by China as a chair of BRICS this year

**BRICS**
- BRICS is an acronym for the grouping of the world's leading emerging economies, namely Brazil, Russia, India, China and South Africa.
- The BRICS Leaders' Summit is convened annually.
- The Chairmanship of the forum is rotated annually among the members, in accordance with the acronym B-R-I-C-S
- Together, BRICS accounts for about 40% of the world's population and about 30% of the GDP
- The first BRIC Summit took place in 2009 in the Russian Federation
- South Africa was invited to join BRIC in December 2010, after which the group adopted the acronym BRICS.
- South Africa subsequently attended the Third BRICS Summit in Sanya, China, in March 2011.

**BRICS Initiatives**
**New Development Bank**
- During the Sixth BRICS Summit in Fortaleza (2014) the leaders signed the Agreement establishing the New Development Bank (NDB).

- Fortaleza Declaration stressed that the NDB will strengthen cooperation among BRICS and will supplement the efforts of multilateral and regional financial institutions for global development thus contributing to sustainable and balanced growth.
- NDB is headquartered in Shanghai.

**Contingent Reserve Arrangement**
- Considering the increasing instances of global financial crisis, BRICS nations signed BRICS Contingent Reserve Arrangement (CRA) in 2014 as part of Fortaleza Declaration at Sixth BRICS summit.
- The BRICS CRA aims to provide short-term liquidity support to the members through currency swaps to help mitigating BOP crisis situation and further strengthen financial stability.

## THE PROBLEMS PLAGUING THERMAL POWER GENERATORS

- On June 10, India's power demand touched a record high of 211 MW even as the coal shortage continued with coal stocks available only for eight days.
- To bridge the gap between shortage in domestic supply and increasing demand, power-generating companies or 'gencos' were directed to use imported coal for 10% of their requirement, failing which their domestic supplies would be cut.

**Why does India have a recurring power crisis?**
**Coal**
- India is the second largest producer of coal, with reserves that could last up to 100 years. Despite that, year after year, the shortage of coal supplies continues to be an issue.
- The domestic production of coal stagnated between FY18 and FY21, but revived in FY22. The power demand too surged owing to economic recovery and hotter weather conditions.
- This dip in imports can be attributed to the skyrocketing prices of coal in the international markets. The price of imported coal is nearly 5-6 times higher than domestic supply. It is in this scenario that the Power Ministry asked the gencos to import coal. However, States are wary of using imported coal as it would raise the cost of power substantially.
- The shortfall in domestic supplies and the rising cost of imports have put power plants in a precarious situation. About 79 of the 150 plants that depend on domestic coal had critical stocks (<25% of the required stock). Eight import-based coal plants were also at critical levels.
- Perennial bottlenecks – The Discoms
- The use of imported coal will also push up the price of power supply to the power distribution companies or 'Discoms,' often dubbed as the weakest link in the power sector chain.
- Discoms owe long-standing dues to the gencos. Delays in payments by discoms create a working capital crunch for generating companies which in turn inhibits them from procuring an adequate quantity of coal.
- Discoms are bleeding because the revenue they generate is much lower than their costs. This is evident from the huge gap between the average cost of supply and average revenue realised. Tamil Nadu, Jammu and Kashmir, and Rajasthan have the widest gap between revenues and expenses of discoms.
- Apart from providing power at cheaper rates, some State governments do not revise tariffs periodically.
- Further, the delay in getting compensation from the government also compounds the woes of cashstrapped discoms.

## MSMEs

- Bringing MSMEs into inclusive and sustainable global value chains.

**Stats**
- MSMEs are the largest employer in India outside of agriculture, employing over 1 crore people, or 45% of all workers.

- It is no exaggeration to call MSMEs – privately owned enterprise with less than ₹50 crore in investments in plant and machinery and turnover below ₹250 crore – the backbone of the Indian economy.

**Challenges**
- The disruption of the pandemic severely impacted MSMEs
- Their small size and lack of access to resources meant that many were only beginning to mount a fragile recovery just when renewed war, supply shocks and soaring fuel, food and fertilizer prices presented a host of new threats.
- And all of this comes against the backdrop of the ongoing climate crisis, the greatest disruption multiplier of all.
- There is high degree of informality in the sector, with many enterprises unregistered, and both employers and workers are lacking awareness of and commitment to comply with labour and environmental laws.
- As a result, informal enterprises cannot access formal MSME support and financing nor participate in global value chains that require full compliance with all applicable regulations.
- The Government of India has rightly identified the development of the country's MSME ecosystem as a top priority for achieving Atma Nirbhar Bharat
- India's ambitious "Make in India" campaign aims put the country up the manufacturing value chain to position itself as a global manufacturing hub

**What's need to be done?**
- **Digitalisation concerns:** With few exceptions, digitalisation into smart manufacturing operations is still in its infancy.
- Therefore, there is a need for replicable digital solutions adapted for MSMEs, including digital enhancements for machinery and equipment currently in use.
- Government initiatives such as the Digital Saksham and the interlinking of the Udyam, e-Shram, National Career Service (NCS), and Atmanirbhar Skilled Employee-Employer Mapping (ASEEM) portals show the promise of targeted digitalisation schemes.
- **Environmental impact:** greening reduces the environmental impact of MSME operations and fosters cleantech innovation and entrepreneurship to accelerate the transition to a circular and low carbon economy.
- As a result MSMEs invested themselves during the cash-strapped COVID period ₹157 crore to save 13,105 tonnes of oil equivalent and ₹81 crore in annual operating costs and preventing 83,000 tonnes of greenhouse gas emissions
- Provide credit access for R&D in green technologies
- To increase the resilience of supply in response to recent shocks, production locations for global value chains are increasingly shifting and diversifying across countries and regions.
- This presents a strategic opportunity for India to tap into.
- Supply chain relocation is often accompanied by greater involvement of suppliers in innovation and product development.
- India should utilize this opportunities with carefully framed investment policies like incentives in tax, credit support etc
- The compelling vision of India as a world-class manufacturing and services hub for the world, moving towards upper middle-income status and achieving the SDGs, can best be achieved with the widespread and transformational uplifting of the MSME segment.
- Government initiatives, supported by international institutions and partners, have helped demonstrate this is doable if further scaled up, with lessons for enhancement being drawn together.

## GROWING FREEBIE CULTURE

- There is growing trend of freebie culture in India. In this context let us analyze whether such electoral promises are sustainable or not.

**Resources to fund the electoral promises**
- Much of the borrowing that funds these freebies happens off budget.
- The typical modus operandi for States has been to borrow on the books of their public enterprises, in some cases by pledging future revenues of the State as guarantee.
- Effectively, the burden of debt is on the State exchequer.
- A certain amount of spending on transfer payments to provide safety nets to the most vulnerable segments of the population is not only desirable but even necessary.
- The problem arises when such transfer payments become the main plank of discretionary expenditure, the spending is financed by debt, and the debt is concealed to circumvent the FRBM targets.
- There is no comprehensive information in the public domain to assess the size of this off-budget debt, but anecdotal evidence suggests that it is comparable in size to the debt admitted in the Budget books.

**Failed Checks**
- Unfortunately, all of them have become ineffective.

**Opposition**
- In theory, the first line of defence has to be the legislature, in particular the Opposition, whose responsibility it is to keep the Government in line.
- But given the perils of our democracy, the Opposition does not dare speak up for fear of forfeiting vote banks that are at the end of these freebies.

**CAG**
- In practice, it has lost its teeth, our bureaucracy has mastered the fine art of turning audit paras into 'files' which run their course and die a quiet death.

**The market**
- In practice this fails since the market perceives all State borrowing as implicitly guaranteed by the Centre, but there is no such guarantee in reality.

**Consequences**
- The more States spend on transfer payments, the less they have for spending on physical infrastructure such as power and roads, and on social infrastructure such as education and health, which can potentially improve growth and generate jobs.
- Makes beneficiaries lazy, thus leading to unemployment problems and affecting the social harmony of the society
- The amount States borrow collectively every year is comparable in size to the Centre's borrowing which implies that their fiscal stance has as much impact on our macroeconomic stability as does that of the Centre.
- Thus instituting more effective checks that can make wayward States fall in line is compelling.

**Way forward**
**Amendment of FRBM Act**
- Under the current FRBM provisions, governments are mandated to disclose their contingent liabilities, but that disclosure is restricted to liabilities for which they have extended an explicit guarantee
- The provision should be expanded to cover all liabilities whose servicing obligation falls on the Budget, or could potentially fall on the Budget, regardless of any guarantee

**Strict Monitoring by the centre**
- Under the Constitution, States are required to take the Centre's permission when they borrow.
- The Centre should not hesitate to impose conditionalities on wayward States when it accords such permission.

**Use of Financial Emergency Provision**
- Constitution of India allows the President to declare financial emergency in any State if s/he is satisfied that financial stability is threatened.
- It is therefore important to ensure that the prospect of a financial emergency in case of gross and continuing fiscal irresponsibility is not just an abstract threat but a realistic one.

## INDIA'S GIG WORKFORCE

- A report on India's gig workforce was released by NITI Aayog
- According to the study released by NITI Aayog the number of workers engaged in the gig economy is estimated to be 77 lakh in 2020-21 and is expected to grow to 2.35 crore by 2029-30.

**What is the Gig Economy?**
- A gig economy is a free market system in which temporary positions are common and organizations contract with independent workers for short-term engagements.
- A gig economy undermines the traditional economy of full-time workers who rarely change positions and instead focus on a lifetime career.
- Gig workers include self-employed, freelancers, independent contributors and part-time workers.
- The report broadly classifies gig workers into platform and non-platform-based workers.
- Platform workers are those whose work is based on online software apps or digital platforms.
- Non-platform gig workers are generally casual wage workers and own-account workers in the conventional sectors, working part-time or full time.
- The report notes that at present, about 47% of gig work is in medium skilled jobs, about 22% in high skilled, and about 31% in low skilled jobs, and the trend shows the concentration of workers in medium skills is gradually declining and that of the low skilled and high skilled is increasing.
- While in 2020-21, the gig workforce constituted 2.6% of the non-agricultural workforce or 1.5% of the total workforce in India, by 2029-30, gig workers are expected to form 6.7% of the non-agricultural workforce or 4.1% of the total livelihood workforce in India
- Thus India requires a framework that balances the flexibility offered by platforms while also ensuring social security of workers.

**Recommendations of NITI Aayog**
**Through Initiatives**
- It has recommended introducing a 'Platform India initiative', on the lines of the 'Startup India initiative', built on the pillars of accelerating platformisation by simplification, funding support and incentives, skill development, and social financial inclusion.

**Access to credit**
- Access to institutional credit may be enhanced through financial products specifically designed for platform workers and those interested to set-up their own platforms.

**Wider Market Access**
- It has suggested linking self-employed individuals to platforms so that they can sell their produce to wider markets.
- Other recommendations include gender sensitisation and accessibility awareness programmes for workers and their families, extending social security for gig and platform workers in India, and conducting a comprehensive study on key aspects of the platform economy.

## PERFORMANCE GRADING INDEX FOR DISTRICTS

- The Department of School Education and Literacy, Ministry of Education (MoE) has released the Performance Grading Index for Districts (PGI-D)
- PGI-D assesses the performance of school education system at the district level by creating an index for comprehensive analysis
- It is based on 83 indicators grouped in six categories.
- These categories are outcomes, effective classroom transaction, infrastructure facilities and student's entitlements, school safety and child protection, digital learning and governance process.
- PGI-D grades the districts into ten grades — highest achievable grade is Daksh, which is for districts scoring more than 90% of the total points in that category or overall.
- Utkarsh category is for districts with scores between 81-90% followed by Ati-Uttam (71-80%), Uttam (61-70%), Prachesta-I (51-60%), Prachesta-II (41-50%) and Pracheshta III(31-40%)
- The lowest grade in PGI-D is called Akanshi-3 which is for scores upto 10% of the total points.
- Rajasthan's Sikar is the top performer followed by Jhunjhunu and Jaipur
- The three districts have figured in the Utkarsh category with Junjhunu scoring the maximum in learning outcomes.
- The other States whose districts have performed best in the latest index are Punjab with 14 districts in Ati-uttam grade followed by Gujarat and Kerala with each having 13 districts in this category.
- There are 12 States and Union Territories which don't have even a single district in the Ati-uttam and Uttam categories and these include seven of the eight States from the northeast region.
- The report states that since none of the States have districts in the top category there was a need for further improvement in the years to come.

**Digital learning**
- The PGI-D for 2019-20 shows that schools across India performed poorly under the category of digital learning, which threw up the lowest scores compared to the other parameters which were considered while creating the index.
- In the index, as many as 180 districts scored less than 10 per cent on digital learning, 146 districts scored 11 to 20 per cent, while 125 districts had scores between 21 and 30 per cent.
- There is a clear rural-urban divide in the area of digital learning.
- For instance, while districts in cities like Chandigarh and Delhi scored between 25 and 35 out of 50, places like Bihar's Araria and Kishanganj scored as low as 2
- The district-wise performance on digital learning was drawn up based on the number of schools with computers/laptops, Internet facility, student-to-computer ratio and percentage of teachers trained to use and teach through computers.

