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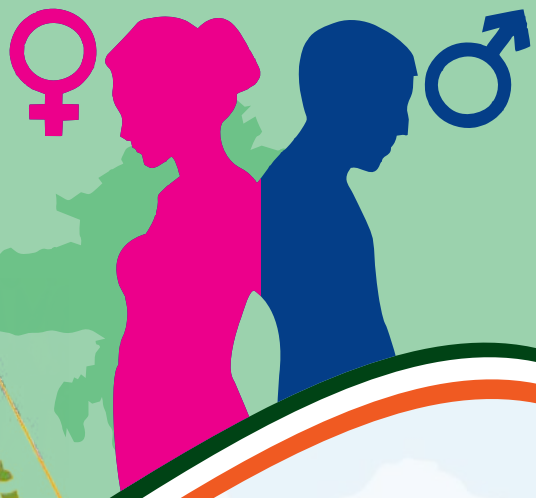
56 TH EDITION

INDIA INEQUALITY REPORT



75 YEARS OF INDIA'S AUTONOMOUS FOREIGN POLICY

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A **MONTHLY PERIODICAL** FOR ASPIRANTS OF UPSC EXAMINATION

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GENERAL STUDIES - I

UNESCO INTANGIBLE CULTURAL HERITAGE LIST

GS-I CULTURE & HERITAGE

Context

- **Baguette — the staple French bread — was inscribed into the UN's list of intangible cultural heritage (ICH).** UNESCO, the international body which aims at promoting peace and cooperation among nations through education, arts, sciences and culture, recognized the "Artisanal know-how and culture of baguette bread" as a world cultural heritage.

Details

What is a baguette?

- The baguette is a long and thin loaf made of flour, water, salt and yeast, and is consumed as a staple in France.
- Some believe that it was invented by August Zang, a baker and an entrepreneur from Vienna in 1839, who introduced the world to the taste of crusty bread with softer insides, using a steam oven.
- It gained its official name in 1920.
- About 10 billion baguettes are consumed every year in France by a population of 67 million. However, people are increasingly becoming inclined towards purchasing products from supermarkets, rather than the traditional way. This method interferes with the quality of the bread.

What is intangible cultural heritage according to UNESCO?

- UNESCO defines "intangible" as "expressions that have been passed from one generation to another, have evolved in response to their environments and contribute to giving us a sense of identity and continuity…"
- According to an official document by UNESCO, '**intangible cultural heritage' includes "oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts."**
- It ascribes importance to "the wealth of knowledge and skills that is transmitted through it from one generation to the next," which necessitates their preservation.
- The document states that the safeguarding of an ICH means ensuring that it "remains an active part of life for today's generations that they can hand on to tomorrow."
- The adoption of the Convention for the Safeguarding of the ICH by the General Conference of UNESCO in 2003 was a crucial step towards preserving intangible heritage from across the globe.
- UNESCO's list of Intangible Cultural Heritage of Humanity was established in the year 2008.

What are the criteria for the selection?

- There are three criteria for an intangible cultural heritage to be inscribed in the United Nations list.
- **The entity must "(1) be recognized by communities, groups and, in some cases, individuals as part of their cultural heritage, (2) be transmitted from generation to generation and be constantly recreated by communities and groups in response to their environment, their interaction with nature and their history and (3) provide them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity," according to UNESCO report.**

What are India's intangible cultural symbols on the UNESCO list?

- This year, India nominated Garba, a traditional dance form that originated in the state of Gujarat, for inscription on UNESCO's ICH list.
- The elements which have been on the representative list of intangible cultural heritage from India in the past decade include Kolkata's Durga Puja (2021), KumbhMela (2017), Navroz (2016), Yoga (2016), traditional brass and copper craft of utensil-making among coppersmiths of Punjab (2014), Sankirtana, a ritual musical performance of Manipur (2013), and the Buddhist chanting of Ladakh (2012).
- Before 2011, the list included Chhau dance, Kalbelia folk songs and dance of Rajasthan, and Mudiyettu, a dance drama from Kerala (2010), Ramman, a religious festival and theatre performance of Garhwal in the Himalayas (2009), and Kutiyattam or Sanskrit theatre, and Vedic chanting (2008).
- Ramlila, a traditional performance of Ramayana, was also included in 2008.
- The Ministry of Culture also launches regular schemes, in an attempt to preserve, protect and promote intangible cultural heritage in the country.
- Among them, the **"Scheme for Safeguarding the Intangible Cultural Heritage and Diverse Cultural Traditions of India"** aims to "professionally" enhance "awareness and interest" in the safeguarding, promotion and propagation of ICH.

MEITEI SCRIPT

GS-I CULTURE & HERITAGE

Context

- Newspapers in Manipur are working towards a new deadline: By January 15, 2023, they will have to replace the Bengali script that's currently in use with Meitei Mayek or the Manipuri script.

Details

- The script, once patronised by Meitei rulers but which fell into disuse with the advent of Hinduism and eventually

disappeared, is now enjoying a new lease of life after a decades-old movement for its revival.

- The Meiteilon (Manipuri language) script is fairly old.

History

- According to Mutua Bahadur of Mutua Museum, which houses arte facts from all over Manipur, there are coins dating back to the reign of MeidinguUraKonthouba (568-658) and MeidinguAyangba (821-910) — 'Meidingu' are kings who belong to the Ningthouja clan whose rule extends from 33 AD to 1949 AD.
- The earliest epigraphic record of the script is a stone inscription from Khoibu village which was erected on the orders of Meidingu Kiyamba (1467-1508).
- The Meitei Mayek or Meitei script evolved with time and this led to conflict between various proponents.
- With the advent of Hinduism, Bengali scripts became so popular that stone inscriptions in the 18th and 19th century were in Bengali script.
- However, it was believed that Meitei Mayek was taught in a school that G H Damant, the officiating political agent of British India, started sometime in 1877 but which folded up soon. When formal education was started by Sir James Johnstone in 1885, the Bengali script slowly became popular.
- During the reign of Maharaja Sir Churachand (1891-1941) in the early 20th century, a discussion was reportedly held on which script of Manipuri to use — Bengali or Roman. Since most of the literate Manipuri then were educated in Sylhet, Dacca or Calcutta, it was decided to adopt the Bengali script as the Meitei Mayek was no longer in popular use.

Revival

- A movement to revive the Meitei Mayek started in the 1930s and gathered strength in the 1950s
- An Expert Committee was formed to suggest the script for Meiteilon and on their recommendation, in 1977, the 27-letter script was approved by the State Government.
- The Manipur Official Language Act, 1979, was enacted with the definition of Manipuri language as "Meiteilon written in Bengali script and spoken by the majority of Manipuri population".
- By a Cabinet decision taken on May 18, 2005, Manipuri written in Meitei Mayek was introduced in schools and by now, it is taught even at the university level, replacing Bengali script.
- By an Amendment Act of 2021, the definition of "Manipuri language" in the Official Language Act was modified as "Meiteilon in MeeteiMayek and spoken by the majority of Manipur population" with a proviso that for 10 years, both the Bengali and Meitei Mayek scripts shall be allowed.
- New books are being brought out in both Bengali and Meitei Mayek side by side, though that has pushed up costs.
- Now, the last bastion of the Bengali script, the vernacular press, is under pressure to switch over to the Meitei Mayek from January 15, 2023.

Meitei people

- The Meitei people are the dominant ethnic group in Manipur. **The Meitei ethnic group represents about 53% of Manipur's population**.
- They speak the Meitei language (officially called Manipuri), which is one of the 22 official languages under the 8th schedule of the Indian Constitution.
  - It is the sole official language of Manipur.
- **The Meiteis primarily settled in Manipur, though a sizable population has settled in Assam, Tripura, Nagaland, Meghalaya, and Mizoram.**
  - There is also a notable presence of Meitei in the neighbouring countries of Myanmar and Bangladesh.
- **Most of the rich culture of Manipur can be credited to the Meiteis.**
  - The famous Manipuri dance form had its roots in the Lai Haraoba dance form.
  - The Manipuri martial art 'Thang-ta' is a combative sport which had its origin in the Meitei knights during the king's rule. It involves various fighting techniques with swords and spears.
- According to the 2011 census, **Meiteis follow only two religions, with the majority of Meiteis practising variants of Hinduism.** Around 16% of Meiteis traditionally believe in the Sanamahi religion named after the god Sanamahi. Meiteis follow both Hinduism as well as Sanamahi religious traditions and rituals.
- The Meitei are mainly agriculturists, rice is their main staple crop. However, they also grow mangoes, lemons, pineapples, oranges, guavas, and other fruits.
- Fishing is also common among the Meitei that can either be a profession or a hobby.
  - Women tend to dominate the local markets as sellers of food items, textiles, and traditional clothing.
- **Traditional Meitei sports**
  - SagolKangjei: It is the earliest form of modern-day Polo which traces its origin to Manipur.
  - Mukna Kang-jei: It is a form of Meitei Wrestling. It is considered to be the most masculine form of sport.
  - Huyenlanglon: It is a martial art from Manipur.
  - Khongkangjei: It is a form of Meitei Hockey.
  - Yubilakpi: It is a traditional full-contact game played by Meiteis using a coconut, which has some notable similarities to rugby.

Context

- From 2030 onwards, more than 160 to 200 million people could be exposed to a lethal heat wave in India every year- World Bank.

Further findings

- Around 34 million Indians will face job losses due to heat stress-related productivity decline. By 2037, the demand for cooling is likely to be eight times more than current levels.

What is a Heat Wave?

- A heat wave is a period of abnormally and uncomfortably hot and usually humid weather.
- According to the World Meteorological, a heat wave is when the daily maximum temperature for more than five consecutive days exceeds the average maximum temperature by 9 degrees Fahrenheit.

Heat wave Criteria

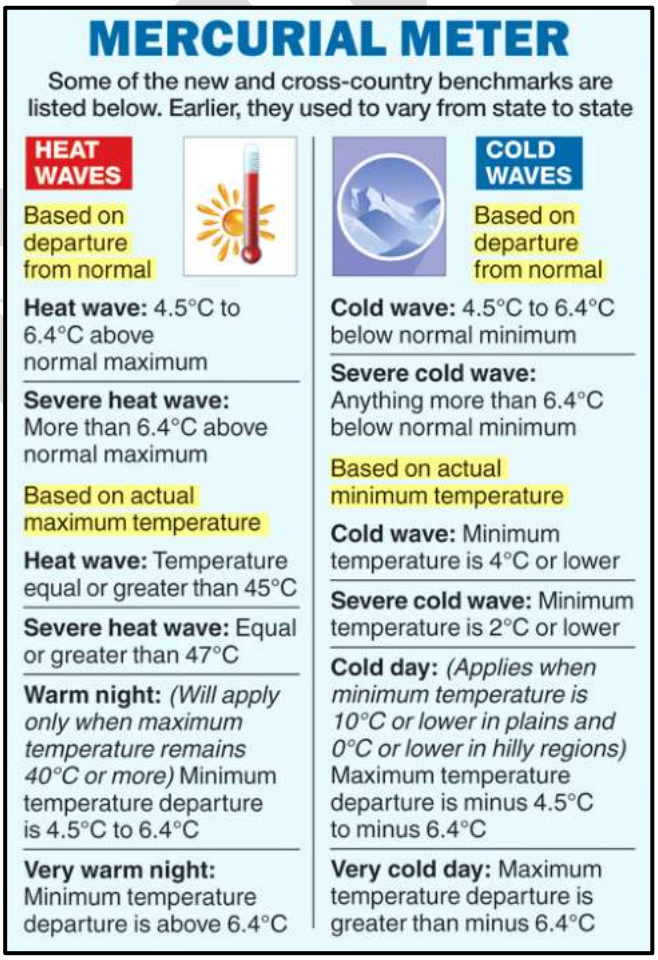
- In India, Heat wave is considered if maximum temperature of a station reaches atleast40 degree C or more for Plains and at least 30 degree C or more for Hilly regions.

a) **Based on Departure from Normal**
   - **Heat Wave:** Departure from normal is 4.5 degree C to 6.4 degree C
   - Severe Heat Wave: Departure from normal is >6.4 degree C

b) **Based on Actual Maximum Temperature**
   - **Heat Wave:** When actual maximum temperature ≥ 45 degree C
   - **Severe Heat Wave:** When actual maximum temperature ≥47 degree C

c) **Warm Night**
   - It should be considered only when maximum temperature remains 40 degree C or more. It
   - may be defined based on departures or actual minimum temperatures as follows:
   - **Warm night:** Minimum temperature departure is 4.5 degree C to 6.4 degree C
   - **Very warm night:** minimum temperature departure is >6.4 degree C

d) **Criteria for describing Heat Wave for coastal stations**
   - When maximum temperature departure is 4.5 degree C or more from normal, Heat Wave may be declared provided actual maximum temperature is 37 degree C or more.



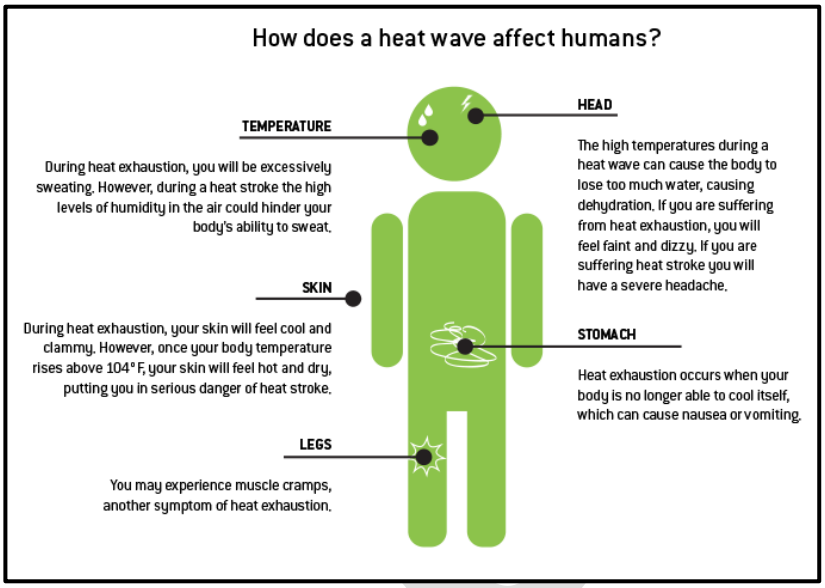
How do heat waves form?

- A heat wave is formed when static high pressure generated in the upper atmosphere over a region for several days up to several weeks. This static high pressure generates a hot mass of air, which is stagnant for many days and week, which resulted the trapping of more heat that also reduce the convention currents.
- The high pressure acts as a barrier and forces the mass of air to sink to the surface of the land that prevents heat to rise.
- This hot mass of air accumulates only heat and humidity without any trace of precipitation that causes abnormally high temperatures. It is very often during the summer season, from May to November in the northern hemisphere.
- The seal keeps out convection currents that form clouds and eventually rain clouds, both of which would help the area affected cool off.
- Instead the result is a heat wave that has both high heat and high humidity near the ground. These heat waves can last from days to weeks.

Implications of Heat Waves

Social impacts

- Extreme heat can lead to **heat-related illness and death**, particularly in elderly populations, the poor, outdoor workers, and in urban areas.
- Heat waves **exacerbate the urban heat island effects**, amplifying temperatures in built environments, and resulting in poorer air quality due to the creation of ozone that negatively impacts health.



Economic impacts

- Multiple areas of the economic sector experience **reduced worker productivity during heatwaves**, especially agriculture and construction.
- Globally, 2% of total working hours is projected to be lost every year, either because it is too hot to work or because workers have to work at a slower pace. Lost productivity from heat stress at work, particularly in developing countries, is expected to be valued at $4.2 trillion dollars per year by 2030, driving more inequality.
- The agricultural sector, where 940 million people earn their livelihood, is set to be harder hit by hotter temperatures, pushing workers, crops and livestock past their physiological heat and drought tolerances. This will result in lost labour, in smaller harvests for farmers, higher prices for consumers, and negative impacts on livelihoods.
- A **World Bank report suggests that by 2050, about 600 million Indians will live in places that could experience loss of living standards**, which could cost 2.8% of the GDP, stalling efforts to pull large parts of the population out of poverty.

Ecological impacts

- Heatwaves, without concomitant increases in precipitation, **can lead to water shortages and increased stress for plants, particularly in arid regions.** This has the effect of **reducing plant growth, the basis of energy production and the food chain,** with an overall drying-out of the landscape. Eg-The 2003 European heatwave resulted in a 10% loss in glacier mass in Europe, which was five-times more than the average annual loss.Similar impacts were reported for the French Alps in 2019.
- Over time, such **deep permafrost warming and thawing could cause landslides and rock falls, continuing the negative ecological impacts.**

Does all of India experience heat wave conditions?

- Heatwaves are common over the Core Heatwave Zone (CHZ) – Rajasthan, Punjab, Haryana, Chandigarh, Delhi, West Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Orissa, Vidarbha in Maharashtra, parts of Gangetic West Bengal, Coastal Andhra Pradesh and Telangana, as categorised by India Meteorological Department. Several recent studies indicate that CHZ experience more than six heatwave days per year during these four months. Many places in the northwest and cities along southeastern coast report eight heatwave days per season.
- However, the regions in the extreme north, northeast and southwestern India are lesser prone to heatwaves.

MoES Report

The **"Assessment of Climate Change over the Indian Region"** Report prepared by the Union Ministry of Earth Sciences has cautioned that by the end of 2100, the "frequency of summer [April–June] heat waves over India is projected to be three to four times higher" and the "average duration of heatwave events is also projected to approximately double."

The impact of heatwave stress is expected across India but particularly over the densely populated Indo-Gangetic river basin.

IPCC Report

According to The Intergovernmental Panel on Climate Change (IPCC Special Report on Oceans and Cryosphere in a Changing Climate) India will witness marine heat waves, extreme El Niños, and extremely severe cyclones in response to increasing carbon emissions due to continued burning of fossil fuels

Mitigation and Adaptation Strategies

- The Mitigation and Adaptation Strategies are intended to **mobilise individuals and communities** to help protect their neighbours, friends, relatives, and themselves against avoidable health problems during spells of very hot weather.
- The **Government agencies need to play a critical role in preparing and responding to heatwaves at a local level,** working closely with health and other related departments on a long-term strategic plan.

- **Establish Early Warning System and Inter-Agency Coordination** to alert residents on predicted high and extreme temperatures. Who will do what, when, and how is made clear to individuals and units of key departments, especially for health.
- **Capacity building/training programme for health care professionals** at the local level to recognize and respond to heat-related illnesses, particularly during extreme heat events.
- These training programmes should focus on medical officers, paramedical staff and community health staff so that they can effectively prevent and manage heat-related medical issues to reduce mortality and morbidity.
- **Public Awareness and community outreach -** Disseminating public awareness messages on how to protect against the extreme heatwave through print, electronic and social media and Information, Education and Communication materials such as pamphlets, posters and advertisements and Television Commercials on Do and Don't and treatment measures for heat-related illnesses.
- **Collaboration with non-government and civil society** to improve bus stands, build temporary shelters, wherever necessary, improve water delivery systems in public areas and other innovative measures to tackle Heatwave conditions.

GLOBAL STATUS OF BLACK SOIL / GS-I GEOGRAPHY

Context

- Black soils, which feed the global population, are under threat, with most losing at least half of their **soil organic carbon (SOC) stocks**, according to a United Nations report. *Global status of black soils* is the first such report, released on the occasion of World Soil Day, December 5, 2022.

Black Soil and its importance

- **Black soil**, is a black-colored soil containing a high percentage of humus (4% to 16%) and high percentages of phosphorus and ammonia compounds.
- Black soils are extremely fertile and can produce high agricultural yields due to their elevated moisture storage capacity. They constitute 5.6 per cent of global soils and contain 8.2 per cent of the world's SOC stocks: Approximately 56 billion tonnes of carbon.
- This signifies their importance for climate change mitigation and adaptation. The ability of the soils to remove carbon from the atmosphere and lock it up in soil organic matter (called carbon sequestration) has been proposed as an important solution to mitigate human-induced climate change.
- The inherent fertility of the soils makes them the food basket for many countries and is considered essential to the global food supply.
- Black soils are the **key to food security and the global economy**. Globally in 2010, 66 percent of sunflower seeds, 51 per cent of small millet, 42 per cent of sugar beet, 30 percent of wheat and 26 percent of potatoes were harvested from black soils.

Concern

- Black soils are quickly losing their SOC stocks. They have lost 20 to 50 percent of their original SOC stock, with the carbon being **released into the atmosphere mostly as carbon dioxide, exacerbating global warming, the report pointed out.**
- **Land-use change, unsustainable management practices and excessive use of agrochemicals** are to blame, found the Food and Agriculture Organization (FAO). These soils are **characterized by a thick, dark-colored soil horizon rich in organic matter.** Most of the **black soils suffered from moderate to severe erosion processes**, as well as nutrient imbalances, acidification, and biodiversity loss.