## STARTUP ECOSYSTEM

- The startup ecosystem which has been in overdrive for the past few years — propelled by a combination of factors, but largely, by the era of cheap money — is now showing signs of weakness.
- Built on a narrative — the combination of accelerated financial inclusion (bank accounts), ease of identification (Aadhaar) and connectivity (mobile phones) — it is ultimately a bet on the Indian consumer, and the economy

**Current Status**
- Among the startups that have gone public in recent times, Paytm's losses stood at Rs 2,396 crore in 2021-22, while for Zomato and PB Fintech (PolicyBazaar) losses were Rs 1,222 crore and Rs 832 crore respectively.
- The seemingly inexhaustible source of cash that funds such losses is now being squeezed.

**Reasons**
- During the heady days, many numbers, indicators of the size of the market or TAM (the total addressable market), were discussed about.

- But in reality, for most of these startups, the market or even the potential market is just a fraction of this.
- The reality is, there aren't that many consumers with significant discretionary spending capacity, and those with the capacity aren't increasing their spending as these companies would hope.
- This seems to be the case across startups for a range for products/services.

**Digital payment platforms**
- When it comes to consumers with considerable discretionary spending, the size of the market shrivels considerably
- While these companies have seen an increase in the number of transacting customers, to what extent the overall customer base for these startups can expand further is constrained by the number of households in the cohort that has significant spending power.
- Tighter financial conditions, a re-rating of the market, will impact both fundraising efforts and valuations. Some startups will survive this period. Many may not. And changes in the dynamics of private markets will also have a bearing on public markets.

## GOVERNMENT HIKES GST FOR HOUSEHOLD ITEMS

- GST Council hikes tax on over two dozen goods and services from July 18.
- Tax hikes will kick in for over two dozen goods and services, ranging from unbranded food items, curd and butter milk to low-cost hotels, cheques and maps.
- At the same time, tax rates will be lowered for about half a dozen goods and services, including ropeways and truck rentals where fuel costs are included, and scrapped for products imported by private vendors for use by defence forces.
- In its 47th meeting, the GST Council discussed recommendations of four ministerial panels — on rate rationalisation, on movement of gold and precious stones, system reforms, and casinos, horse racing and online gaming.
- The GoM headed by Karnataka Chief Minister Basavaraj Bommai has been given a three-month extension for rate rationalisation measures including tweaking the tax slabs.
- On the valuation mechanism for taxing casinos, a Group of Ministers headed by Meghalaya Chief Minister Conrad Sangma has been asked to consider submissions of stakeholders again and submit its report by July 15.
- Modifications in GST's IT systems to bolster compliance and crack down on tax evasion have been agreed, based on recommendations of a GoM led by Maharashtra Deputy Chief Minister Ajit Pawar.
- Suggestions by another GoM led by Kerala Finance Minister K.N. Balagopal on the movement of gold and precious stones were also accepted by the Council, enabling States to decide on the best way to implement an e-way bill system for intra-State movement of gold worth over ₹2 lakh.
- To resolve the long-pending issue of constituting a GST Appellate Tribunal, the Council has decided to form a fresh Group of Ministers whose report will be taken up at its next meeting

**On GST Compensation extension**
- At the meeting, over a dozen States wanted the GST compensation to continue for some more time.
- About 16-17 State representatives in the Council spoke on the GST compensation issues, of which about 12-13 sought an extension of the assured compensation period, while three-four spoke about the need to wean themselves away from the dependence on assured revenues.
- Union Finance Minister assured that issue to be discussed.

**GST Council**
- The 101st Amendment Act of 2016 paved the way for the introduction of a new tax regime (GST) in the country
- The amendment provided for the establishment of a GST Council.
- The amendment inserted a new Article 279-A in the Constitution of India.
- This article empowered the President to constitute a GST Council by an order.

**Composition of GST Council**
- The Union Finance Minister of India will serve as the chairperson of this council.
- The respective states will nominate the State Finance Ministers/ or any other Minister as a member of the council.
- The Union Minister of State in charge of revenue or finance will also be a member of this council.
- The representatives of the states shall choose amongst themselves one "Vice-president".

**Working of the council**
- The decisions of the Council are taken at its meetings.
- One-half of the total numbers of members of the Council is the quorum for conducting a meeting.
- Every decision of the Council is to be taken by a majority of not less than three-fourths of the weighted votes of the members present and voting at the meeting.
- The vote of the central government shall have a weightage of one-third of the total votes cast in the meeting.
- The votes of all the state governments combined shall have a weightage of two-thirds of the total votes cast in that meeting.

**Functions of the Goods and Services Tax Council**
- The Council is required to make recommendations to the center and the states on the following matters:
- The taxes, cesses, and surcharges levied by the center, the states, and the local bodies would be merged in GST.
- The goods and services that may be subjected to GST or exempted from GST.
- Model GST Laws, principles of levy, apportionment of GST levied on supplies in the course of inter-state trade or commerce, and the principles that govern the place of supply.
- The threshold limit of turnover below which goods and services may be exempted from GST.
- The rates include floor rates with bands of GST.
- Any special rate or rates for a specified period to raise additional resources during any natural calamity or disaster.
- Special provision with respect to the states of Arunachal Pradesh, Assam, Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Himachal Pradesh, and Uttarakhand.
- Any other matter relating to GST, as the Council may decide.
- In addition, the council shall also recommend the date on which the GST may be levied on petroleum crude, high-speed diesel, petrol, natural gas, and aviation turbine fuel.

## PRIMARY AGRICULTURAL CREDIT SOCIETIES (PACS)

- The Cabinet Committee on Economic Affairs approved computerisation of Primary Agricultural Credit Societies (PACS) with the aim of increasing efficiency of PACS, bringing transparency and accountability in their operations.
- This project proposes computerization of about 63,000 functional PACS over a period of five years with a total budget outlay of Rs 2,516 crore with the central government's share of Rs 1,528 crore.

**Primary Agricultural Cooperative Credit Societies (PACS)**
- The PACS constitute the lowest tier of the three-tier short-term cooperative credit (STCC) in India comprising of nearly 13 crore farmers as its members.
- Through computerization PACS will become nodal service delivery point for interest subvention scheme (ISS), PM Fasal Bima Yojana, Direct Benefit Transfer and provision of inputs like fertilisers, seeds etc.
- It will ensure speedy disposal of loans, lower transition cost, faster audit and reduction in imbalances in payments and accounting with State Cooperative Banks (SCBs) and District Central Cooperative Banks (DCCBs)

- PACS account for 41% of the Kisan Credit Card (KCC) loans given by all entities in the country and 95 % of these KCC loans through PACS are to the small and marginal farmers.
- The other two tiers viz. SCBs and DCCBs have already been automated by the NABARD and brought on Common Banking Software (CBS).

# SCIENCE AND TECHNOLOGY MEDICINE

## ASTRA MK-1

- The Ministry of Defence signed a contract with the Hyderabad-based public-sector Bharat Dynamics Ltd (BDL) for supply of the Astra Mark-1, at a cost of Rs 2,971 crore, for deployment on fighter jets of the Indian Air Force and Indian Navy.

**Astra Mk-1**
- The Astra Mk-1 is a beyond visual range (BVR), air-to-air missile (AAM).
- Beyond Visual Range Air-to-Air Missile (BVRAAM) technology enables the fighter-pilots to shoot precisely at the enemy targets which are beyond their visual range
- AAMs are fired from an airborne asset to destroy an airborne target
- The missile has been designed and developed by the Defence Research and Development Organisation (DRDO) for deployment on fighter jets like Sukhoi-30 MKI and Tejas of the IAF and the Mig-29K of the Navy
- Range: While the range for Astra Mk-1 is around 110 km, the Mk-2 with a range over 150 km is under development
- Speed: The missile can travel at speeds more than four times that of sound and can reach a maximum altitude of 20 km, making it extremely flexible for air combat.

**Strategic Significance**
- The missile has been designed based on requirements specified by the IAF for BVR as well as close-combat engagement, reducing the dependency on foreign sources.
- AAMs with BVR capability provides large stand-off ranges to own fighter aircraft.
- Stand-off range means the missile is launched at a distance sufficient to allow the attacking side to evade defensive fire from the target.
- It can neutralise adversary airborne assets without exposing adversary air defence measures.
- Astra is technologically and economically superior to many such imported missile.

## DOMINANCE OF ELECTRONIC-THREE WHEELERS

- India's push for electric vehicles (EVs) was renewed when phase-II of the Faster Adoption and Manufacturing of (Hybrid and) Electric (FAME) Vehicles scheme in India, with an outlay of ₹10,000 crore, was approved in 2019.
- India was doubling down on its EV ambitions, focusing on cultivating demand for EVs at home while also developing its own indigenous EV manufacturing industry which could cater to this demand.

**FAME II**
- Aims to boost electric mobility and increase the number of electric vehicles in commercial fleets
- Initially envisioned for three years, FAME-II got a two-year extension in June 2021 owing to a number of factors including the pandemic.
- It aims to support 10 lakh e-two-wheelers, 5 lakh e-three-wheelers, 55,000 e-four-wheeler passenger cars and 7,000 e-buses.
- As a part of FAME-II, the government has made a push for indigenous manufacturing of EVs
- While e-two-wheelers and e-four-wheelers receive significant coverage, a three-wheeled underdog has been quietly dominating the Indian EV space.

**The Dominance of e-3-wheelers**

- Three-wheeler EVs like e-autos and e-rickshaws account for close to 65% of all EVs registered in India while two-wheeler EVs come at a second with over 30% of registrations and passenger four-wheeler EVs at a meagre 2.5%
- Under the targets for FAME-II, e-three-wheelers have crossed over 4 lakh vehicles of the 5-lakh target since 2019.
- At the current rate, e-three-wheelers are expected to breach the 5-lakh target by 2023

**Factors responsible for success of e-3-wheelers**
- The EV registrations data show that Assam, Bihar, Delhi, Uttar Pradesh and West Bengal account for close to 80% of all e-three-wheeler registrations
- Of these five States, Assam, Delhi, U.P., and West Bengal have formalised EV policies
- Indigenously designed and produced, e-three-wheelers like e-rickshaws have become a common sight in these States
- These vehicles are produced by local workshops and small enterprises and have come to dominate the e-three-wheeler market
- With financial assistance from FAME-II, local manufacturers have built a truly Indian EV with its unique design catering to Indian commuter needs.
- Legacy automakers have been struggling to compete with these local producers.
- The focus of the EV policies of these five States is on accelerating adoption of EVs among consumers and promoting local manufacturing.
- The success India has experienced in the e-three-wheeler space has come from developing both the demand and supply sides. Subsidies, tax exemptions, and interest-free loans have successfully rallied demand for these vehicles.
- These vehicles are easy to maintain, and have relatively low operating costs, making them immensely popular among operators

**E-2-wheelers and e-4-wheelers**
- This success in the e-three-wheeler space has been difficult to replicate in the e-two-wheeler and e-four-wheeler space, which have problems both on the demand and supply side
- Both the types are associated with personal use, consumers are justifiably apprehensive in adopting such vehicles given the host of issues which come with it.
- The recent incidents of fires in e-scooters have added to the apprehension.
- Reliable manufacturers with proven track records in the two-wheeler and four-wheeler EV space in India are hard to come by – this adds to the supply side crunch and there are very few affordable offerings for the consumer.

**Issues to be addressed**
- The current policies focuses on accelerating adoption of EVs among consumers, have spurred an e-three-wheeler dominance
- The major aspect that is missing the attention of policy makers is adequate passenger safety
- Local manufacturing enterprises often lack the necessary resources or the motivation to invest in design developments focusing on safety.
- Lack of proper oversight from regulatory bodies over these manufacturers adds to the woes.
- The current State-level policies have led to an increasingly fragmented manufacturing industry with non-uniform standards – This fragmentation has led to legacy automakers struggling to compete with the large number of manufacturers in every State

**Way Forward**
- Future EV policies must incorporate appropriate design and passenger safety standards
- EV policies must address the issues faced by legacy automakers and ensure they are not demotivated from competing in the e-three-wheeler space. Their resources are necessary for designing and manufacturing more advanced and safer e-three-wheelers

- Future EV policies must therefore take into account the existing and emerging stakeholders on the demand and supply sides for effective implementation. With the prevailing trajectory of EVs, India must take lessons from its e-three-wheeler success story to sustain its EV ambitions.

## LIQUID NANO UREA

- Recently Prime Minister of India officially inaugurated the country's first liquid nano urea plant at Kalol, Gujarat
- This patented product is expected to not only substitute imported urea, but to also produce better results in farms.
- IFFCO commissioned the Kalol liquid nano urea plant, the country's first, in August 2021.

### Liquid Nano Urea
- It is essentially urea in the form of a nanoparticle.
- Urea is a chemical nitrogen fertiliser, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- The product has been developed by Indian Farmers Fertiliser Cooperative Limited (IFFCO) Nano Biotechnology Research Centre (NBRC) at Kalol.
- While conventional urea has an efficiency of about 25 per cent, the efficiency of liquid nano urea can be as high as 85-90 per cent.
- Conventional urea fails to have the desired impact on crops as it is often applied incorrectly, and the nitrogen in it is vaporised or lost as gas – A lot of nitrogen is also washed away during irrigation.
- Liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant.
- Fertilisers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata, pores found on the epidermis of leaves
- 2-4 ml of nano urea should be mixed a litre of water and sprayed on crop leaves at active growth stages
- Liquid nano urea contains 4 per cent total nitrogen (w/v) evenly dispersed in water. The size of a nano nitrogen particle varies from 20-50 nm.
- Liquid nano urea has a shelf life of a year, and farmers need not be worried about "caking" when it comes in contact with moisture

### Indigenous Liquid Nano Urea vs Imported Urea
- The liquid nano urea produced by IFFCO comes in a half-litre bottle priced at Rs 240, and carries no burden of subsidy currently.
- By contrast, a farmer pays around Rs 300 for a 50-kg bag of heavily subsidised urea.
- The government's fertilizer subsidy payout this financial year will be Rs 2 lakh crore, up 25 per cent from the Rs 1.6 lakh crore it paid last year.

### Indian Farmers Fertiliser Cooperative Limited
- It is one of India's biggest cooperative societies which is wholly owned by Indian Cooperatives.
- Founded in 1967 with just 57 cooperatives, today it is an amalgamation of over 36,000 Indian Cooperatives with diversified business interests ranging from General Insurance to Rural Telecom apart from its core business of manufacturing and selling fertilisers.

### Objective:
- To enable Indian farmers to prosper through timely supply of reliable, high quality agricultural inputs and services in an environmentally sustainable manner and to undertake other activities to improve their welfare.

## HIMAR SYSTEMS

- The US is sending four HIMAR systems to Ukraine

- An artillery rocket is a weapon that is typically propelled by a solid-fuel motor and can carry a variety of warheads.
- In the 1970s, USA developed a new weapon called MLRS, for Multiple Launch Rocket System, designed for use in the event that Russian armored vehicles massed for World War III on the border of Western Europe.
- Pentagon developed the more advanced version of MLRS, a more easily transportable version called HIMARS, for High Mobility Artillery Rocket System, which is based on a wheeled truck that is much lighter.
- Unlike its predecessor, the M142 HIMARS truck carries only one pod of munitions, but it can move much faster on and off-road, and can be shipped on a C-130 cargo plane.
- US is sending four HIMAR systems to Ukraine.

**The difference between a rocket and a missile**
- Generally the word "rocket" is used in a military context to refer to relatively inexpensive unguided weapons powered by solid-fuel motors, while "missile" is generally shorthand for "guided missiles," more expensive and complicated weapons that use movable fins to steer themselves to their targets and can fly much farther.
- The Pentagon has already sent short-range, inexpensive and unguided anti-tank weapons that are classified as rockets to Ukraine, like the AT-4, and the longer-range Javelin, which is a guided missile.
- But in more recent years the military has built weapons it calls "guided rockets" — like GMLRS — which are often older rocket designs upgraded to have guidance systems and movable fins on their nose to steer them.

**How powerful are these rockets?**
- Using the HIMARS and GMLRS together can offer an amount of firepower that is similar to an airstrike — all from a mobile platform.
- The upgrade in explosive power for the Ukrainian military will be profound.

**Does Russia have anything similar?**
- The Russian military has primarily used three types of unguided artillery rockets during the war in Ukraine.
- The largest, the 300 mm Smerch, can fire a guided rocket, which makes it more accurate, and has a range similar to the GMLRS

**Do the U.S. rockets have other advantages?**
- There's one major advantage to the MLRS and HIMARS launchers: They can be fully reloaded within minutes.
- Both vehicles have a winch that allows them to lower an empty pod to the ground, pick up a new, loaded pod, and pull it into place. The Russian launchers must be manually loaded, tube by tube.

## GM Cotton Seed

- Illegal variety occupies about a fifth of GM cotton seed market
- A flourishing illegal trade in a new unapproved herbicide-tolerant variety has come to occupy nearly a fifth of the genetically modified (GM) cotton seeds market in India.
- Farmers' organizations say since the unapproved seeds help them in weed management and cut costs, they would continue to use it.
- The illegal seed manufacturers claim the presence of herbicide trait (HT Bt) in the seeds they sell are capable of controlling pink bollworm.
- Bayer-Mahyco has submitted the application for the approval for HT Bt cotton last year, the regulator (GEAC) is yet to take a call.

**Why HTBt?**
- Since its introduction two decades ago, Bt cotton has led to a dramatic rise in India's cotton yield and thereby, production but over the last two-three years, the yield has come down marginally.

- Since the introduction of Bollgard-I, which was the country's first GM crop approved for commercialisation in 2002, followed by Bollgard II, a pest-resistant variety which protects the crop from bollworm, in 2006, the GEAC has not approved any new varieties.
- HTBt plants allow farmers to spray herbicides to get rid of weeds without harming the plants
- Cotton production in the 2021-22 crop years (July-June) declined 5% to 34 million bales (MB) from its peak of 35.9 MB in 2013-14.

**What should be done?**
- Since the illegal seeds contain unknown and unapproved traits, these could contaminate regular seeds, thereby putting legitimate seed growers at risk
- The government should facilitate faster approval of newly-developed seeds so that farmers get access to quality seeds and thereby, reduce the labour cost

**Genetic Engineering Appraisal Committee**
- GEAC is India's top biotech regulatory agency and a statutory organization under the Environment Protection Act, 1986
- It functions under Ministry of Environment, Forest and Climate Change
- It is responsible for appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- The committee is also responsible for appraisal of proposals relating to release of genetically engineered (GE) organisms and products into the environment including experimental field trials.
- GEAC is chaired by the Special Secretary/Additional Secretary of MoEF & CC and co-chaired by a representative from the Department of Biotechnology (DBT).

## INDIA'S FIRST LIQUID-MIRROR TELESCOPE

- India's first liquid-mirror telescope- International Liquid Mirror Telescope (ILMT) has now entered the commissioning phase and will start scientific observations some time in October this year.

**About the International Liquid Mirror Telescope (ILMT):**
- It is located at an altitude of 2,450 metres on the Devasthal Observatory campus of the Aryabhata Research Institute of Observational Sciences (ARIES) in Nainital district, an autonomous institute under the Department of Science and Technology, Government of India.
- It is the only liquid-mirror telescope operational anywhere in the world.
- It will also hold the unique tag of being the maiden liquid-telescope globally to be designed exclusively for astronomical purposes.
- This international telescope facility is the result of collaborative work between astronomers from Canada, Belgium and India.

**Features of the Telescope:**
- Unlike the conventional telescopes that can be steered to track specific stellar source objects, the ILMT will be stationary.
- It will basically carry out observations and imaging at the zenith, that is, of the overhead sky.
- This is a survey telescope having high potential for discovering newer objects.

## TACKLING ANTIMICROBIAL RESISTANCE

- Health ministers from the Group of Seven (G7) highly industrialised countries recently recognised antimicrobial resistance was a bigger threat to low- and middle-income countries (LMIC) even though fighting it was a shared responsibility.

**Concerns associated:**

- Nearly 700,000 people die of AMR every year.
- The toll can rise to as many as 10 million by 2050 and eat up 3.8 per cent of annual global gross domestic product (GDP).

**Proposed plan by G7**
- To establish new international integrated surveillance systems.
- Improve existing systems to monitor AMR and antibiotics use among humans, animals and plants and the effect on the environment.
- Enhance the scientific basis to inform risk assessments and identify opportunities for mitigation.
- To promote prudent and appropriate use of antimicrobials through 2023 by defining national measurable targets on AMR in line with domestic authorities, including antibiotic usage in human health.
- To prepare the upcoming report on infection prevention and control and present it at the World Health Summit in Berlin in October.

**What is Antibiotic resistance?**
- It is the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others.

**Why is Antimicrobial resistance a silent threat of the future?**
- Antibiotics have saved millions of lives till date. Unfortunately, they are now becoming ineffective as many infectious diseases have ceased to respond to antibiotics.
- Even though antimicrobial resistance is a natural process, the misuse of antibiotics in humans and animals is accelerating the process.
- A large number of infections such as tuberculosis, pneumonia and gonorrhea are becoming very difficult to treat since the antibiotics used for their treatment are becoming less effective.
- Globally, use of antibiotics in animals is expected to increase by 67% by 2030 from 2010 levels. The resistance to antibiotics in germs is a man-made disaster.
- Irresponsible use of antibiotics is rampant in human health, animal health, fisheries, and agriculture.
- Complex surgeries such as organ transplantation and cardiac bypass might become difficult to undertake because of untreatable infectious complications that may result post-surgery.

**Measures Taken to Address AMR (India):**
- National Programme on AMR containment: Launched in 2012.
- National Action Plan on AMR was launched in April 2017.
- AMR Surveillance and Research Network (AMRSN) was launched in 2013.

## WORLD NO TOBACCO DAY

- 31st May is observed as 'World No Tobacco Day' every year to spread awareness around the deadly effects of tobacco consumption.
- The Member States of the World Health Organization created World No Tobacco Day in 1987 to draw global attention to the tobacco epidemic and the preventable death and disease it causes.
- In 1988, Resolution WHO 42.19 was passed, calling for the celebration of World No Tobacco Day, every year on 31 May.
- Theme for 2022: **"Tobacco: Threat to our environment."** This drive aims to create awareness among the public on the detrimental impact of tobacco cultivation, production, distribution, and waste on the environment, besides human health.
- The WHO has selected Jharkhand for the World No Tobacco Day (WNTD) Award-2022.

**Impact of tobacco on environment:**
- About 3.5 million hectares of land are cleared for growing tobacco each year.

- It causes deforestation mainly in the developing nations.
- Tobacco cultivation results in soil degradation, making it infertile to support the growth of other crops or vegetation.
- Tobacco contributes 84 megatons of the greenhouse gas carbon dioxide to the atmosphere every year.
- Around twenty-two billion litres of water is consumed in the production of cigarettes every year.
- Tobacco is a very nutrient-hungry crop, and it depletes soil nutrients more rapidly.

**Tobacco cultivation in India:**
- It is one of the important cash crops.
- Today, India is the second-largest crop producer in the world after China.
- Around 760 million kg of Tobacco is grown in India on about 40 lakh hectares of land.
- The sector provides jobs to millions of people and contributes as much as Rs.22,737 crore as excise duty and Rs.5,969 crore in foreign exchange to the national treasury.

**Impact on health:**
- It is estimated that about 29% of the adult Indian population consumes Tobacco. Most commonly, it is consumed as Smokeless Tobacco Products like khaini, gutkha, and zarda.
- The smokeless forms pose high risks of oral and oesophageal cancer.
- Their consumption by pregnant women can also lead to stillbirth and low birth weight in infants.
- People addicted to smoking are at very high risk of uterine cervix, and bone marrow cancers.
- Tobacco kills more people than tuberculosis, HIV/AIDS, and malaria combined worldwide.
- Tobacco farmers are prone to suffer from a work-related ailment known as "Green Tobacco Sickness" (GTS), which is caused mainly by nicotine absorption via the skin.

**Efforts by Government in this regard:**
- **The Cigarettes and Other Tobacco Products Act 2003 (COTPA 2003):** This Act includes the prohibition of smoking in public places, advertisement of cigarettes and other tobacco products, sale of cigarettes or other tobacco products to anyone below the age of 18 years, and prohibition of selling areas like schools, colleges, etc.
- To make India addiction-free, the Government has launched programmes like **National Tobacco Control Programme and Nasha Mukt Bharat Abhiyaan.**
- **Crop diversification programme:** Farmers are encouraged to replace tobacco crops with less water-consuming alternatives to conserve water and soil.

## DIRECT-2-MOBILE TECHNOLOGY

- The Department of Telecommunications (DoT) and India's public service broadcaster Prasar Bharati are exploring the feasibility of a technology that allows to broadcast video and other forms of multimedia content directly to mobile phones, without needing an active internet connection.
- The technology, called 'direct-to-mobile' (D2M) broadcasting, promises to improve consumption of broadband and utilisation of spectrum.

**What is direct-to-mobile broadcasting?**
- The technology is based on the convergence of broadband and broadcast, using which mobile phones can receive terrestrial digital TV.
- It would be similar to how people listen to FM radio on their phones, where a receiver within the phone can tap into radio frequencies.
- Using D2M, multimedia content can also be beamed to phones directly.
- The idea behind the technology is that it can possibly be used to directly broadcast content related to citizen-centric information and can be further used to counter fake news, issue emergency alerts and offer assistance in disaster management, among other things.
- It can be used to broadcast live news, sports etc. on mobile phones.