Preserving Black Soils

- Black soils have the potential to provide 10 percent of the total SOC sequestration globally if they receive proper attention. Europe and Eurasia have the highest potential at over 65 percent and Latin America and the Caribbean at around 10 percent, according to FAO's global Soil Organic Carbon Sequestration Potential map.
- Preserving natural vegetation on black soils such as grasslands, forests and wetlands and adopting sustainable soil management approaches on cropped black soils need to be the two main goals.

Black Soil and its distribution in India

- **Coverage:** 5.46 lakh sq km (**16.6** % of total geographical area)
- **Origin:** Weathering of volcanic rocks
- **Parent Material:** Gneisses and schists; weathering of Basaltic rock formed due to solidification of lava.
- **Type:** Mature and zonal Soil
- **Nature:**
  - Clayey (62% of composition)

- High water retention capacity
- Extraordinary fertility
- Black in colour due to **Titaniferous Magnetite**

- **Composition**
  - Poor in Nitrogen
  - Poor in Humus
  - Poor in Phosphate
  - Rich in potash
  - Rich in lime
  - Rich in aluminium, calcium
  - Rich in iron, magnesium
- **Distribution:** Maharashtra, Madhya Pradesh, Gujarat, Andhra Pradesh, and Tamil Nadu
- **Crops**: Cotton, Sugarcane, oilseeds and Tobacco, jowar, linseed, virginia tobacco, castor, sunflower and millets. Rice and sugarcane are equally important.

BOMB CYCLONE / GS-I GEOGRAPHY

Context

- An unprecedented Bomb Cyclone is wreaking havoc across the United States and Canada.

About

- A bomb cyclone is a large, intense midlatitude storm that has low pressure at its center, weather fronts and an array of associated weather, from blizzards to severe thunderstorms to heavy precipitation.
- It becomes a bomb **when its central pressure decreases very quickly—by at least 24 millibars in 24 hours.**
- In simple terms, bombogenesis is a storm (low pressure area) that undergoes rapid strengthening.
- This can happen **when a cold air mass collides with a warm air mass, such as air over warm ocean waters**.
- The vast majority of such storms occur over the ocean. The storm can be tropical or non-tropical in nature.

Key Features

Bomb cyclones have cold air and fronts:

- Cold air rapidly weakens hurricanes, while it is an essential ingredient for bomb cyclones.

Bomb cyclones form during winter:

- Hurricanes form from late spring to early fall, while bomb cyclones form from late fall to early spring.

Bomb cyclones form at higher latitudes:

- Hurricanes form in tropical waters, while bomb cyclones form over the northwestern Atlantic, northwestern Pacific and sometimes the Mediterranean Sea. Many of the infamous storms that have battered the East Coast and sank ships in the northwestern Atlantic Ocean throughout history were bomb cyclones.

Favourable conditions for Bomb cyclones to form

- **Baroclinic instability** is one of the principal mechanisms for the development of most explosively deepening cyclones. Deep tropospheric frontogenetic processes.
- **Influence of air–sea interaction**, and latent heat release
- **Upper-level winds, also known as —jet streams:** When a strong jet stream overlies a developing low-pressure system, it creates a feedback pattern that makes warm air rise at an increasing rate. This allows the pressure to drop rapidly at the center of the system. As the pressure drops, winds strengthen around the storm leading to Bombogenesis.

Areas prone to Bomb Cyclones

Along the U.S. East Coast during winter, there's a naturally potent thermal contrast between the cool land and the warm Gulf Stream current. Over the warmer ocean, heat and moisture are abundant. But as cool continental air moves overhead and creates a large difference in temperature, the lower atmosphere becomes unstable and buoyant. Air rises, cools and condenses, forming clouds and precipitation. In the Northern Hemisphere the maximum frequency of explosively deepening cyclones is found within or to the north of the Atlantic Gulf Stream and Kuroshio Current in the western Pacific.

In the Southern Hemisphere it is found with Australian east coast lows above the East Australian Current, which shows the importance of air-sea interaction in initiating and rapidly developing extratropical cyclones

Impact of Bomb Cyclones

- Bomb Cyclones can produce heavy flooding, blizzard conditions and wind speeds comparable to a Category 1 hurricane.
- The fast strengthening is usually a sign of a very powerful storm system and so much of the danger lies in the fact that bomb cyclones can lead to damages before giving time to prepare.

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GENERAL STUDIES - II

WOMEN IN JUDICIARY

GS-II POLITY

In News

- Recently the Chief Justice of India D Y Chandrachud set up a women's bench comprising Justices Hima Kohli and Bela M Trivedi.
- **It's only the 3rd time in history that the Supreme Court has created an all-woman bench**; 1st time in 2013, and 2nd time in 2018.

Details

- The Supreme Court now has a working strength of 27 judges, against a sanctioned strength of 34.
  - **Only 4 out of the 27 judges in the Supreme Court are women, and it is the highest number of women judges in the history of the Supreme Court.**
- There have been only 11 women judges on the Supreme Court since its inception, and no women Chief Justices.
- **According to data from the Department of Justice website, Out of 627 judges in all High Courts, only 66 are women, just about 10% of the total working strength.**
- The Madras High Court has the maximum number of women judges '13 out of the working strength 55'.
- Statistics show that women's representation in the judiciary has been extremely low.

Concern

- **According to experts, there are hardly any women in the legal profession, and their low numbers are the reason why there are fewer women judges compared to men.**
- Data regarding women lawyers, point out that of 17 lakh advocates, only 15% are women.
- Elected disciplinary bodies for lawyers, such as the State Bar councils, have only 2% women members.
- **The apex body of lawyers, the Bar Council of India (BCI), has no woman member.**
- Gender disparity in the judiciary can also result in the absence of women in the collegiums of HCs as well as the top court.

Way Forward

- The presence of women as judges and lawyers will further improve the justice delivery system.
- The presence of women on the Bench and in the Bar has more than symbolic importance. They bring to the law a different perspective, one that is built upon their experience.
- They also have a more understanding of the different impacts that certain laws may have on men and women.
- **The representation of women in the judicial system is significant for many reasons which ensure that the legal system is developed with society in mind. It also inspires the next generation of women judges and advocates to achieve their goals.**

AVIATION SAFETY IN INDIA

GS-II POLITY

In News

- **India ranked 48th in the global aviation safety ranking by the International Civil Aviation Organization (ICAO).**

Details

- Four years ago, India was at the 102nd spot in the rankings.
- **India's score in terms of effective implementation of key safety elements has improved** to 85.49%, putting it ahead of China (49), Israel (50) and Turkey (54).
- India's score in the 2018 Universal Safety Oversight Audit Programme was 69.95%.
- This time, India's score for civil aviation organisation rose from 63.64% to 72.73%, personnel licensing and training from 25.58% to 84.71%, aircraft operations from 80.34% to 97.44%, airworthiness of aircraft from 90.20% to 97.06% and aerodrome and ground aids from 72.36% to 92.68%.
- **The higher ranking means that India has improved its air safety processes**. Better aviation safety in home skies also allows Indian carriers to expand faster in overseas markets as permissions for new services are easier to get.

International Civil Aviation Organization

- The International Civil Aviation Organization is a **specialized agency of the United Nations that coordinates the principles and techniques of international air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth**. ICAO headquarters are located in the Quartier International of Montreal, Quebec, Canada.

- The ICAO Council adopts standards and recommended practices concerning air navigation, its infrastructure, flight inspection, prevention of unlawful interference, and facilitation of border-crossing procedures for international civil aviation.
    - ICAO defines the protocols for air accident investigation that are followed by transport safety authorities in countries signatory to the Chicago Convention on International Civil Aviation. The Air Navigation Commission (ANC) is the technical body within ICAO.

Related News

- The **Union Ministry of Civil Aviation has notified the draft Aircraft Security Rules, 2022** which empower the Bureau of Civil Aviation Security (BCAS) to impose penalties of up to ₹1 crore on airports and airlines for violation of security measures.
    - The draft rules were notified on 10th November, and the Ministry has invited stakeholder comments for 30 days.

Key Provisions of the Draft

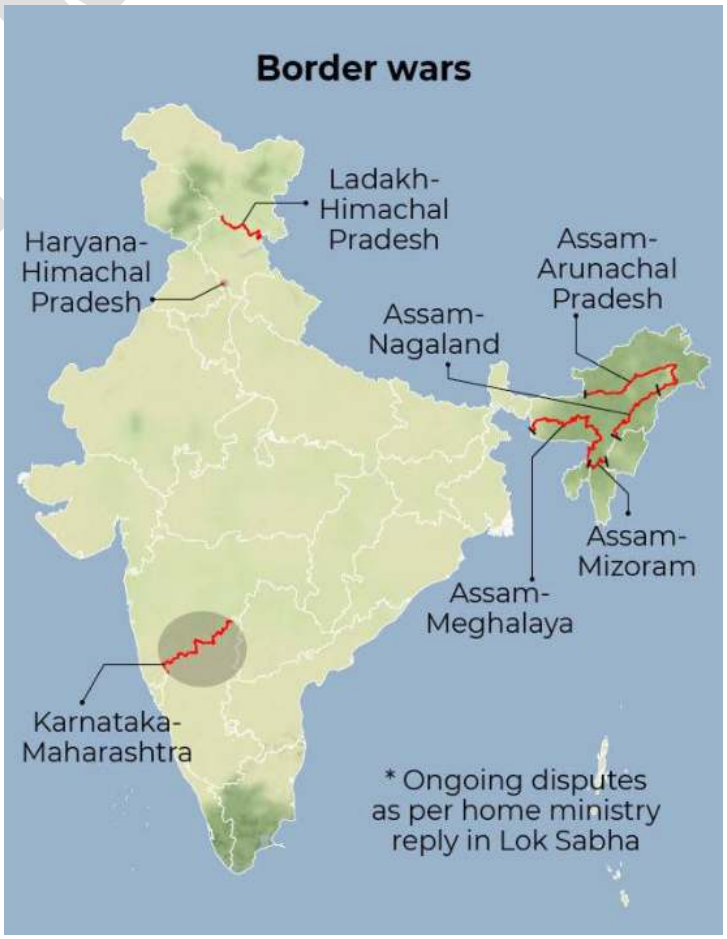
- **The BCAS can impose a fine of ₹50 lakh to ₹1 crore (depending on the size of the company) on airports and airlines if they fail to prepare and implement a security programme**, or if they initiate functions without seeking a security clearance.
    - Large airports can also face a penalty of ₹1 crore if they fail to plan the design and layout of the airport following the National Civil Aviation Security Programme.
- **Individuals will also face penalties ranging from ₹1 lakh to ₹25 lakh depending on the nature of the offence.**
- The BCAS will also be able to suspend or cancel an entity's airport security clearance and security programme.
- To deal with cyber security threats, each entity needs to protect its information and communication technology systems against unauthorised use and prohibit disclosure of sensitive aviation security information.
- **It authorizes airports to engage private security agents instead of CISF personnel at "non-core areas".**
- It will ensure an effective aviation security system in the country.