- More so, the content should stream without any buffering whatsoever while not consuming any internet data.

**What could be the consumer and business impact of this?**
**For consumers**
- A technology like this would mean that they would be able to access multimedia content from Video on Demand (VoD) or Over The Top (OTT) content platforms without having to exhaust their mobile data, at a nominal rate.
- The technology will also allow people from rural areas, with limited or no internet access, to watch video content.

**For businesses**
- One of the key benefits of the technology is that it can enable telecom service providers to offload video traffic from their mobile network onto the broadcast network, thus helping them to decongest valuable mobile spectrum.
- This will also improve usage of mobile spectrum and free up bandwidth which will help reduce call drops, increase data speeds etc

**What is the government doing to facilitate D2M technology?**
- The DoT has set up a committee to study the feasibility of a spectrum band for offering broadcast services directly to users' smartphones
- Band 526-582 MHz is envisaged to work in coordination with both mobile and broadcast services. DoT has set up a committee to study this band
- Public service broadcaster Prasar Bharati had last year announced collaboration with IIT Kanpur to test the feasibility of the technology.

**Possible challenges to the technology's rollout?**
- Technology is still at a nascent stage
- Bringing key stakeholders like mobile operators onboard will be the "biggest challenge" in launching D2M technology on a wide scale
- A mass roll out of the technology will entail changes in infrastructure and some regulatory changes

## RADIO-FREQUENCY IDENTIFICATION (RFID)

- Baggage tags equipped with radio-frequency identification (RFID) will soon be available at Delhi's Indira Gandhi International Airport, marking a first of its kind for the country.

**What is RFID?**
- Radio Frequency Identification is a wireless tracking system that consists of tags and readers.
- Radio waves are used to communicate information/identity of objects or people.
- The tags can carry encrypted information, serial numbers and short descriptions.

## Basic RFID System



**Computer Database**
Data is transmitted into the RFID database where it can be stored and evaluated.

**RFID Reader**
Connected to the antenna wirelessly and receives data from the RFID tag.

**RFID Tag**
Attached to assets to transmit stored data to the antenna.

**Antenna**
Receives the stored data from the tag and transmits that data to an RFID reader.
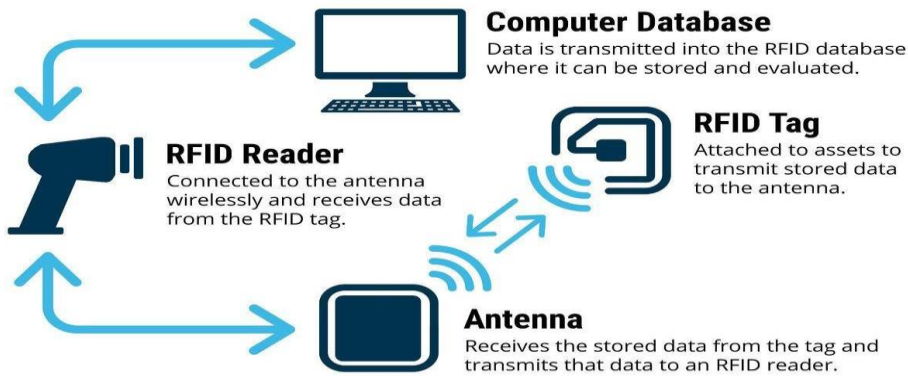
**Types – Passive and Active RFID tags:**
- Active RFIDs use their own power source, mostly batteries.
- Passive RFIDs are activated through the reader using the electromagnetic energy it transmits.

**How do they work?**
- RFID tags use an integrated circuit and an antenna to communicate with a reader using radio waves at several different frequencies – low frequency (LF), high frequency (HF), and ultra-high frequency (UHF).
- The message sent back by the tag in form of radio waves is translated into data and analysed by the host computer system.
- Unlike Barcodes, RFIDs do not require direct line of sight to identify objects.

**What is a Barcode?**
- A barcode is a printed series of parallel bars or lines of varying width used for entering data into a computer system.
- The bars are black on a white background and vary in width and quantity depending on the application.
- The bars represent the binary digits zero and one, which represent the digits zero to nine processed by a digital computer.
- These barcodes are scanned using special optical scanners known as barcode readers.
- The majority of these codes use only two different widths of bars, however some use four.
- One of the most well-known examples of a barcode is the QR code.
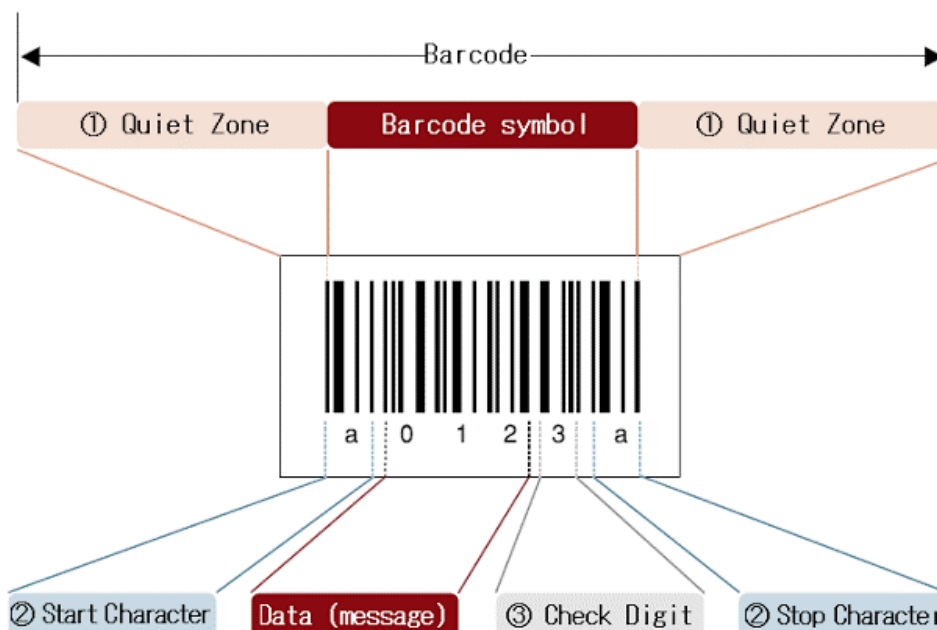
**Differences between RFID and Barcode:**
1. RFID uses radio waves to communicate that do not require line of sight in order to obtain the data; barcodes use light to read the black-and-white pattern printed on the sticky tag.
2. An RFID tag can communicate with a powered reader even when the tag is not powered.
3. When printed on paper or sticky labels, barcodes are more susceptible to wear and breakage, which can affect their readability. RFID tags are more durable than barcodes.
4. In contrast to barcode scanners, RFID scanners can process dozens of tags in a single second.
5. Barcodes are simple and easy to copy or counterfeit, whereas RFID is more complicated and difficult to replicate or counterfeit.
6. RFID tags are expensive compared to barcodes.

## URBAN AGRICULTURE

- Urban agriculture can help make cities sustainable and liveable
- Urban agriculture is the practice of farming in urban and peri-urban areas.
- Farming connotes a wide range of food and non-food products that can be cultivated or grown, including rearing livestock, aquaculture and bee-keeping.

**Need for Urban Agriculture**
- Urban areas across the world house at least 55 per cent of the world's population and consume 80 per cent of the food produced globally
- India is rapidly urbanising and is estimated to host 50 per cent of its population in cities by
- In order to sustain these huge population and face climate change it is important that urban areas becomes sustainable and liveable
- Urban agriculture provides food security and financial security to urban dwellers

**Benefits of Urban Agriculture**
- **Business Growth:** Urban farming helps stimulate the local economy through job creation, income generation, and the growth of small businesses.
- **Job Creation:** Urban farms can offer valuable skills and education in addition to a steady source of income to many unemployed, even if it is seasonal work.
- **Urban Redevelopment:** Unused lands and wastelands can be used for cultivation purposes. It creates more green space and reduces pollution.
- **Health and Wellness:** Urban farming creates fresh produce closer to where it's ultimately consumed. Food from urban farms is far more likely to be perfectly ripe, more nutritious, and produced in season.
- **Less Food Waste:** People produce only what they need. This reduces food wastage to a large extent.
- **Environmental Management:** urban agriculture has a significant role in urban environmental management as it can combat urban heat island effects and function as an urban lung in addition to providing visual appeal
- **Waste Management:** since cities are struggling with waste management and disposal, urban agriculture can provide some help to deal with it.
- The use of suitably treated waste water for urban agriculture can reduce demand for fresh water and help in waste water disposal.
- Moreover, organic waste from the city can be composted and used in food and flower production

**Way Forward**
- Urban farming can be a favorable way for ensuring food security in India and around the world in the future.
- Proper Urban land-use planning (ULP), Institutional support, awareness of the benefits associated with urban agriculture, and financial and technological support from the government will attract the city dwellers and help them to move forward with the concept of urban agriculture in India.

- Progressive growth of urban agriculture can act as an urban regeneration tool for the cities by providing social interaction and increasing job opportunities and environmental benefits to the urban areas across the globe.

## CERAMIC IMPLANTS CAN REGENERATE BROKEN BONES

- A bone replacement following a fracture, it is often based on a metal part.
- But metal parts are sometimes toxic over time, and will not help the original bone regrow.
- The Tokyo Medical and Dental University (TMDU) research found that, Calcium phosphate ceramics are in principle an ideal alternative to conventional metals because bone can eventually replace the ceramic and regrow.
- Calcium phosphate ceramics are substitutes for the bone mineral hydroxyapatite.
- TMDU and collaborators have studied the transformation of a ceramic into the bone mineral.
- However, applications of such ceramics in medical settings have been limited, because there is insufficient control over the rate of absorption and replacement by bone after implantation.
- The researchers have reported that most of the studied ceramics underwent chemical transformations into particulate or fibrous hydroxyapatite within a few days
- Now with specific chemical knowledge on how to tailor the rate of hydroxyapatite growth from calcium phosphate ceramics – the knowledge will be useful for bench researchers and medical practitioners to more effectively collaborate on tailoring bone reformation rates under medically relevant conditions.

## ELECTRIC VERTICAL TAKEOFF AND LANDING (eVTOL)

- The Government of India is exploring the possibility of inviting manufacturers of Electric Vertical Takeoff and Landing (eVTOL) aircraft to set up base in India.

**What is eVTOL?**
- As the acronym suggests, an electric vertical take-off and landing (eVTOL) aircraft is one that uses electric power to hover, take off, and land vertically.
- Most eVTOLs also use what is called as distributed electric propulsion technology which means integrating a complex propulsion system with the airframe.
- It has grown on account of successes in electric propulsion based on progress in motor, battery, fuel cell and electronic controller technologies
- Thus, eVTOL is one of the newer technologies and developments in the aerospace industry.
- eVTOL is being described as "a runway independent technological solution" for the globe's transportation needs – it opens up new possibilities which aircraft with engines cannot carry out in areas such as manoeuvrability, efficiency and even from the environmental point of view.
- The global market for eVTOLs was put at $8.5 million in 2021 and is to grow to $30.8 million by 2030. The demand will be on account of green energy and noise-free aircraft, cargo carrying concepts and the need for new modes of transport.

**Origin**
- It all began in 2009-10 by NASA researcher Mark D. Moore who came up with the concept of a personal (one man) air vehicle "Puffin"
- In his paper, "NASA Puffin Electric Tailsitter VTOL Concept", Moore described "electric propulsion as offering dramatic new vehicle mission capabilities, but the only penalising characteristic" being "the current energy storage technology level".

**What are the challenges?**
- As the technology so far is a mix of unpiloted and piloted aircraft, the areas in focus include "crash prevention systems".
- There are also issues such as ensuring safety in case of powerplant or rotor failure.
- Aircraft protection from cyberattacks is another area of focus.

- Operating in difficult terrain, unsafe operating environments and also bad weather are cause of concern.

**Indian Scenario**
- The government of India has asked the market players to look into the Indian market.
- Confederation of Indian Industry (CII) Taskforce for Urban Air Mobility has suggested regulatory authorities in India to look at:
- Formulating regulations for pilotless vehicles, airworthiness certifications, and the need for a pilot's licence;
- Implementing efficient energy management systems, onboard sensors, collision detection systems and advanced technologies such as artificial intelligence;
- Having in place infrastructural support such as take-off and landing zones, parking lots, charging stations and what are called vertiports;
- Creating a robust air traffic management system that is integrated with other modes of transportation, and putting in place a database to ensure operational and mechanical safety.

## TIANGONG SPACE STATION

- Three Chinese astronauts docked at the country's space station on Sunday.
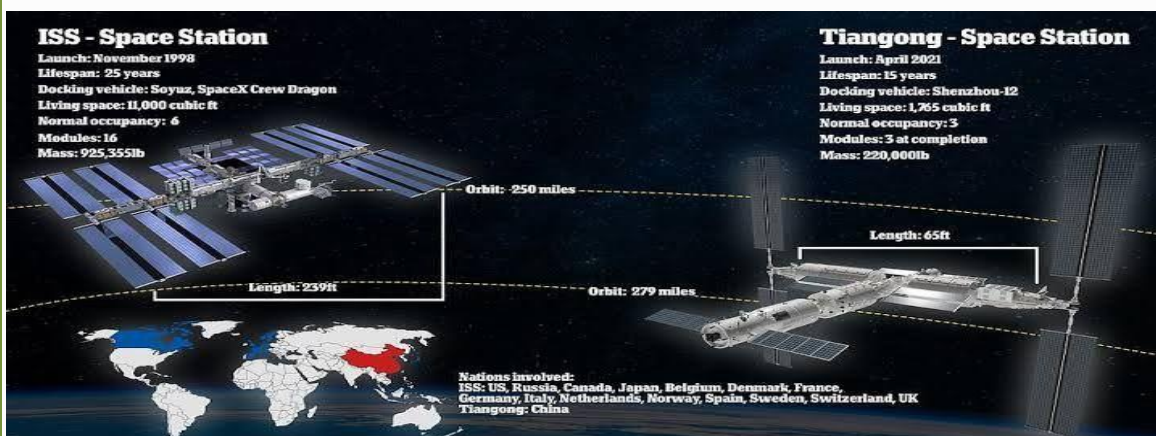
**About China's Space Station:**
- The space station will operate in low-Earth orbit at an altitude of 340-450 km above Earth's surface.
- Tiangong, which means"heavenly palace", is expected to become fully operational by the end of the year and is set to be operational for at least 10-15 years

**Significance of the Space Station:**
- The low orbit space station would be the country's eye from the sky, providing round the clock bird's-eye view for its astronauts on the rest of the world.
- It shall aid China's aim to become a major space power by 2030.
- It replicates the International Space Station (ISS), from which China was excluded.

**Comparing with the International Space Station:**
- The ISS programme is a joint project between five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada)
- ISS is now the largest human-made body in low Earth orbit. The Chinese station will be smaller and similar in design, meaning it will have limited capacity for astronauts (three versus six on ISS).
- The completed station will be similar to the Soviet Mir station that orbited Earth from the 1980s until 2001.
- But the ISS is scheduled to be decommissioned after 2024 to leave place for the Lunar Gateway, a small outpost that will orbit the Moon. This is an international initiative part of the US-led Artemis Programme that again sees China excluded.



ISS - Space Station
Launch: November 1998
Lifespan: 25 years
Docking vehicle: Soyuz, SpaceX Crew Dragon
Living space: 11,000 cubic ft
Normal occupancy: 6
Modules: 16
Mass: 925,355lb

Tiangong - Space Station
Launch: April 2021
Lifespan: 15 years
Docking vehicle: Shenzhou-12
Living space: 1,765 cubic ft
Normal occupancy: 3
Modules: 3 at completion
Mass: 220,000lb

Orbit: 250 miles
Length: 239ft
Orbit: 279 miles
Length: 65ft

Nations involved:
ISS: US, Russia, Canada, Japan, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK
Tiangong: China

**Concerns about Chinese monopoly?**

- Until the gateway is launched, however, Tiangong – which will be placed in lower Earth orbit and have an expected life of 15 years – will probably remain the only functioning space station. Some worry this makes it a security threat, arguing its science modules could be easily converted for military purposes, such as spying on countries.

**Others planned Space Stations:**

- **Lunar Gateway:** involving four of the ISS partner agencies: NASA, European Space Agency (ESA), Japan Aerospace Exploration Agency (JAXA), and Canadian Space Agency (CSA). It is planned to be both the first space station beyond low Earth orbit and the first space station to orbit the Moon.
- **The Russian Orbital Service Station** is scheduled to begin construction in 2025.
- **Starlab** is the name given to the planned LEO space station designed by Nanoracks for commercial space activities uses.
- **Indian Human Spaceflight Programme:** India plans to deploy a 20-tonne space station as a follow-up programme of the Gaganyaan mission, it will be deployed in 5–7 years after the completion of the Gaganyaan project.

## AGNI IV

- India successfully tested the Intermediate-Range Ballistic Missile (IRBM) Agni-4, which met all parameters
- The successful test was part of routine user training launches carried out under the aegis of the Strategic Forces Command
- The successful test reaffirms India's policy of having a 'Credible Minimum Deterrence'

**Agni-IV**

- Agni-IV is the fourth in the Agni series of missiles which was earlier known as Agni II prime. Agni-IV bridges the gap between Agni II and Agni III.
- CLASS: Intermediate-range ballistic missile (IRBM)
- It is surface to surface missile
- WARHEAD: Nuclear or conventional
- RANGE: 3,000 – 4,000 km
- PROPULSION: Two-stage solid propellant
- PAYLOAD: 1,000 kg

## LITHIUM

- With the EV industry growing rapidly, the demand for lithium, an essential resource for EV battery makers, has surged along.

**Significance:**

- It is estimated that if the entirety of ore from the African mines are extracted, it will be sufficient to meet the demand for at least 27.78 million vehicles with 60 kWh batteries.

**About Lithium**

- It is a soft, silvery-white metal. Under standard conditions, it is the lightest metal and the lightest solid element.
- It is highly reactive and flammable, and must be stored in mineral oil. It is an alkali metal and a rare metal.

**Key Characteristics and Properties:**

- It has the highest specific heat capacity of any solid element.
- Lithium's single balance electron allows it to be a good conductor of electricity.

- It is flammable and can even explode when exposed to air and water.

**Uses:**
- Lithium is a key element for new technologies and finds its use in ceramics, glass, telecommunication and aerospace industries.
- The well-known uses of Lithium are in Lithium ion batteries, lubricating grease, high energy additive to rocket propellants, optical modulators for mobile phones and as convertor to tritium used as a raw material for thermonuclear reactions i.e. fusion.

**Prescribed substance:**
- The thermonuclear application makes Lithium as "Prescribed substance" under **The Atomic Energy Act 1962** which permits AMD for exploration of Lithium in various geological domains of the country.
- Under **the Atomic Energy Act, 1962**, "Prescribed Substance" means any substance including any mineral which the Central Government may, by notification, prescribe, being a substance which in its opinion is or may be used for the production or use of atomic energy or research into matters connected therewith and includes uranium, plutonium, thorium, beryllium, deuterium or any of their respective derivatives or compounds or any other materials containing any of the aforesaid substances.

## NEXT-GENERATION CORVETTES

- The Defence Acquisition Council (DAC) has given the Acceptance of Necessity (AoN) for several capital acquisition projects of the Indian defence forces.
- This includes the procurement of next-generation Corvettes for the Indian Navy at an approximate cost of Rs 36,000 crore.

**What is a Corvette?**
- A Corvette is the smallest class of naval ships and it falls below the warship class of a frigate.
- These are highly agile ships and are categorised as missile boats, anti-submarine ships, coastal patrol crafts and fast attack naval vessels.
- The word corvette itself is derived from French and Dutch origin.
- Corvettes date back to the 18th and the 19th century when they were extensively used in the naval warfare duels that were fought at high seas
- During World War II, the term Corvette was used to describe vessels which had anti-submarine roles assigned to them.
- Modern Corvettes can go up to 2,000 tons in displacement which helps in keeping them agile.

**What kind of Corvettes does the Indian Navy possess?**
- The Indian Navy at present has the Kamorta Class Corvettes, which are also known as Project 28.
- These ships have an anti-submarine role and are manufactured at Garden Reach Shipbuilders and Engineers in Kolkata.
- The four Kamorta Class Corvettes that the Indian Navy possesses are named INS Kamorta, INS Kadmatt, INS Kiltan and INS Kavaratti.
- The first of these was commissioned in 2014 and the last one in 2020.

**What new capabilities will the new generation Corvettes have?**
- The next-generation Corvettes will be manufactured for various roles like surveillance missions, escort operations, deterrence, surface action group operations, search and attack and coastal defence.
- As per the AoN accorded by the DAC, these next-generation generation Corvettes will be constructed based on new in-house design of the Indian Navy using latest technology of ship buildings and would contribute to further the government's initiative of Security and Growth for all in the region (SAGAR).
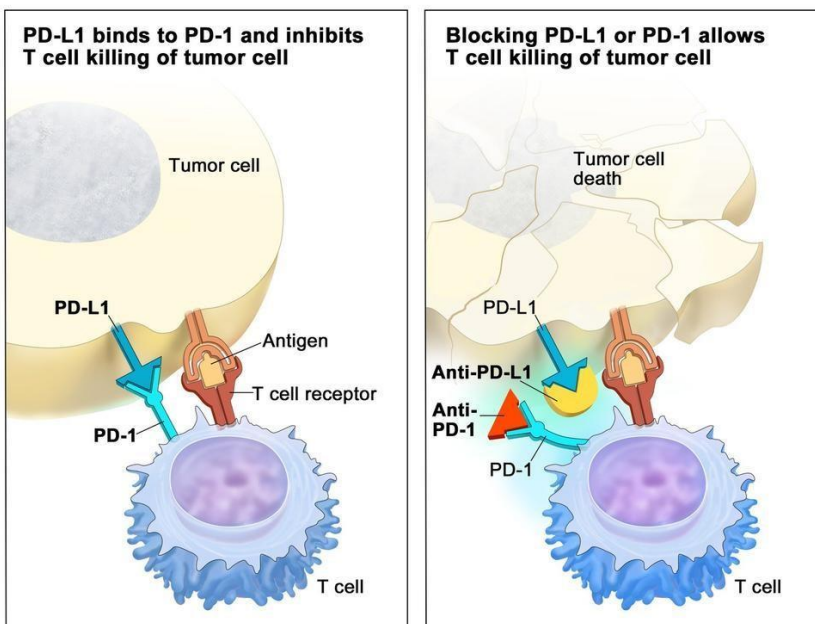
## TREATMENT OF MISMATCH REPAIR DEFICIENT CANCER

- In a medical trial, 12 patients in the United States were completely cured of rectal cancer without requiring any surgery or chemotherapy.
- The trial used a **monoclonal antibody called Dostarlimab** every three weeks for six months for the treatment of a particular kind of stage two or three rectal cancer.
- The trial showed that **immunotherapy alone** – **without any chemotherapy, radiotherapy, or surgery** that have been staples of cancer treatment – could completely cure the patients with a particular kind of rectal cancer called 'mismatch repair deficient' cancer".
- No cases of progression or recurrence had been reported during the follow-up

**What is this deficiency, and how was it cured?**
- '**Mismatch repair deficient' cancer is most common among colorectal, gastrointestinal, and endometrial cancers**.
- Patients suffering from this condition **lack the genes to correct typos in the DNA that occur naturally while cells make copies.**
- The **immunotherapy belongs to a category called PD1 blockades** that are now recommended for the treatment of such cancers rather than chemotherapy or radiotherapy.
- PD1 is a **type of protein that regulates certain functions of the immune system, including by suppressing T cell activity**, and **PD1 blockade therapy looks to release the T cells from this suppression.**
- **By giving the PD1 blockades, we release and T cells to destroy the cancerous growth**

**If PD1 therapy was already in use, what's new in the trial?**
- Earlier, **this therapy was used post-surgery**, but the study has shown that a surgery may not be required.
- Although the therapy is usually used for cancers that have metastasised (spread to locations other than where the cancer formed), it is now recommended for all mismatch repair deficient cancers as they result in quicker improvement and lesser toxicity as compared to traditional chemotherapy and radiotherapy.
- This study shows that even the surgery was not needed in these patients



**Cost is a concern**
- Immunotherapies are expensive and unaffordable for most people in India
- An immunotherapy treatment can cost around Rs 4 lakh per month, with patients needing the treatment for six months to a year.

## FAST RADIO BURST

- In a study, astronomers have reported a fast radio burst (FRB) whose characteristics are different from almost all other FRBs previously detected, except one.
- FRBs are bright flashes of light that appear for a few milliseconds and then vanish. Since the first FRB was discovered in 2007, 140 more were discovered until June 2021
- The new study in Nature describes FRB 20190520B, first discovered in 2019, is different is different from other FRBs, it emits frequent, repeating bursts of radio waves. And between bursts, it constantly emits weaker radio waves.
- Only one FRB has been previously observed to behave this way. Called FRB 121102, that was discovered in 2012.
- Calling the behaviour strange the US National Radio Astronomy Observatory (NRAO) stated that the discovery raises new questions about the nature of these mysterious objects and also about their usefulness as tools for studying the nature of intergalactic space.

### What are Fast Radio Bursts?

- Fast Radio Bursts are brief (few millisecond) bursts of radio waves coming from far beyond our Milky Way galaxy.
- The phenomenon was first reported in 2007
- A defining property of these bursts is their dispersion the bursts produce a spectrum of radio waves, and as the waves travel through matter, they spread out or disperse with bursts at higher radio frequencies arriving at telescopes earlier than those at lower frequencies.
- This dispersion allows researchers to learn about two important things:
- They can measure this dispersion to learn about the stuff that radio bursts pass through as they travel toward Earth
- They can indirectly determine how far apart things are.