MAHARASHTRA-KARNATAKA BORDER DISPUTE

GS-II POLITY

About

- The **Maharashtra-Karnataka border dispute is decades-old, having its origins in the states' reorganisation in the 1950s.**
- Both Maharashtra and Karnataka were formed in 1960. But since its inception, Maharashtra has claimed that 865 villages along the border, including Nippani and Belgavi (earlier Belgaum), should be merged with it.
    - Karnataka has asserted rights over 260 Kannada-speaking villages along the Maharashtra border.
- **The former Bombay Presidency was a multilingual province, including some parts of North Karnataka.**
    - In 1948, the Belgaum municipality requested that the district, having a predominantly Marathi-speaking population, be included in the proposed Maharashtra state.
    - The States Reorganisation Act of 1956 made Belgaum a part of the then-Mysore State (which was renamed Karnataka in 1973).
- **The Mahajan Commission was set up by the Union Government of India in 1966 to look into the border dispute.**
    - In its report, the Commission recommended that 264 villages should be transferred to Maharashtra and that Belgaum and 247 villages should remain with Karnataka.
    - Maharashtra rejected the report, calling it biased and illogical. Despite demands from Karnataka, the Union government never implemented the report.



- In 2004, the Maharashtra government moved the Supreme Court for settlement of the border dispute. The case is now pending in the apex court.
- In the last Parliament session, **The Union Home Ministry (MHA) informed the lok sabha that 11 States and one Union**

Territory have boundary disputes between them.

The possible reason behind Inter-State Border Disputes

- **States Reorganisation:** Several inter-state border disputes have their roots in the reorganisation of states in the 1950s (which) was primarily based on language.
- **British rule:** Many of these state demarcations were based on district boundaries created by the British.
- **Geographical complexity:** Rivers, hills and forests straddle two states in many places and borders cannot be physically marked.

Way Forward

- **Interstate border disputes can be resolved by the states themselves or by the Centre through dialogue and political settlements.**
- Disputes can also be settled by the Supreme Court.
- Inter-state disputes need to be settled quickly and impartially otherwise they become festering sores which create friction, prevent development, give a perverse direction to the energies of people and governments and generate hard feelings on all sides.

COOPERATIVE SOCIETY AMENDMENT BILL / GS-II POLITY

In News

- The **Union Government has introduced the Multi-State Cooperative Societies (Amendment) Bill, 2022 in the lok sabha.**
- The amendment bill **aims to make the governance of multi-State cooperative societies more democratic, transparent and accountable**.

Key provisions of the Bill

- **Election of board members:** Under the original Act, elections to the board of a multi-state co-operative society are conducted by its existing board members. **The new Bill amended the provision and added that the Union government will establish the Co-operative Election Authority to conduct elections and other prescribed functions.**
  - The Authority will consist of a chairperson, vice-chairperson, and up to three members appointed by the Union government on the recommendations of a selection committee.
- **Only active members will be eligible to be elected as board members or office bearers** of the cooperative society.
  - Active members are those who are attending at least three consecutive general meetings.
- **Redressal of complaints:** The Union government will appoint one or more Cooperative Ombudsmen with territorial jurisdiction. The Ombudsman shall inquire into complaints made by members of cooperative societies.
  - The Ombudsman shall complete the process of inquiry and adjudication within three months from the receipt of the complaint.
  - Appeals against the directions of the Ombudsman may be filed with the Central Registrar (who is appointed by the Union government) within a month.
- **The amalgamation of co-operative societies:** The Bill allows co-operative societies (registered under state laws) to merge into an existing multi-state co-operative society.
  - To allow such a merger, at least two-thirds of the members of the cooperative society must be present and vote at a general meeting to must pass a resolution.
- **Fund for sick co-operative societies:** The Bill has a provision to establish the Co-operative Rehabilitation, Reconstruction and Development Fund for the revival of sick multi-state co-operative societies. A sick multi-state co-operative society has accumulated losses equal to or exceeding the total of its paid-up capital, free reserves, and surpluses, and has suffered cash losses in the past two years.
  - The Fund will be financed by multi-state co-operative societies that are in profit for the last 3 financial years. They will deposit either one crore rupees or 1% of the net profit into the Fund, whichever is less.
- **Specified co-operative societies:** According to the original Act, the Union government may give directions and supersede the boards of specified multi-state co-operative societies where the Union government has a shareholding of at least 51%.
  - The new Bill amends this provision and added that the Union government may give directions and supersede the boards of any multi-state co-operative society where the government has any shareholding or has extended any loan, financial assistance, or guarantee.
- **Composition of board of directors:** Under the original Act, the board of a multi-state co-operative society has a maximum of 21 directors. The board may co-opt two additional directors.
  - The Bill amends the composition of the board of directors to mandate the inclusion of; one Scheduled Caste or Scheduled Tribe member, and 2 women members.

  - The co-opted members must have experience in the field of banking, financing, co-operative management or specialisation fields related to the functioning of the multi-state co-operative society.
- **Increasing penalties:** Under the original Act, certain offences by a multi-state co-operative society or its officer or member including making false returns, furnishing false information, or disobeying any summons are offences. The fine for such offences extends from Rs 2,000 to Rs 10,000.
  - The Bill adds that the failure to file any return or information will also be an offence.
  - The fine for all these offences will extend from Rs 5,000 to one lakh rupees.

Cooperative Societies in India

- **A Cooperative Society can be defined as a voluntary association of individuals united voluntarily to meet their common economic, social, and cultural Interests.**
  - It aims to serve the interest of society through the principle of self-help and mutual help.
- **The roots of cooperative Societies in India were sown when the first Cooperative Societies Act was passed in 1904**.
- The Government Passed the Co-operative Societies Act of 1912.
- In 1958, the National Development Council (NDC) recommended a national policy on cooperatives and the setting up of Cooperative Marketing Societies.
- National Cooperative Development Corporation (NCDC) was set up under the National Cooperative Development Corporation Act, of 1962.
- **Union Government announced a National Policy on Cooperatives in 2002.**
- **The 97th Constitutional Amendment Act of 2011 granted constitutional status and protection to cooperative societies.** This Amendment introduced 3 changes in the constitution:
  - It made the right to form cooperative societies a fundamental right (Article 19).
  - It included a new Directive Principle of State Policy on the promotion of cooperative societies (Article 43B).
  - It added Part IX-B in the Constitution "The Co-operative Societies" (Articles 243-ZH to 243-ZT).
- **Provisions under Indian Constitution**
  - Indian Constitution under Part IX-B contains various provisions related to cooperative societies.
  - The state legislature may make provisions for the incorporation, election, regulation and winding-up of cooperative societies.
- **Organisation Structure**
  - The board shall consist of some directors as may be provided by the state legislature, but, the maximum number of directors of a cooperative society shall not exceed 21.
  - The state legislature shall provide for the reservation of one seat for the Scheduled Castes or the Scheduled Tribes and two seats for women on the board of every cooperative society having members from such a category of persons.
- The functional directors of a cooperative society shall also be the members of the board and such members shall be excluded to count the total number of directors (21).
- The term of office of elected members of the board and its office bearers shall be 5 years from the date of the election.

Significance of Cooperative Societies

- The village cooperative societies provide important inputs for the agricultural sector.
- Consumer societies meet their consumption requirements at concessional rates.
- Marketing societies help the farmer to get remunerative prices.
- The Cooperative processing units help in value additions to the raw products.
- **They also help in building up storage, warehouse, cold storage, rural roads and in providing facilities like irrigation, electricity, transport, education and health**.
- They play the role of a balancing factor between the public and private sectors and also supplement the work of the government and its agencies.
- Many Cooperative societies have Successfully promoted rural development
  - National Cooperative Development Corporation (NCDC)
  - National Agricultural Cooperative Marketing Federation of India (NAFED)
  - AMUL and Co-operative Rural Development Trust (CORDET)
- **They play an important role in poverty reduction, promoting women's empowerment, and improving literacy rate and skill development.**

Concern

- Cooperative Societies usually do not come forward to organise cooperatives of their consensus, many times it is done by the government or local administration.
- The cooperatives have **limited resources.**

- They grant loans only for agricultural operations. Farmers approach the money lenders to meet their other requirements.
- **Lack of co-operation, as the people rarely understand the importance of cooperation in their lives.** The absence of willing cooperation on their part hinders the growth of the cooperative movement.
- **Political interference acts as a barrier to the growth of cooperative societies**. The selection of beneficiaries is mostly done on political relations.
- The cooperative credit structure is criticized on the ground that it is mostly managed by landlords and large farmers.
- **Poor performance, increasing debt and overdue, inefficient administration and management of Cooperative societies.**

Way Forward

- Need to ensure transparency in the processes and independence in the functioning of Boards.
- Good Cooperative management includes **setting up clear objectives, accountability, sound planning, and establishing performance evaluation measures.**
- The objectives of the cooperative societies must be recognized in their long-term strategy.
- **Increase access to competitive and affordable external financing.**
- Better operational and financial performance through improved strategic decision-making.
- Take a comprehensive approach including working with the government, other institutions, and the public.
- Take a practical, ground-level approach.
- Improve the decision-making process, and introduce specialists at the board meeting.
- **Put the right people in the right place, and don't let internal organizational structures be politically influenced.**

CONJUGAL VISIT FOR PRISONERS / GS-II POLITY

About

- The **Punjab Government has promoted the right to life and personal liberty of prisoners by allowing conjugal visits for inmates.**
  - Conjugal rights are rights formed by marriage; the right of the husband or the wife to the company of their spouse.
- In the context of prisons**; conjugal visits refer to the concept of allowing a prisoner to spend some time in privacy with his spouse within the jail.**
- **Significance:** It is expected that **conjugal visits can have positive impacts on the psychological health of prisoners,** preservation of marital ties and, reduction in the rates of homosexuality and sexual aggression within prisons.
  - The initiative is **expected to strengthen matrimonial bonds and also ensure the good conduct of prisoners.**
- **Conjugal visits are internationally recognized** through the United Nations Standard Minimum Rules for the Treatment of Prisoners, the Universal Declaration of Human Rights, and the International Covenant on Civil and Political Rights etc.
  - In India, Most prison Acts and Rules across the country accept the importance of maintenance of continuity in family and social relations. However Currently, there are no laws in India that expressly allow conjugal visits to inmates.