### Origin of FRBs:

- FRBs have been spotted in various and distant parts of the universe, as well as in our own galaxy. Their origins are unknown and their appearance is highly unpredictable.

## INDIA'S FIRST COVID-19 VACCINE FOR ANIMALS

- The Agriculture Ministry unveiled India's first Covid-19 vaccine for animals.
- Developed by the Hisar-based National Research Centre on Equines, the vaccine, called Ancovax, can protect animals against the Delta and Omicron variants of SARS-CoV-2.
- This is the first Covid-19 vaccine for animals developed in India.
- There were reports from Russia last year that that country, too, had developed a vaccine against animals such as dogs, cats, minks, and foxes.

### HOW IT WORKS

- Ancovax can be used in dogs, lions, leopards, mice, and rabbits.
- It is an inactivated vaccine developed using an infectious part of the Delta variant.
- In addition, it uses Alhydrogel as an adjuvant to boost the immune response.

### THE NEED:

- There have been reports of Covid-19 infection in several animals, including dogs and cats.
- The vaccine can protect animals in the zoo.
- The animals develop similar symptoms to humans – cough, cold, fever, and lung lesions
- It can also prevent transmission from companion animals to the humans
- The aim of the vaccine is to protect endangered animals

## ABNORMAL' DINOSAUR EGG IN INDIA

- A team of researchers from the University of Delhi has discovered a unique set of fossilised dinosaur eggs, with one egg nesting within the other at the Dinosaur Fossil National Park, in Dhar District of Madhya Pradesh.
- While eggs-within-eggs are rare phenomena, they are so far known to occur only in birds and have never known in reptiles.
- This discovery brings out newer connections between reptilian and avian evolution.
- Dinosaurs of the Sauropod family were among the largest land animals that have ever lived and were widespread millions of years ago in the territory that is now India.
- Fossils of these animals have been found in Gujarat, Madhya Pradesh as well as Meghalaya.
- Latest findings, documented 52 titanosaurid sauropod nests near Padlya village close to Bagh town in Madhya Pradesh. One of these nests consisted of 10 eggs, one of which was the "abnormal" egg.
- The egg has two continuous and circular eggshell layers separated by a wide gap like that observed in birds.
- It was believed that dinosaurs had a reproductive function similar to that of turtles and other reptiles (unsegmented oviduct) in contrast to segmented reproductive tract of crocodiles and birds with separate regions of membrane and shell deposition.
- The finding of ovum-in-ovo egg from a titanosaurid nest opens up the possibility that sauropod dinosaurs had an oviduct morphology similar to those of crocodiles or birds and they may have adapted to a mode of an egg-laying characteristic of birds
- The new find highlights the fact that Central and Western India hold great potential for dinosaur fossils which may offer important information on dinosaur diversity, nesting behaviour and reproductive biology, the authors note.

## RAMSAY HUNT SYNDROME

- Ramsay Hunt syndrome (herpes zoster oticus) occurs when a shingles outbreak affects the facial nerve near one of your ears.
- In addition to the painful shingles rash, Ramsay Hunt syndrome can cause facial paralysis and hearing loss in the affected ear.
- Ramsay Hunt syndrome is caused by the same virus that causes chickenpox – the varicella-zoster virus (VZV)
- After chickenpox clears up, the virus still lives in your nerves.
- Years later, it may reactivate. When it does, it can affect your facial nerves

**Symptoms**
- The two main signs and symptoms of Ramsay Hunt syndrome are:
- A painful red rash with fluid-filled blisters on, in and around one ear
- Facial weakness or paralysis on the same side as the affected ear

**Risk factors**
- Ramsay Hunt syndrome can occur in anyone who has had chickenpox.
- It's more common in older adults, typically affecting people older than 60.
- Ramsay Hunt syndrome is rare in children.
- Ramsay Hunt syndrome isn't contagious.
- However, reactivation of the varicella-zoster virus can cause chickenpox in people who haven't previously had chickenpox or been vaccinated for it.
- The infection can be serious for people who have immune system problems.

## FORTIFIED RICE

- Centre begins supply of fortified rice in 90 districts from April 1

- The Centre has started distribution of fortified rice through ration shops from April 1 in some 90-odd districts out of 291 targeted for the entire year under phase II of PM-POSHAN Abhiyan
- The first phase was launched in October 2021 under which fortified rice was supplied through Integrated Child Development Services (ICDS) and Pradhan Mantri Poshan Shakti Nirman-PM POSHAN
- Fortified rice is made as per the standards fixed by the food safety regulator FSSAI, which has prescribed blending rice with three micronutrients – Iron, Folic Acid and Vitamin B12.

**Need for rice fortification**
- India has very high levels of malnutrition among women and children. According to the Food Ministry, every second woman in the country is anemic and every third child is stunted.
- Malnutrition costs India at least ₹77,000 crore annually in terms of lost productivity, illness and death.
- The country loses about 1 per cent of GDP (₹2.03 lakh crore) due to iron deficiency
- One rupee spent on nutritional interventions in India could generate ₹34.1-Rs 38.6 in public economic returns
- Rice is one of India's staple foods, consumed by about two-thirds of the population. Per capita rice consumption in India is 6.8 kg per month. Therefore, fortifying rice with micronutrients is an option to supplement the diet of the poor.

**POSHAN Abhiyaan**
- POSHAN Abhiyaan is the flagship program to improve nutritional outcomes for children, pregnant women, and lactating mothers in India.
- It is also called the National Nutrition Mission.

**Salient Features of the POSHAN Abhiyan**
- The POSHAN (Prime Minister's Overarching Scheme for Holistic Nutrition) Abhiyaan spreads awareness towards the problems pertaining to malnutrition and brings viable solutions with it.
- Implementation status reports of the Abhiyaan are submitted by NITI Aayog every six months.
- The implementation of POSHAN Abhiyaan is carried out through the Technical Support Unit (TSU) established at NITI Aayog, which will also provide research, policy, and technical support for the program.
- As the mission is expected to eradicate malnutrition by 2022, it has been taken up by multiple ministries. This helps in expanding the outreach of the mission and thereby facilitating its implementation.
- Some specific targets of the program are reducing stunting, anemia, under-nutrition, and low birth weight.

**Specific Targets of the POSHAN Abhiyan**
- The POSHAN Abhiyan aims to target the following specifically:
- Reduce stunting by 2% annually.
- Reduce under-nutrition by 2% annually.
- Reduce anemia by 3% annually.
- Reduce low birth weight by 2% annually.

## Type 1 Diabetes

- Recently, the Indian Council of Medical Research (IMCR) released guidelines for the diagnosis, treatment, and management for type-1 diabetes.
- This is the first time the ICMR has issued guidelines specifically for type 1 diabetes, which is rarer than type 2 — only 2% of all hospital cases of diabetes in the country are type 1 — but which is being diagnosed more frequently in recent years.
- Type 1diabetes is a condition where the pancreas completely stops producing insulin, the hormone responsible for controlling the level of glucose in blood by increasing or decreasing absorption to the liver, fat, and other cells of the body.
- Type 1 diabetes is predominantly diagnosed in children and adolescents.
- Although the prevalence is less, it is much more severe than type 2.

- Unlike type 2 diabetes where the body produces some insulin and which can be managed using various pills, if a person with type 1 diabetes stops taking their insulin, they die within weeks. The body produces zero insulin.

## How rare is it?
- There are over 10 lakh children and adolescents living with type 1 diabetes in the world, with India accounting for the highest numbers.
- Of the 5 lakh people living with type 1 diabetes in India, 90,000 to 1 lakh are under the age of 14 years. For context, the total number of people in India living with diabetes was 7.7 crore in 2019

## Who is at risk of type 1 diabetes?
- The exact cause of type 1 diabetes is unknown, but it is thought to be an auto-immune condition where the body's immune system destroys the islets cells on the pancreas that produce insulin.
- Genetic factors play a role in determining whether a person will get type-1 diabetes.
- The presence of certain genes is also strongly associated with the disease.
- For example, the prevalence of genes called DR3-DQ2 and DR4-DQ8 is 30-40% in patients with type 1 diabetes as compared to 2.4% in the general population.

## What are the guidelines?
- The guidelines provide details on diet and exercise, insulin monitoring, and prevention and treatment of complications such as retinopathy, kidney disease, and nerve disease.

## WEB 5.O

- **Former Twitter CEO** Jack Dorsey recently **announced his vision for a new decentralized web platform that is being called Web 5.0**

## What do the terms Web 1.0, Web 2.0 and Web 3.0 mean?
- Web 1.0 was the first generation of the global digital communications network.
- It is often referred to as the "read-only" Internet made of static web-pages that only allowed for passive engagement.
- The next stage in the evolution of the web was the "read and write" Internet.
- Users were now able to communicate with servers and other users leading to the creation of the social web. This is the World Wide Web that we use today.
- Web 3.0 is an evolving term that is used to refer to the next generation of Internet – a "read-write-execute" web – with decentralization as its bedrock.
- It speaks about a digital world, built leveraging the blockchain technology, where people are able to interact with each other without the need of an intermediary.
- Web 3.0 will be driven by Artificial Intelligence and machine learning where machines will be able to interpret information like humans.

## What is Web 5.0?
- Web 5.0 is aimed at "building an extra decentralized web that puts you in control of your data and identity".
- Simply put, Web 5.0 is Web 2.0 plus Web 3.0 that will allow users to 'own their identity' on the Internet and 'control their data'.
- Both Web 3.0 and Web 5.0 envision an Internet without threat of censorship – from governments or big tech, and without fear of significant outages.

## What are the use cases for Web 5.0?
- The control of identity
- Giving users control over their own data

## HAPLOPTYCHIUS SAHYADRIENSIS

- India's newest recorded snail named after Western Ghats
- The Western Ghats of Maharashtra have yielded a carnivorous land snail new to the world of science.
- The Haploptychius Sahyadriensis is endemic to the Vishalgad Conservation Reserve in Maharashtra's Kolhapur district
- The Haploptychius Sahyadriensis, recorded from the northern Western Ghats of Maharashtra, is the third member of the genus Haploptychius.
- The other two – H. Andamanicus and H. Pfeifferi – were recorded in the Andaman and Nicobar Islands in the 1860s.
- It is named after the type locality of the species in the northern part of the Western Ghats, which is Sahyadri in Sanskrit
- The 'Sahyadri snail' is distinguished from other Indian and Southeast Asia's Haploptychius in having a sub-oblique helical shell, low spire and presence of a strong parietal lamella.
- The new species also has a unique genital anatomy

## LaMDA

- A senior engineer at Google claimed that the company's artificial intelligence-based chatbot Language Model for Dialogue Applications (LaMDA) had become "sentient"
- The claims have spurred a debate on the capabilities and limitations of AI-based chatbots

**What is LaMDA?**
- LaMDA is short for 'Language Model for Dialogue Applications', Google's modern conversational agent enabled with a neural network capable of deep learning.
- Google first announced LaMDA at its flagship developer conference I/O in 2021 as its generative language model for dialogue applications which can ensure that the Assistant would be able to converse on any topic.
- In simple terms, LaMDA can have a discussion based on a user's inputs
- In 2022 Google announced LaMDA 2.0 which further builds on LaMDA 1.0.
- The new model can possibly take an idea and generate "imaginative and relevant descriptions", stay on a particular topic even if a user strays off-topic, and can suggest a list of things needed for a specified activity.

**What is a neural network?**
- A neural network is an AI tech that attempts to mimic the web of neurons in the brain to learn and behave like humans.

**Is the technology dangerous?**
- The challenges of AI metamorphosing into sentient are far in the future; however, unethical AI perpetuating historical bias and echoing hate speech are the real dangers to watch for.
- While we imagine the machine to have no bias, AI software learning from historical data could inadvertently perpetuate discrimination against the marginalized community.

## 5TH GENERATION (5G)

- The Union Cabinet has approved the auction of airwaves capable of offering fifth generation, or 5G.
- Taking the first step towards rolling out 5G services, the government has invited bid applications for spectrum auctions starting in July after it proposal to auction over 72,000 megahertz (MHz), or 72 GHz, of airwaves with a validity period of 20 years.
- The auction will be held for spectrum in the frequencies of 600 MHz, 700 MHz, 800 MHz, 900 MHz, 1,800 MHz, 2,100 MHz, 2,300 MHz, 3,300 MHz and 26 GHz

- It is expected that the Mid and High band spectrum will be utilised by telecom service providers to roll out 5G technology-based services capable of providing speed and capacities which would be about 10 times higher than what is possible through the current 4G services

**5th generation**
- 5G is the 5th generation mobile network. It is a new global wireless standard after 1G, 2G, 3G, and 4G networks.
- It enables a new kind of network that is designed to connect virtually everyone and everything together including machines, objects, and devices.
- Internet speeds in the high-band spectrum of 5G has been tested to be as high as 20 Gbps

**Different Bands of 5G:**
- **5G mainly works in 3 bands**, namely low, mid and high frequency spectrum — all of which have their own uses as well as limitations.
- **Low Band Spectrum:** In terms of coverage and speed of Internet and data exchange, the maximum speed is limited to 100 Mbps
- **Mid Band Spectrum:** It offers higher speeds compared to the low band, but has limitations in terms of coverage area and penetration of signals.
- This band may be used by industries and specialised factory units for building captive networks that can be moulded into the needs of that particular industry.
- **High Band Spectrum:** It offers the highest speed of all the three bands, but has extremely limited coverage and signal penetration strength.