Judicial view

- **In the *Jasvir Singh vs State of Punjab case*,** the High Court held that the **right to conjugality is available to prisoners under Article 21, subject to restrictions**.
- In the case of *Meharaj vs State case*, the Madras High court stated that even though conjugal visits could not be held as a fundamental right, the prisoner would still be eligible to avail leave for conjugal visits if there are 'extraordinary reasons' such as 'infertility treatments.'

The Punjab model

- The guidelines clarify that conjugal visits are a matter of privilege rather than a right.
- The average time for conjugal visits shall be 2 hours allowed once every two months.
- **The visiting spouse has to provide marriage proof and medical certificates** declaring that he or she is free from HIV or any other sexually transmitted disease, COVID-19 or any other infectious disease.

- **This facility will not be available for high-risk prisoners**, terrorists, child abuse and sexual offenders, death row convicts, prisoners who suffer from HIV etc.

AD-HOC JUDGES // GS-II POLITY

In News

- **To deal with the rising number of pendency, the Supreme Court of India has proposed "out-of-the-box" thinking, including roping in senior lawyers, to act as ad hoc judges in High Courts.**
- The court highlighted that senior advocates in High Courts may not be willing to give up their lucrative legal practices permanently but may be interested in joining the Bench as ad hoc judges under Article 224A of the Indian Constitution for a limited period of 2 years.

Ad-hoc judges

- Unlike standard judges, which are selected through a normal procedure for a set period. **Ad hoc judges are nominated by a unique process for a particular case, project, or period only.**
- Under **Article 127 of the Constitution of India, the Chief Justice of India can nominate a High Court judge as an ad hoc Supreme Court judge** for a specified time when a quorum of permanent judges is needed to continue or hold a Supreme Court session.
  - The Chief Justice can only execute this after consulting with the chief justice of the High Court and accepting the prior consent from the President of India.
  - The Ad hoc judge carries all of the power, authority, advantages and obligations of a Supreme Court judge.
- **Under Article 224A of the Indian Constitution, the Chief Justice of a High Court, with the previous consent of the President, may request any person who has held the office of judge of that court or any other High Court to sit and act as a judge of the High Court for that State**.
  - The Ad hoc judge carries all of the power, authority, advantages and obligations of a High Court judge.
- **Supreme Court Guidelines for Appointment of an Ad-hoc Judge:**
  - The court orally **outlined some guidelines** for the appointment and functioning of an ad-hoc judge.
  - The **Chief Justice of India may appoint a certain [retired] judge** if the **pendency goes beyond a certain limit.**
  - **Ad-hoc judges will be treated as the junior most.**
  - The retired judges would be chosen **based on their expertise in a particular field of dispute**.

Why ad-hoc judges?

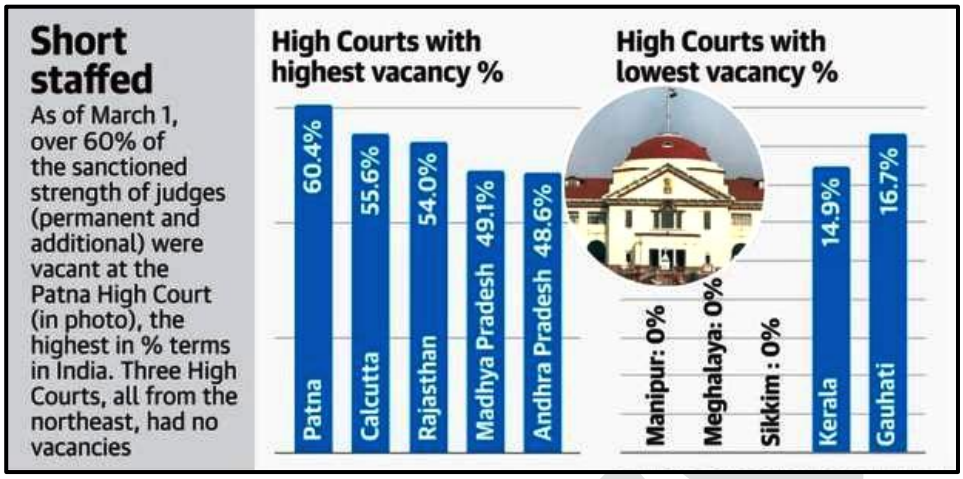
- **More than 70 thousand cases are pending in the Supreme Court** according to the latest data available on the National Judicial Grid.
- **Nearly 60 lakhs cases are pending in the High Courts.**
- **Over 40 million cases are pending in Subordinate Courts** across the country.
- The high pendency of Cases in Some tribunals indicates that the objective of setting them is not achieved.
- According to data compiled from the National Judicial Data Grid, **more than one lakh cases are pending in district and taluka courts for 30 years**. Over 90% of these cases are pending in just 4 states: Uttar Pradesh, Maharashtra, West Bengal, and Bihar.

Court	Pendency in 2019	Pendency in 2020	Pendency in 2021	Pendency in 2022
Supreme Court	59,535 (as on December 2019)	64,426 (as on December 2020)	69,855 (as on December 2021)	70,154 (as on March 2022)
High Courts	46,84,354 (as on December 2019)	56,42,567 (as on December 2020)	56,49,068 (as on December 2021)	58,90,726 (as on March 2022)
District & Subordinate Courts	3,22,96,224 (as on December 2019)	3,66,39,436 (as on December 2020)	4,05,79,062 (as on December 2020)	4,09,85,490 (as on March 2022)

Why is there high pendency in courts?

- **Lack of a sufficient number of judges** and high vacancies in the judiciary and long leave to judges deteriorate the already grim situation.
- Frequent adjournment of the cases even on frivolous issues.
- India has very few courts compared to its huge population.

- Excessive litigation from the government side, the government is the largest litigant, responsible for nearly half the pending cases and most of them are on petty issues such as interdepartmental conflict.
- **The lack of quality judges in the lower judiciary** leads to appeals to the higher judiciary in most cases.
- Archaic laws or vague laws present another challenge as it takes time to interpret the law and most of the time matters go to higher courts through appeal.



- Poor police investigation leads to poor collection of evidence and hostile witness thus adjourning the hearing for the next date.
- **Increasing the number of use of Public interest litigation (PIL).**
- Increasing awareness among citizens about their rights and law courts.

What are the consequences of the pendency of cases?

- Common people's faith in the judiciary declines.
- It denies true justice to under-trial prisoners, many of whom get acquitted after spending many years which is a violation of their fundamental rights and also spoil their whole life.
- **The economic cost of pendency is also very huge**. Projects worth billions get delayed amid delays in judgment. It is estimated that delay in justice costs 1.5% of GDP annually which also deters future investment in India.
- Delay in justice also fails to create deterrence in the mind of criminals thus crime goes on perpetuating.
- **Overcrowding of jails is also a result of a delay in judgment.**
- The criminalization of politics keeps on rising as culprits are not punished timely.

Steps need to be taken

- National Litigation Policy should be revised.
- **Address all 3 stages of dispute:**
  - Pre-litigation
  - Litigation
  - Post litigation stage.
- Establish Fair accountability mechanisms, Consequences for violation must be provided.
- Appointment of a Nodal Officer to regularly monitor the status of the cases in every department.
- **Promotion of alternative dispute resolution mechanisms to encourage mediation.**
- Coordinated action between government and judiciary.
- Judicial capacity should be strengthened in the lower courts to reduce the burden on higher courts.
- Increase expenditure on the judiciary.
- Improve court case management and court automation system.
- Create subject-specific benches.
- **Tax departments must limit their appeals** as their success rate is less than 30% at all three levels of the judiciary.
- Robust internal dispute resolution mechanisms
- Step-by-step online dispute resolution must be adopted as done by the Ministry of Consumer Affairs.
- Judges should write Shorter and more Pointed judgments.

Way Forward

- Courts need to monitor the progress of Cases based on urgency and type of Case.
- **Courts must set a time limit to dispose of certain types of Cases.**
- Understand why Some Courts perform well despite a Shortage of judges and adopt Such Courts as role models.
- Use of information and communication technology to improve the efficiency of the courts.
- Increase the number of judges and fill the vacancy as soon as possible.
- Increase the number of courts in India to tackle the huge population.
- **Improving the police investigation and scientific way of collecting evidence.**
- Reduce the leave of judges and increase the number of days of working in courts.

- Only genuine PIL must be entertained by Courts and courts must inflict heavy costs on frivolous PIL.
- Analytics tools can be developed in a manner that helps the judges monitor Cases based on parameters Such as how long an accused has been in judicial custody, Cases that Can affect the General public, and Cases that have been long pending.
- Alternative methods should be used for dealing with non-criminal offenders and petty criminals.

RECOGNITION OF NATIONAL OR STATE PARTY / GS-II POLITY

About

- The Aam Aadmi Party (AAP) is on track to be recognized as a national party by the Election Commission of India (ECI).
  - The Party was founded in 2012 by Arvind Kejriwal following the 2011 Indian anti-corruption movement.
  - The AAP is currently ruling in Delhi and Punjab.
  - The party's election symbol is a broom.
- **National Party**
  - As the name suggests that a national party would have a presence 'nationally', as opposed to a regional party whose presence is restricted to only a particular state or region.
- **At present, there are eight national political parties in India. They are;**
- Bharatiya Janata Party
- Communist Party of India
- Communist Party of India (Marxist)
- Indian National Congress
- Nationalist Congress Party
- National People's Party
- All India Trinamool Congress
- Bahujan Samaj Party

National Party enjoys the following benefits

- The election symbol of the National parties can't be used by any other political party in voting across India.
- National Parties get the time slot on national and state television and Radio to address the people and convey their message to people.
- National parties **receive land or building from the government to establish their party office.**
- National parties require only one proposer to file a nomination.
- National Parties are given two sets of electoral rolls free of cost by the Election Commission.
- The candidates contesting on the ticket of a National party get a copy of the electoral roll free of cost during the general elections.
- National parties can have up to **40-star campaigners** while others can have up to 20-star campaigners.
  - The expenditure incurred on the travelling and other expenses of star campaigners is not included in the election expenditure of the party candidate.

How a National party is defined

- The ECI has laid down some criteria for a party to be recognised as a National party, it's not a permanent tag and a party may gain or lose national party status from time to time, depending on the fulfilment of the conditions.
- As per the ECI's Political Parties and Election Symbols, 2019 handbook, **a political party would be considered a national party if it meets any one of the following conditions:**
  - It is a 'recognised' party in four or more states, or
  - If its candidates polled at least 6% of total valid votes in any four or more states in the last Lok Sabha or Assembly elections and have a minimum of four MPs in the last Lok Sabha polls, or
  - If it has won at least 2% of the total seats in the Lok Sabha from not less than three states.

- **To be recognized as a state party, a party needs to meet any one of the following conditions:**
  - At least 6% vote-share in the last Assembly election and have at least 2 MLAs, or
  - Have a 6% vote share in the last Lok Sabha elections from that state and at least one MP from that state; or
  - At least 3% of the total number of seats or three seats, whichever is more, in the last Assembly elections; or
  - At least one MP for every 25 members or any fraction allotted to the state in the Lok Sabha; or
  - Have at least 8% of the total valid votes in the last Assembly election or Lok Sabha election from the state.
- **AAP is soon to be officially recognized as the 9th National Party, as;**
  - The AAP is in power in Delhi and Punjab.
  - In the Goa Assembly elections, it received 6.77% of the vote and 2 seats.
  - In the Gujarat Assembly elections, it received nearly 13% of Votes and 5 seats.

NATIONAL JUDICIAL COMMISSION BILL 2022 // GS-II POLITY

About

- **A private member bill was introduced in the Rajya Sabha to regulate the appointment of judges through the National Judicial Commission**.
  - The National Judicial Commission Bill, 2022 was introduced after the majority of voice votes were in its favour.
- **The bill aims to;**
  - Regulate the procedure to be followed by the National Judicial Commission for recommending people for appointment as the Chief Justice of India and other judges of the Supreme Court and Chief Justices and other judges of High Courts.
  - Regulate judges' transfers.
  - Lay down judicial standards.
  - Provide for accountability of judges.
  - Establish credible and expedient mechanisms for investigating individual complaints for misbehaviour or incapacity of a judge of the apex court or a high court and regulate the procedure for such investigation.
- Many members opposed the bill and highlighted that the concept of NJAC has come under the consideration of the Supreme Court three times in 1993, 1998 and 2016.
  - All three times, while giving importance to the independence of the judiciary, the Supreme Court dismissed the framework of the NJAC.

Private Member Bill

- All Members of Parliament (MPs) other than ministers and Presiding officers are referred to as Private members.
- Bills introduced by Private members are called Private member bills.
- The introduction of a Private member bill requires one month's notice.
- 2nd half of every Friday, when parliament is in session, is reserved for debating private member bills.
- Private members' bill needs the backing of the government to get passed in Parliament.

National Judicial Appointments Commission (NJAC)

- The **National Judicial Appointments Commission (NJAC) was established by the 99th constitutional amendment Act, of 2014.**
  - The Commission was supposed to be responsible for the recruitment, appointment and transfer of judicial officers, legal officers and legal employees under the Union government and all state governments.
- The NJAC was supposed to replace the collegium system for the appointment of judges.
- **The Commission would have consisted of the following 6 persons:**
  - Chief Justice of India (Chairperson).
  - Two other senior judges of the Supreme Court.
  - The Union Minister of Law and Justice.
  - Two eminent persons: These 2 eminent persons would have been nominated by a committee consisting of the;
- Chief Justice of India
- Prime Minister of India
- Leader of Opposition in the Lok Sabha (or where there is no such Leader of Opposition, then, the Leader of the single largest Opposition Party in Lok Sabha).
- **Appointment of Chief Justice of India:** The NJAC shall recommend the seniormost judge of the Supreme Court for appointment as Chief Justice of India.
  - **Appointment of Supreme Court judges**: The NJAC shall recommend names of persons based on their ability, merit and other criteria specified in the regulations.
- **The veto power of members:** The NJAC shall not recommend a person for appointment if any two of its members do not

agree to such recommendation.

- The President has the power to ask NJAC to reconsider their recommendations. However, if the NJAC makes a unanimous decision while reconsidering, then the President has to make the appointment as per the NJAC's recommendations.
- **In October 2015, the Constitution Bench of the Supreme Court by a 4:1 majority struck down the NJAC as unconstitutional and upheld the Collegium system.**

Collegium System

- **Under the Collegium System, appointments/elevation of judges/lawyers to the Supreme Court and transfers of judges of High Courts and Apex Court are decided by a panel of the Chief Justice of India and the four senior-most judges of the Supreme Court.'**
- **The word 'Collegium' is nowhere mentioned in the Indian Constitution**, it has come into force as per Judicial Pronouncement.

Evolution of Collegium System

- **Under the Constitution, The Judges of the Supreme Court are appointed by the president**. The chief justice is appointed by the president after consultation with such judges of the Supreme Court and high courts as he deems necessary.
  - The other judges are appointed by the president after consultation with the chief justice and other judges of the Supreme Court and the high court as he deems necessary.
  - Consultation with the chief justice is obligatory in the case of the appointment of a judge other than the Chief justice
- **First judges case (1982):** The Supreme court held that consultation does not mean agreement and it only means an exchange of views.
- **Second judges case (1993):** The court changed its earlier ruling and changed the meaning of the word consultation to consensus.
  - It ruled that the advice tendered by the CJI is binding on the President in matters of appointment of SC judges. But any such advice would be tendered after CJI consults with two of his most senior judges.
- **Third judges case (1998):** The consultation process should be based on the plurality of judges.
  - **CJI should consult a Collegium of four senior-most judges before making a recommendation to the President** and even if two judges give an unfavourable opinion, he should not send the proposal to the President.

Way Forward

- The Collegium System is Criticised mainly due to the lack of transparency, Lack of Consensus among members, and Delay in Judicial appointments.
- The Court has taken several steps in promoting transparency in judicial appointments, such as recently the Court's collegium decide to publish a resolution promising to make public, on the court's website, its various decisions, including its verdicts on persons nominated for elevation as judges to the high courts, its choices of candidates for elevation to the SC, and its decisions on transfer of judges between different High Court.
- Judicial reform is the need of the hour as the limited supply of judges to cater for the vast demand for the attention of the courts by accumulating the cases has led to rising in the figurative price of justice.

PANDA TASK FORCE / GS-II POLITY

In News

- During the Winter Session of the Parliament, **members discussed the inclusion of several communities in the Scheduled Tribes lists of Uttar Pradesh, Tamil Nadu, and Himachal Pradesh.**
  - Many members have asked the government about the list of communities that were recommended by the Panda Task Force.

Panda Task Force

- **The Panda Task Force was formed in 2014 under the chairmanship of erstwhile Tribal Affairs Secretary Hrusikesh Panda**.
- The task force had **suggested a list of over 40 communities from across the country that it felt should be included in the Scheduled Tribes (STs) lists on a priority basis**.
  - Some of them are sub-sets of communities already categorised as ST.
  - Some others are phonetic variations of existing tribes.
  - Some are the ones who were left out when States were bifurcated.
  - Some are those omitted from lists.
  - Some are those losing out on categorisation because they were forcibly taken away from their homelands as contracted labour to other States or were displaced due to industrialisation.
- **The Taskforce named the following communities to be included in the ST list:**

  - In Odisha: Kandha Kumbhar, Jodia, Chuktia Bhunjia, Saara, Mankidia, Porja, Banda Paraja, Durua, and Paharia.
  - In Tamil Nadu: Pulayan
  - In Andhra Pradesh: Konda Kumari community.
- The task force mentioned that as many as 26 of the tea tribes of Assam, those who were forcibly taken as indentured labourers from states like Bihar, Jharkhand, and Odisha, should be included in the ST list.
  - Many indentured labourers belong to Mal Paharia, Bedia, Saora, Shabar, Kharia, Gond, Munda, Bonda, Mahli, Paraja, Chik Baraik, Kol, Khond (Kandha), Chero, Koya, Birhor, Bhumji, Halba, Majwar, Dhanwar, Baiga, Lodha, Nagasia, Bhil, Oraon, and Santal communities.
- It recommended the **inclusion of tribal communities of Maharashtra, Gujarat and Madhya Pradesh that had been displaced due to the Narmada Dam Project as this was an "involuntary migration".**
- It recommended the inclusion of various Devnagri versions of tribes in the ST list of Chhattisgarh, such as Bharia, Pando, Gadaba, Bhuihar, Nagasia, Dhangad and Kond.
- The task force highlighted that these communities continued to be excluded or were facing delays in inclusion due to the current procedure and criteria for inclusion in ST lists and had recommended changes to both.
  - It stated that the **present procedure "defeats the Constitutional objective for affirmative action and inclusion".**

The Process of adding to the ST List

- **The process of adding tribes to the ST list starts with a recommendation from the State governments.**
  - It is sent to the Tribal Affairs Ministry, which reviews and sends them to the Registrar General of India, Under the Home Ministry for approval.
  - After approval, it is sent to theNational Commission for Scheduled Tribes and then sent to the Cabinet for a final decision.
  - Once the cabinet finalizes it, then it introduces a bill in the parliament to amend the Constitution (Scheduled Castes) Order, 1950, and the Constitution (Scheduled Tribes) Order, 1950.
  - After the amendment bill is passed by both the Lok Sabha and Rajya Sabha, the President's office takes the final decision under Articles 341 and 342 of the Constitution:

THE CONSTITUTION OF INDIA PLACES TRIBAL DOMINATED AREAS IN CERTAIN STATES UNDER TWO SCHEDULES: FIFTH AND SIXTH. THIS ALLOWS THESE AREAS INCREASED AUTONOMY IN TERMS OF THE LOCAL ADMINISTRATION. BUT THESE TWO CATEGORIES HAVE DIFFERENCES WITHIN THEMSELVES.

Fifth Schedule	Sixth Schedule
Areas under this category are called 'Scheduled Areas'	Areas under this category are called 'Tribal Areas'.
Tribal dominated areas in 10 States: Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana.	Tribal dominated areas in Assam, Meghalaya, Tripura and Mizoram.
Tribal Advisory Committees in Scheduled Areas do not perform administrative duties directly and do not have much autonomy.	Autonomous District Councils in Tribal Areas have much autonomy, and carry out local level governance.
Panchayat Extension to Scheduled Areas is applicable here.	Panchayat Extension to Scheduled Areas is not applicable here as these areas already have autonomy in their self governance.