## PRITHVI-II

- India successfully test-fired it's indigenously developed nuclear capable Prithvi-II missile

**Prithvi Missile**
- Prithvi is a tactical surface-to-surface short-range ballistic missile (SRBM) developed by Defence Research and Development Organisation (DRDO) of India under the Integrated Guided Missile Development Program (IGMDP).
- The Prithvi missile project encompassed developing three variants for use by the Indian Army, Indian Air Force and the Indian Navy.
- Prithvi I (SS-150) – Army version (150 km range with a payload of 1,000 kg)
- Prithvi II (SS-250) – Air Force version (350 km range with a payload of 500 kg)
- Prithvi III (SS-350) – Naval version (350 km range with a payload of 1,000 kg)
- Prithvi II class is also a single-stage liquid-fueled missile having a maximum warhead mounting capability of 500 kg, with an extended range of 250 km
- The state-of-the-art missile uses advanced inertial guidance system with manoeuvring trajectory to hit its target.

## THE FRAGILE STATE OF NUCLEAR DISARMAMENT

- The **Stockholm International Peace Research Institute (SIPRI)** released its yearbook highlighting some trends of the past year in international security.

**Key Findings**
**What have been the trends in military spending?**
- During 2012-2021, military spending as a percentage of gross domestic product has largely been stable.
- Russia leads the charge in absolute numbers of nuclear inventory (5977 against the U.S.'s 5428), however it is the United States that has the largest number of deployed warheads (1744 against Russia's 1588).

- The U.K. has 225 nuclear weapons in its inventory, while France has 290, China has 350, India has 160, and Pakistan has 165.

**Global Arms Imports**
- Military modernisation is seen to be a global trend.
- India was the top weapons importer during the 2017-2021 period.
- Other countries to feature in the top five arms importers list include Saudi Arabia, Egypt, China, and Australia.
- According to SIPRI, these five nation states account for 38% of total global arms import.

**What are the key developments/concerns flagged by the yearbook?**
- The yearbook mentions low level border clashes between India and Pakistan, the civil war in Afghanistan, and the armed conflict in Myanmar as some of the worrying indicators of an unstable system.
- It also highlighted three causes of concern trends: Chinese-American rivalry, involvement of state and non-state actors in multiple conflicts, and the challenge that climatic and weather hazards pose.
- The Russian invasion of Ukraine has raised some serious concern because of the continuous rhetoric from the Kremlin over them not shying away from the use of nuclear weapons.
- China's recent activities surrounding construction of 300 new nuclear missile silos have also been turning heads.
- The report claimed that Iran's military budget grew to $24.6 billion, growing for the first time in four years.

**What is the general attitude among countries about existing nuclear and arms related treaties?**
- The leaders of the P5 countries (China, France, Russia, the U.K. and the U.S.) issued a joint statement affirming the belief that "a nuclear war cannot be won and must never be fought".
- This highlights collective belief that bilateral and multilateral arms control agreements and commitments were indeed important.
- The dichotomy of this sentiment against the upward trend in absolute numbers of arms and nuclear arsenals is rather unsettling.
- Even with these upward trends, the nation states are making sure to remain well within the ambit of what the treaties and agreements ask for.

**What lies ahead?**
- A strong political opposition would be needed to help keep the ruling dispensation in check.
- Furthermore, the two largest nuclear weapons holding states need to take on a more engaging role in the international arena.
- Nations should opt for peaceful resolution through negotiation.

## BANNING SINGLE-USE PLASTIC

- The Centre has banned the use of 'single-use-plastic' from July 1 and now defined a list of single-use plastic items that will be banned from this date.

**What does the Notification say?**
- **As per MoEFCC**: The manufacture, import, stocking, distribution, sale and use of following single-use plastic, including polystyrene and expanded polystyrene, commodities shall be prohibited with effect from the 1st July, 2022.

**What is single-use plastic?**
- As the name suggests, it refers to plastic items that are used once and discarded. E.g., plastics used in packaging of items, bottles (shampoo, detergents, cosmetics), polythene bags, face masks, coffee cups, cling film, trash bags, food packaging etc.

**Status:**
- As per the Minderoo Foundation report (2021): single-use plastics account for a third of all plastic produced globally, with 98% manufactured from fossil fuels.
- India features in the top 100 countries of single-use plastic waste generation – at rank 94 (the top three being Singapore, Australia and Oman).
- India's domestic production of SUP is 8 million metric tonnes annually, and its import of 2.9 MMT.
- India's per capita generation is 4 kg.
- The largest share of single-use plastic is that of packaging – with as much as 95% of single-use belonging to this category – from toothpaste to shaving cream to frozen foods.

**Why SUP is a cause of concern?**
- **Harm environment:** Single-use plastic also accounts for the majority of plastic discarded – 130 million metric tonnes globally in 2019 — all of which are burned, buried in landfills or discarded directly into the environment.
- **GHG emission:** On the current trajectory of production, it has been projected that single-use plastic could account for 5-10% of greenhouse gas emissions by 2050.

**What are the items being banned?**
- **Central Pollution Control Board (CPCB) have announced a ban on** – earbuds; balloon sticks; candy and ice-cream sticks; cutlery items including plates, cups, glasses, forks, spoons, knives, trays; sweet boxes; invitation cards; cigarette packs; PVC banners measuring under 100 microns; and polystyrene for decoration.
- **Polythene bag:** The Ministry had already banned polythene bags **under 75 microns** in September 2021, expanding the limit from the earlier 50 microns. From December 2022, the ban will be extended to polythene bags **under 120 micron**
- **Sachets:** According to the **Plastic Waste Management Rules, 2016**, there is also a complete ban on sachets using plastic material for storing, packing or selling gutkha, tobacco and pan masala.

**Why these items?**
- As per the ministry: The choice for the first set of single-use plastic items for the ban was based on "difficulty of collection, and therefore recycling".

**How will the ban be enforced?**
- **Monitoring by CPCB:** The ban will be monitored by the CPCB from the Centre and by the State Pollution Control Boards (SPCBs) that will report to the Centre regularly.
- **Stop raw materials supply:** Directions have been issued at national, state and local levels — for example, to all petrochemical industries — to not supply raw materials to industries engaged in the banned items.
- **Directions to industries:** SPCBs and Pollution Control Committees will modify or revoke consent to operate issued under the **Air/Water Act** to industries engaged in single-use plastic items.
- **Fresh licensing required:** Local authorities have been directed to issue fresh commercial licenses with the condition that SUP items will not be sold on their premises, and existing commercial licences will be cancelled if they are found to be selling these items.
- **Encouraging compostable plastics:** CPCB has issued one-time certificates to 200 manufacturers of compostable plastic and the BIS passed standards for biodegradable plastic.
- **Penalty:** Those found violating the ban can be penalised under the Environment Protection Act 1986 – which allows for imprisonment up to 5 years, or a penalty up to Rs 1 lakh, or both.
- Violators can also be asked to pay Environmental Damage Compensation by the SPCB.

**How are other countries dealing with single-use plastic?**
- Consensus on SUP in UN: This year, 124 countries, parties to the United Nations Environment Assembly, including India, signed a resolution to draw up an agreement which will in the future make it legally

binding for the signatories to address the full life of plastics from production to disposal, to end plastic pollution.
- **68 countries** have plastic bag bans with varying degrees of enforcement
- **Bangladesh:** Bangladesh became the first country to **ban thin plastic bags** in 2002.
- **China:** China issued a ban on plastic bags in 2020 with a phased implementation.
- **EU:** EU bans certain single-use plastics for which alternatives are available.

## EMERGENCE OF DRUG-RESISTANT TYPHOID STRAINS

- The study published in The Lancet Microbe points to the reduced effectiveness of antibiotics for typhoid fever is threatened because of the emergence of resistant strains**.**
- Typhoid fever causes 11 million infections and more than 100,000 deaths per year. South Asia accounts for 70% of the global disease burden.
- Since 2000, multi-drug-resistant (MDR) S Typhi has declined steadily in Bangladesh and India, remained low in Nepal, and increased slightly in Pakistan.
- However, these are being replaced by strains resistant to other antibiotics
- The genome analysis also reveals that resistant strains – almost all originating in South Asia – have spread to other countries 197 times since 1990.

**Typhoid**
- Typhoid fever is caused by the highly contagious Salmonella Typhi bacteria.
- The bacteria spread through contaminated food or water.
- Symptoms are prolonged fever, headache, nausea, loss of appetite, and constipation or sometimes diarrhoea.
- Clinical severity varies and severe cases may lead to serious complications or even death
- According to WHO children under the age of two years account for a large proportion of severe typhoid fever cases.

## VIRTUAL DIGITAL ASSETS

- Norms laid out for tax deduction onus
- Issuing detailed guidelines on the TDS rule for virtual digital assets (vdas) such as cryptocurrencies, the Central Board of Direct Taxes (CBDT) laid down the various scenarios on how the tax will be applicable and on whom will the onus to deduct it lie.
- With introduction of Section 194S in the Income-tax Act through the Finance Act, 2022, a tax deducted at source (TDS) of 1 per cent will be levied on transfer of vdas effective July 1 if the value of transactions exceeds Rs 10,000 in a year.
- The CBDT has defined four primary vdas — bitcoin, ether, USD Tether and USD Coin — for the purpose of tax deduction on lesser known cryptocurrencies.
- For example, in case of trade for Monero to Deso,the exchanges shall immediately execute a market order for converting this tax deducted in kind (1% Monero/1% Deso in the above example) to one of the primary vdas (BT, ETH, USDT, USDC) which can be easily converted into INR

**Significance**
- Revenue to the government
- The responsibility to deduct TDS has been put on the exchanges which will increase the regulatory and compliance burden for them
- The exchanges have to further disclose these transactions in their tax return and maintain a proper trail.
- This would be helpful to the buyers and sellers both since they can enter into contracts with the exchange for passing the responsibility to deduct tax on their behalf in VDA to VDA transfers or otherwise as well.

## OPEN NETWORK FOR DIGITAL COMMERCE (ONDC)

- The government of India announced the launch of the pilot phase of open network for digital commerce (ONDC) with an aim to "democratize" the country's fast-growing digital e-commerce space that is currently dominated by the two U.S.-headquartered firms — Amazon and Walmart.

**What is ONDC?**
- A not-for-profit organisation that will offer a network to enable local digital commerce stores across industries to be discovered and engaged by any network-enabled applications.
- Neither an aggregator application nor a hosting platform
- All existing digital commerce applications and platforms can voluntarily choose to adopt and be a part of the ONDC network.
- **Aim:** To enable buying of products from all participating e-commerce platforms by consumers through a single platform.
- Currently, a buyer needs to go to Amazon, to buy a product from a seller on Amazon.
- Under ONDC, a buyer registered on one participating e-commerce site (for example, Amazon) may purchase goods from a seller on another participating e-commerce site (for example, Flipkart).
- The ONDC model is trying to replicate the success of the Unified Payments Interface (UPI) in the field of digital payments.
- UPI allows people to send or receive money irrespective of the payment platforms they are registered on.
- **What led to formation of ONDC?:** An outreach conducted by The Department for Promotion of Industry and Internal Trade (DPIIT), under Ministry of Commerce and Industries, found that there is a huge disconnect between the scale of online demand and the ability of the local retail ecosystem (small sellers and hyperlocal supply chain) to participate. ONDC will be required to get funding independently and have a self-sustaining financial model.
- **Benefits of ONDC:** Standardise operations like cataloguing, inventory management, order management and order fulfillment, hence making it simpler and easier for small businesses to be discoverable over network and conduct business.
- **Challenges:** Such as getting enough number of e-commerce platforms to sign up, along with issues related to customer service and payment integration.

**What is the Current Status?**
- **Pilot Stage:** Delhi NCR, Bengaluru, Bhopal, Shillong and Coimbatore — with a target of on boarding around 150 retailers.
- **Advisory Council:** To analyse the potential of ONDC as a concept and to advise the government on measures needed to accelerate its adoption.
- **Future Expectation:** Over the next five years, the ONDC expects to bring on board 90 crore users and 12 lakh sellers on the network, enabling 730 crore additional purchases and an additional gross merchandising value (GMV) of ₹3.75 crore. The GMV for the digital commerce retail market in India was ₹2.85 lakh crore ($38 billion) in 2020, which is only 4.3% of the total retail GMV in India.