Tribal Area

- The **Indian Constitution states two types of areas:**
  - Scheduled Areas in terms of the 5th Schedule of the Constitution.
  - Tribal Areas in terms of the 6th Schedule.
- "The "Tribal Areas" are also mentioned under Article 244(2) of the Constitution.
- **For the declaration of Scheduled Areas, the criteria followed are;**
  - The predominance of the tribal population.
  - Closeness and reasonable size of the area.
  - Presence of a viable administrative unit such as a district, block or taluk.
  - Economic backwardness of the area as compared to neighbouring areas.

Constitutional Safeguards for STs

- **Article 15**, Special provisions for the advancement of other backward classes (which includes STs).
- **Article 29**, Protection of Interests of Minorities (which includes STs).
- **Article 46**, State shall promote, with Special care, the educational and economic interests of the weaker sections of the people, and in particular, of SCs, and the STs, and shall protect them from social injustice and all forms of exploitation.
- **Article 164**, Provides for Tribal Affairs Ministers in Bihar, MP and Orissa.

- **Article 243,** Reservation of seats in Panchayats.
- **Article 244,** Provisions of the 5th Schedule shall apply to the administration & control of the Scheduled Areas and Scheduled Tribes in any State other than the states of Assam, Meghalaya, Mizoram and Tripura which are covered under the 6th Schedule.
- **Article 275**, Grants in-Aid to specified States (STs & SAs) covered under 5th and 6th Schedules.
- **Article 330**, Reservation of seats for STs in Lok Sabha.
- **Article 337**, Reservation of seats for STs in State Legislatures.
- **Article 334**, 10 years period for reservation (Amended several times to extend the period).
- **Article 350,** Right to conserve distinct Language, Script or Culture.
- **Article 350**, Instruction in Mother Tongue.
- **Article 371**, Special provisions in respect of the NE States and Sikkim.
- Service Safeguards under Art 16, 335, and 320.
- **Safeguards under Various laws:**
  - SCs & STs (Prevention of Atrocities) Act.
  - Bonded Labour System (Abolition) Act.
  - Child Labour (Prohibition and Regulation) Act.
  - Forest Conservation Act, Panchayati raj (Extension to Scheduled Areas) Act.
  - Minimum Wages Act 1948.

NDIAC AMENDMENT BILL 2022 / GS-II POLITY

In News

- The **Parliament of India has passed a bill to rename the New Delhi International Arbitration Centre as the India International Arbitration Centre.**

New Delhi International Arbitration Centre (NDIAC)

- New Delhi International Arbitration Centre Act 2019 established the NDIAC to conduct arbitration, mediation, and conciliation proceedings.
- It declared the NDIAC as an institution of national importance.
- **NDIAC consist of 7 members including;**
  - A Chairperson who may be a Judge of the Supreme Court or a High Court or an eminent person with special knowledge and experience in the conduct or administration of the arbitration.
  - 2 eminent persons having substantial knowledge and experience in institutional arbitration.
  - 3 ex-officio members, including a nominee from the Ministry of Finance and a Chief Executive Officer (responsible for the day-to-day administration of the NDIAC).
  - A representative from a recognized body of commerce and industry, appointed as a part-time member, on a rotational basis.
- The members will hold office for 3 years and will be eligible for re-appointment.
- The **retirement age for the Chairperson is 70 years and for other members is 67 years.**
- **The key objectives of the NDIAC**;
  - Promoting studies in the field of alternative dispute resolution.
  - Providing training and organizing conferences and seminars in alternative dispute resolution matters.
  - Providing facilities and administrative assistance for the conduct of arbitration, mediation and conciliation proceedings.
  - Maintaining a panel of accredited professionals to conduct arbitration, mediation and conciliation proceedings.
  - To promote arbitration and conciliation in a professional, timely and cost-effective manner.
- The NDIAC required maintaining a fund which will be audited and certified by the Comptroller and Auditor-General of India.

New Delhi International Arbitration Centre (Amendment) Act, 2022

- It amended the New Delhi International Arbitration Centre Act, 2019.
- The amendment act renames the New Delhi International Arbitration Centre as the India International Arbitration Centre.
- The **original Act requires the Arbitration Centre to strive to facilitate the conduct of international and domestic arbitration and conciliation.**
  - The amendment act expands this to include the conduct of other forms of alternative dispute resolution.
  - The manner of conduct of arbitration and other forms of alternative dispute resolution will be specified by the central government through regulations.
- The original Act allows the central government to provide for removing any difficulties in implementing the Act up to 2 years from the date of commencement of the Act.

- The amendment act extends this period to 5 years.

Arbitration

- **Arbitration is a method of settling disputes without either party having to go to court.**
- **This involves a neutral third party who receives evidence, hears the arguments and then passes an order known as an award. The award is final.**
- Mandatory arbitration is also becoming popular now where contracts state that jurisdiction over disputes would only be settled by an arbitrator and not by a court.
- **In India, arbitration is backed by the Arbitration and Conciliation Act of, 1996 which was amended by the Arbitration and Conciliation (Amendment) Act, of 2015.**
  - The Act provides for a fair chance for both parties to be heard and to settle disputes.
  - The award has to be enforced under the Code of Civil Procedure, 1908.
  - The Act mandates that arbitration proceedings have to be completed within 12 months, however, if both parties agree, then the period can be extended by 6 months.
- **Significance of arbitration**
  - **Cost-effective:** Litigating a dispute in court is an expensive process**. Arbitration is a much more cost-effective way of settling disputes.**
  - **Speed:** There are well-defined time limits to pass awards, resulting in quick disposal of the matter.
  - **Fairness:** Arbitrators are usually appointed by both parties to the agreement resulting in a fair selection of the arbitrator.
  - **Awards passed are final**.
  - **Simple Procedure:** They are **not bound by any procedural laws of the land**. They are free to take on their procedure to hear arguments, receive evidence and pass awards.
  - **Confidentiality:** Arbitration proceedings are confidential, there is no public record preserved of the dispute. This makes whatever trade secrets or confidential details of the business remain between the parties themselves.
  - **Specialization:** Parties can choose an arbitrator skilled in the law they are facing disputes over, for example, patent law.

KARNATAKA RESERVATION BILL / GS-II POLITY

In News

- The **State Government of Karnataka introduced the Karnataka Scheduled Castes and Scheduled Tribes** (Reservation of Seats in Educational Institutions and Appointments or posts in the services under the state) **Bill, 2022 in the Legislative Assembly to increase reservations for Scheduled Castes (from 15% to 17%) and Scheduled Tribes (from 3% to 7%) in the state.**
- In 2015, the Nayaka Students Welfare Federation approached the Karnataka High Court, desiring the enhancement of the SC-ST quota.
  - In 2019, **based on the HC's orders, the state government appointed a committee under former High Court judge Justice HN Nagamohandas.**
  - In 2020, the committee submitted its report, saying that there was evidence of social and educational backwardness among the communities.
  - Based on the recommendation of the committee, the present bill introduced in the Assembly to increase the reservations for SCs up to 17% and STs up to 7%.

Reservation System in India

- The **Reservation system is an arrangement of affirmative action** where a certain percentage of seats are reserved in Public employment and educational institutions.
- In India, the Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs) and socially and economically backward communities who were earlier poorly represented in the Public sector and educational institutions are now covered under the reservation facility.
- In India, about **60% of seats are reserved** for various sections like ST, SC, OBC, and EWS in Government jobs and Higher Education Institutions.
  - 3% of seats are also reserved for differently-abled persons across all categories.
- **The reservation policy is also enforced for the Scheduled Castes and Scheduled Tribes for representation in the Indian Parliament**.
- The reservation issue has also remained a cause of conflict between the reserved and the non-reserved sections of society.

Arguments in the favor of Reservation System

- It ensures equality, by providing opportunities to people from backward classes.

- It promotes justice and human rights.
- Decreasing inequality by promoting economic opportunities for the lower section of Society.
- Correcting historical injustice
- **Reservation provides a level playing field** as it is challenging for people from backward sections that were historically deprived of education, skills, and wealth to all of a sudden start competing with those who had access to those resources for years.

Arguments against Reservation System

- **It Promotes Casteism and creates division in our society, and also encourages caste-based Politics**.
- Beneficiaries of reservation are mostly from the dominant class in backward castes. Thus, the marginalized section remains marginalized.
- Affects the productivity of an organization if unfit candidates get the opportunities.
- A reservation only provides a limited and short-term solution to historical injustice issues.
- Many deserving people from the upper castes are also affected by poverty and illiteracy.
- Reservation demands by various groups may cause social turmoil, such as during the Mandal Commission (1990).

Advantages	Disadvantages
Equal representation from the different sections of society.	It encourages casteism.
Equal opportunities are given to deserving candidates.	Chances of creating more castes in the society instead of eliminating it.
Encourages implementation of justice and human rights.	The dominant class or the creamy layer gets the entire benefit.
Maintains an economic balance in the society.	It opposes meritocracy.
Acts as compensation for the injustice and mistreatment done to the backward classes for centuries.	It provides short-term relief but, in reality, harms the society in the long run.
Levelling of the society for the candidates from every section of the society to compete.	The privileged gets more privileged.
Equality is essential to implement meritocracy.	It acts as a barrier between ethnicities.

Way Forward

- **Future economic growth in India is going to come from the Private Sector and entrepreneurship. To ensure that all Indians, regardless of caste, class and religion, can take part in economic growth, we must focus on basic skills.** We need to focus on reducing inequalities where they 1st emerge, within primary Schools.

APPROPRIATION BILL — GS-II POLITY

In News

- The Union Finance Minister had introduced the Appropriation bill in the Rajya Sabha for additional spending of Rs 3.25-lakh crore from the Consolidated Fund of India for the current financial year (2022-23).

Appropriation bill

- The Indian Constitution states that '**no money shall be withdrawn from the Consolidated Fund of India except under appropriation made by law'.**
- According to Article 114 of the Indian Constitution, **the government can withdraw money from the Consolidated Fund of India only after receiving approval from Parliament.**
- The Appropriation Bill **provides authority to the government to withdraw funds from the Consolidated Fund of India** for meeting the expenditure during a financial year.
- It is **introduced in the Lok Sabha after discussions on Budget submissions and Voting on Demand for Grants.**
- The defeat of the Bill in a parliament would lead to the resignation of the government.
- Once the bill is passed by the Lok Sabha it is then sent to the Rajya Sabha.
- **Rajya Sabha** can **suggest amendments to this Bill.** However, **Lok Sabha has the authority to either accept or reject the recommendations made by the Rajya Sabha.**
- After approval from the president, it becomes an Appropriation act.
- **Till the approval of the appropriation bill,** The government **cannot withdraw money from the Consolidated Fund of India.** However, during the period between introduction and approval, the government needs money to carry on its normal activities.
- To meet the expenses the Indian **Constitution under Article 116 has authorised the Lok Sabha to make any grant in advance**

for a part of the financial year. This provision is known as the 'Vote on Account'.