## NATIONAL MOBILE MONITORING SOFTWARE

- The new National Mobile Monitoring Software application has problems that are eroding the right to work.
- In May 2021, the Ministry of Rural Development (MoRD) launched the National Mobile Monitoring Software (NMMS) app, a new application meant for "improving citizen oversight and increasing transparency" in National Rural Employment Guarantee Act (NREGA) works.
- It is to be deployed by NREGA Mates, local women at the panchayat level who are selected and trained to monitor NREGA worksites.
- The main feature of the app is the real-time, photographed, geo-tagged attendance of every worker to be taken once in each half of the day.

**Why has it become a cause of concern?**

- **Strict Timing:** While such an app may be useful in monitoring the attendance of workers who have fixed work timings, in most States, NREGA wages are calculated based on the amount of work done each day, and workers do not need to commit to fixed hours. This flexibility has been key to NREGA's widespread demand. However, marking attendance on the app mandates that workers are at the worksite the entire day. This causes significant difficulty for NREGA workers.

- **Disproportionately affect women workers:** NREGA has historically had a higher proportion of women workers (54.7% in FY 2021-22) and has been pivotal in changing working conditions for women in rural areas. Due to the traditional burden of household chores and care work on women, the app is likely to disproportionately affect women workers. The conditions for registering NREGA attendance on the app put them in a dilemma where they may end up foregoing NREGA work.

- **Network woes:** A stable network is a must for real-time monitoring; unfortunately, it remains patchy in much of rural India. This could lead to workers not being able to mark their attendance, and consequently lose a day of wages.

- **Impacted NREGA Mates:** The role of a Mate was conceptualised as an opportunity to empower local women to manage attendance and work measurement in their panchayat. But now, to be a Mate, one needs to have a smartphone. This new condition disqualifies thousands of women who do not own smartphones from becoming Mates. Now, smartphone-owning men are likely to be given preference as Mates. Alternatively, women could become proxy Mates — officially registered, but deferring to men who work and get paid.

- **Errors in pilot process:** Officials and activists have confirmed these implementation errors had been evident throughout the pilot process.

- **No physical records:** The app claims to increase citizen oversight by bringing more transparency and ensuring proper monitoring of the schemes, besides potentially enabling processing payments faster. However, it appears to be doing exactly the opposite. With no physical attendance records signed by workers anymore, workers have no proof of their attendance and work done.

**The Way Forward**

- **Strengthen social audits:** Social audits are citizen-centric institutions, where the citizens of the panchayat have a direct role and say in how NREGA functions in their panchayat.

- **Ensure Principles of Transparency:** The MoRD's habit of passing reforms with no stakeholder consultation does not fall in line with the principles of transparency and citizen-participation enshrined in NREGA.

**MGNREGA Scheme:**

- The Mahatma Gandhi National Rural Employment Guarantee Act, earlier known as the National Rural Employment Guarantee Act was passed in 2005 to augment employment generation and social security in India.

- The scheme is a demand-driven wage employment scheme, which functions under the Ministry of Rural Development.

- Every adult member of a household in a rural area with a job card is eligible for a job under the scheme.

- The scheme envisages providing 100 days of guaranteed wage employment in a financial year to adult member volunteers for unskilled manual work.

- There is also a provision for additional 50 days of unskilled wage employment in drought/natural calamity notified rural areas.

- As per Section 3(4) of the MGNREGA, the States may make provisions for providing additional days beyond the period guaranteed under the Act from their own funds.

- At least one-third of beneficiaries have to be women.

- Wages must be paid according to the statutory minimum wages specified for agricultural labourers in the state under the Minimum Wages Act, 1948.

## VL-SRSAM MISSILE SYSTEM

- India has successfully flight-tested the Vertical Launch Short Range Surface to Air Missile (VL-SRSAM) from a ship at Integrated Test Range (ITR), Chandipur, off the coast of Odisha.

**About VL-SRSAM**
- The VL-SRSAM, a ship-borne weapon system, is meant for neutralising various aerial threats at close ranges, including sea-skimming targets.
- The weapon system will prove to be a force-multiplier for the Indian Navy.
- Designed to strike at the high-speed airborne targets at the range of 40km to 50km and at an altitude of around 15km.
- Two key features of the VL-SRSAM are cruciform wings and thrust vectoring.
- 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.

## VIRTUAL PRIVATE NETWORK (VPN)

- New directions from Computer Emergency Response Team (CERT-In) for regulating VPN providers will be effective from June 28.

**Directives**
- The rule mandates VPN providers to record and keep their customers' logs for 180 days.
- It requires the firms to collect and store customer data for up to five years.
- It further mandated that any cybercrime recorded must be reported to the CERT within 6 hours of the crime.
- The directions applicable to data centres, virtual private server (VPS) providers, cloud service providers, virtual asset service providers, virtual asset exchange providers, custodian wallet providers and Government organisations.
- Firms that provide Internet proxy-like services through VPN technologies also come under the ambit of the new rule.
- Corporate entities are not under the scanner.
- In response to CERT-In rules many VPN providers are planning to shift servers out of the country or cater to users in India through virtual servers located in Singapore and UK.

**What is a virtual server, and what are its uses?**
- A virtual server is a simulated server environment built on an actual physical server.
- It recreates the functionality of a dedicated physical server.
- The virtual twin functions like a physical server that runs software.
- It uses resources of the physical server.
- Multiple virtual servers can run on a single physical server.

**Uses**
- Virtualising servers helps reallocate resources for changing workloads.
- Converting one physical server into multiple virtual servers allows organisations to use processing power and resources more efficiently
- Running multiple operating systems and applications on a single physical machine reduces the cost as it consumes less space, hardware.
- Virtualisation also reduces cost as maintaining a virtual server infrastructure is low compared to physical server infrastructure.
- Virtual servers are also said to offers higher security than a physical server infrastructure as the operating system and applications are enclosed in a virtual machine.

- This helps contain security attacks and malicious behaviors inside the virtual machine.
- Virtual servers are also useful in testing and debugging applications in different operating systems and versions without having to manually install and run them in several physical machines.

**Can server relocation and virtualisation help VPN providers circumvent the new rules?**
- The rules are applicable to any entity whatsoever in the matter of cyber incidents and cyber security incidents, regardless of whether they have a physical presence in India or not, as long as they deliver services to Indian users.

**Virtual Private Network**
- Virtual Private Network (VPN) is a service that helps internet users to stay private online by hiding their (Internet Protocol) IP addresses.
- VPN establishes an encrypted connection between the user's computer and the internet, providing a private tunnel for their data, making them anonymous and blocking anyone from tracking their movements like where they are going or what they are doing.
- It is the IP address – a special number unique to the user's internet network– that helps websites, law enforcement agencies, cybercriminals or anyone else looking into an individual's internet activities and track down their accurate location.
- Without a VPN, the user's IP address is visible to the web. VPNs obscure the user's internet usage by jumping the signal off multiple servers.
- VPN extends through encrypted connections over the Internet.
- Since the line is encrypted between the network and the device connected to it, the traffic remains private.

**Computer Emergency Response Team (CERT-In):**
- CERT-In is the national nodal agency for responding to computer security related incidents.
- CERT-In has been operational since 2004.
- It works under Ministry of Electronics and Information Technology
- CERT-In has been designated to serve as the national agency to perform the following functions in the area of cyber security:
- Collection, analysis and dissemination of information on cyber incidents.
- Forecast and alerts of cyber security incidents.

## ISKANDER-M MISSILE SYSTEM

- Russia has promised its ally Belarus delivery of nuclear- capable missiles in the coming months to take on an "aggressive" West.

**What is the Iskander-M missile system?**
- Code named "SS-26 Stone" by NATO, Iskander-M is a term used by Russia to define both the transporter-erector launch system and the short-range ballistic missile (SRBM) it fires.
- The system can also fire ground-launched cruise missiles (GLCMs).
- The Iskander-M system has been exclusively used by the Russian military, whereas Iskander-E is the one meant for export

**What is the missile's capability and range?**
- The Iskander-M missile has a range of 500 km and it can carry a payload of up to 700 kg.
- It is capable of carrying both conventional and nuclear warheads.
- The conventional warheads can be equipped with include cluster bombs, electromagnetic pulse (EMP) warheads and bunker-buster munitions.
- The export variant, Iskander-E, has a range of 280 km with a reduced 480 kg payload.
- Russia first used the Iskander in combat in Georgia in 2008.

- US-based think tank, the Center for Strategic and International Studies (CSIS), says that the Iskander missiles are designed to confuse missile defences by flying on a low trajectory and manoeuvring in flight to strike targets within 2 to 5 metres accuracy.

**What does its proposed delivery to Belarus mean?**
- A sort of warning to the West against climbing the escalation ladder in the Ukraine war
- In 2012, Moscow said that the weapon could be used to target Europe's missile defences.
- The Iskander system has already been deployed in Kaliningrad, a Russian exclave, from where it can be fired to target NATO forces in Poland, the Baltic States, and Sweden.

## mRNA Vaccine

- The country's first homegrown mRNA Covid-19 vaccine developed at Pune's Gennova Biopharmaceuticals has received emergency use for the age group 18 and above.
- The Drug Controller General of India (DCGI) approved the two-dose mRNA vaccine.
- The vaccine is stable for storage at 2-8 degree C.
- Vaccines based on mRNA require ultra-low temperature conditions for storage and distribution.

**What are mRNA vaccines?**
- mRNA vaccines trick the body into producing some of the viral proteins itself.
- They work by using mRNA, or messenger RNA, which is the molecule that essentially puts DNA instructions into action.
- Inside a cell, mRNA is used as a template to build a protein

**How it works?**
- To produce an mRNA vaccine, scientists produce a synthetic version of the mRNA that a virus uses to build its infectious proteins.
- This mRNA is delivered into the human body, whose cells read it as instructions to build that viral protein, and therefore create some of the virus's molecules themselves.
- These proteins are solitary, so they do not assemble to form a virus.
- The immune system then detects these viral proteins and starts to produce a defensive response to them.

## CAPSTONE

- NASA's new satellite will test a unique lunar orbit that will be used by future missions.
- NASA launched CAPSTONE, a microwave oven-sized CubeSat weighing just 55 pounds (25 kg).
- CAPSTONE, short for Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment, is designed to test a unique, elliptical lunar orbit.
- The satellite, launched on Rocket Lab's Electron rocket from the Rocket Lab Launch Complex 1, is heading toward an orbit intended in the future for Gateway, a Moon-orbiting outpost that is part of NASA's Artemis program.
- CAPSTONE aims to help reduce risk for future spacecraft by validating innovative navigation technologies, and by verifying the dynamics of the halo-shaped orbit.
- The orbit is known as a near-rectilinear halo orbit (NRHO).
- It is significantly elongated, and is located at a precise balance point in the gravities of Earth and the Moon. This offers stability for long-term missions like Gateway.

**Artemis mission**
- NASA's Artemis mission is the next generation of lunar exploration, and is named after the twin sister of Apollo from Greek mythology.

- With the Artemis programme, NASA aims to land humans on the moon by 2024, and it also plans to land the first woman and first person of colour on the moon.
- NASA will establish an Artemis Base Camp on the surface and a gateway (the lunar outpost around the Moon) in lunar orbit to aid exploration by robots and astronauts.
- The gateway is a critical component of NASA's sustainable lunar operations and will serve as a multi-purpose outpost orbiting the moon.

**Artemis I Mission**
- It will be the **first integrated flight test of NASA's Deep Space Exploration Systems**
- **Orion spacecraft:** Orion spacecraft is going to remain in space without docking to a space station, longer than any ship for astronauts has ever done before.
- **Space Launch System (SLS) rocket:** It is the most powerful rocket in the world — and travels 2,80,000 miles from the earth for over four to six weeks during the course of the mission.
- Newly upgraded Exploration Ground Systems at Kennedy Space Centre in Cape Canaveral, Florida.
- It is an uncrewed space mission where the spacecraft will launch on an SLS rocket.
- The primary operating goal of the mission is to assure a safe crew module entry, descent, splashdown, and recovery.
- Artemis II will be the first crewed flight test and is targeted for 2023.
- Artemis III will land astronauts on the Moon's South Pole in 2024.

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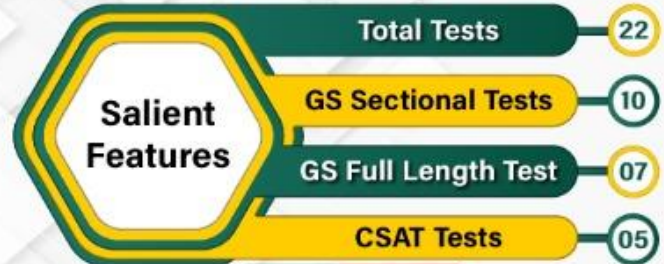### HP ALLIED / NAIB TEHSILDAR 2022

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