The Constitution of India provides for the following three kinds of funds for the Central government:

- Consolidated Fund of India (Article 266)
- Public Account of India (Article 266)
- Contingency Fund of India (Article 267)

Consolidated Fund of India

- All revenues received by the Government of India.
- All loans raised by the Government by the issue of treasury bills, loans or ways and means of advances.
- All money received by the government in repayment of loans forms the Consolidated Fund of India.
- All the legally authorized payments on behalf of the Government of India are made out of this fund.
- **No money out of this fund can be appropriated (issued or drawn) except in accordance with parliamentary law.**

Public Account of India

- All other public money (other than those which are credited to the Consolidated Fund of India) received by or on behalf of the government of India shall be credited to the Public Account of India.
- This includes provident fund deposits, judicial deposits, savings bank deposits, departmental deposits, remittances and so on.
- This account is operated by executive action; **the payments from this account can be made without parliamentary appropriation.**

Contingency Fund of India

- The Constitution authorized the Parliament to establish a 'Contingency Fund of India', into which amounts determined by law are paid from time to time.
- Accordingly, the Parliament enacted the contingency fund of India Act in 1950.
- The **fund is under the charge of the finance secretary on behalf of the president**.

DELIMITATION COMMISSION / GS-II POLITY

In News

- **The Election Commission of India to start the delimitation exercise of Assembly and Parliamentary Constituencies in Assam** as per Section 8A of the Representation of the People Act, 1950.

Details

- **Representation of the People Act, 1950 provides the allocation of seats in, and the delimitation of constituencies** for election to, the House of the People and the Legislatures of States, the qualifications of voters at such elections, the preparation of electoral rolls,
  - Section 8 of the Act: Delimitation of parliamentary and assembly constituencies in all States and Union Territories, except the States of Arunachal Pradesh, Assam, Jharkhand, Manipur and Nagaland.
  - **Section 8A of the Act:** Delimitation of Parliamentary and Assembly Constituencies in the States of Arunachal Pradesh, Assam, Manipur or Nagaland.
- **Under Article 170 of the Indian Constitution**, census figures (2001) shall be used for the readjustment of Parliamentary and Assembly Constituencies in the State.
  - Reservation of seats for the Scheduled Castes and Scheduled Tribes will be provided as per Articles 330 & 332 of the Constitution.
- During the delimitation exercise, the Commission will keep in mind the physical features, existing boundaries of administrative units, facility of communication, and public convenience as far as practicable.

About the Delimitation Commission of India

- **Delimitation means the act or process of fixing limits or boundaries** of territorial constituencies in a country or a province having a legislative body.
- **Article 82 -** Parliament by law enacts a Delimitation Act after every Census.
- **The Delimitation Commission is appointed by the President of India** and works in collaboration with the Election Commission of India.
- The main task of the commission is redrawing the boundaries of the various assembly and Lok Sabha constituencies based on a current census.
- **The representation of each State is not changed during this exercise.** However, the number of SC and ST seats in a state has changed under the census.

- **The present delimitation of constituencies has been done based on the 2001 census** under the provisions of the Delimitation Act, of 2002.
- The Commission is a powerful and independent body whose **orders cannot be challenged in any court of law.**
- The orders are laid before the Lok Sabha and the respective State Legislative Assemblies**. However, modifications are not permitted.**
- **Delimitation commissions have been set up four times in the past; 1952, 1962, 1972 and 2002,** under the Delimitation Commission Acts of 1952, 1962, 1972 and 2002.
- The present delimitation of parliamentary constituencies within states has been done based on the 2001 census.
- **According to the 84th amendment,** the present constituencies carved out based on the 2001 census shall continue to be in operation till 2026.

Functions of the Delimitation Commission

- The Delimitation Commission has to determine the number and boundaries of constituencies in such a manner that the population of all seats is the same, as far as practically possible.
- **The Commission also identifies the seats to be reserved for the scheduled castes and scheduled tribes communities, in areas where their population is significant.**
- The Commission releases draft proposals to the public through the Gazette of India and the official gazettes of states, and also in regional language newspapers.
- **It also conducts public sittings wherein the public's opinion is heard through written or oral representations.**
- If found appropriate, changes are made to the draft proposal.
- The final order is published in the Gazettes and comes into effect by a date specified by the President.

MARITIME ANTI-PIRACY BILL — GS-II POLITY

About

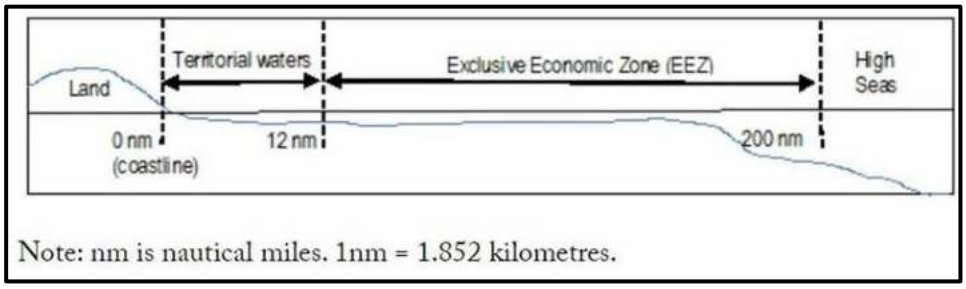
- The Parliament of India passed the **Maritime Anti-Piracy Bill to ensure an effective legal instrument to combat maritime piracy.**

Details

- The Anti-Maritime Piracy bill is **in line with the United Nations Convention on the Law of the Sea (UNCLOS).**
- It had once been introduced in 2019 before being sent to the Standing Committee for detailed perusal. This time, **the government has reintroduced the Bill after incorporating some amendments as advised by the Standing Committee.**
  - 14 of the 18 recommendations were accepted, one of the recommendations which were about having a Standard Operating Procedure for deportation and extradition of pirates by the Ministry of Home Affairs has been noted and will be addressed suitably. **The provision of "trial in absentia" has been dropped.**
  - The provision regarding death punishment has been amended in the Bill to also include life imprisonment**.**
- **India does not have a specific law or legal provision in the Indian Penal Code (IPC) on piracy.** This bill along with amendments would provide an effective legal instrument to combat piracy not only in our territorial waters but in the exclusive economic zone (EEZ) and also on the high seas
- **India's security and economic well-being are linked with the sea and maritime security is a prerequisite with more than 90% of our trade with the world taking place through sea routes** and more than 80% of our hydrocarbon requirement being seaborne.

What is the Anti-Maritime Piracy Bill?

- India currently does not have legislation on matters of piracy on the high seas**. Once enacted, the Anti-Maritime Piracy Bill will bring into law the UN Convention on the Law of the Sea, which India ratified in 1995.**
- Previously, pirates were prosecuted under the Indian Penal Code, 1860 (IPC), under provisions dealing with armed robbery and the admiralty jurisdiction of specific courts.
- However, **India's sovereignty is delimited by the outer boundary of its territorial waters — 12 nautical miles from the coast.**
- Acts of piracy committed by a foreigner outside India's territorial waters cannot be an offence under the IPC, and those accused in piracy cases have been acquitted due to the lack of jurisdiction.
- **The Anti-Maritime Piracy Bill defines piracy as an act of violence or detention by the crew or passengers of a private vessel or private aircraft on high seas**, directed against another vessel or aircraft and/or people or property on board.
- The Bill will apply to the sea beyond the Exclusive Economic Zone (EEZ), that is, beyond 200 nautical miles from India's coastline.



Geographical limits of different maritime zones.

What is the UN Convention on the Law of the Sea?

- The **UN Convention on the Law of the Sea (UNCLOS) is a set of rules to govern the oceans and the use of their resources**.
- It is based on the idea that all problems related to oceans are interrelated and need to be addressed by the global community as a whole.
- After over 14 years of collaborative work by more than 150 countries of the world, the Convention was opened for signature in 1982, in Montego Bay, Jamaica.
- **UNCLOS governs all aspects of ocean space,** including delimitation, environmental control, marine scientific research, economic and commercial activities, transfer of technology and the settlement of ocean-related disputes.
- To deal with incidents of piracy on the high seas, UNCLOS says that Member States are allowed to seize a pirate ship or aircraft or a vessel that has been captured by pirates, arrest the persons involved and seize the property on board. The seizure, however, must be carried out either by warships or military aircraft, or have clear markers that establish they are in government service.
- The judiciary of the States that carry out the seizure and arrests are allowed to decide penalties and how to deal with seized property.

What is the need for anti-piracy regulations?

- **The Gulf of Aden, which separates Somalia and Yemen and connects the Arabian Sea to the Red Sea and further to the Mediterranean Sea through the Suez Canal**, has been one of the deadliest areas in the oceans due to a large number of piracy incidents.
- This is also one of the most important trade routes for countries in Asia, Europe, and on the eastern coast of Africa.
- Due to an increased naval presence in the Gulf of Aden, it has been observed that piracy operations are shifting towards the east and south, which increases their proximity to India's west coast.
- **The absence of dedicated domestic legislation on piracy has also denied effective prosecution of pirates** apprehended by the Indian Navy or Coast Guard in the past.

UTTARAKHAND FREEDOM OF RELIGION (AMENDMENT) ACT 2022 — GS-II POLITY

About

- The **Governor of Uttarakhand gave formal approval to the State's Freedom of Religion (Amendment) Act**.
  - The State Government issued a formal notification of the amended act which made forced conversion a "crime".
- The Amendment act amended the 2018 law which has a provision of punishment of one to five years for conversion by force or inducement.
- **According to the amended Act;**
  - Conversion by force, greed or fraud will be considered a crime, and those found guilty will get imprisoned for up to 10 years.
  - A fine of ₹50,000 has been made compulsory.
  - Anyone found guilty of conversion will have to pay up to ₹5 lakhs to the victim.

Constitutional Articles related to Freedom of Religion

- **Article 25** says that all persons are equally entitled to freedom of conscience and the right to freely profess, practice and propagate religion.
  - **Freedom of conscience:** Inner freedom of an individual to frame his relation with God or Creatures in whatever way he desires.
  - **Right to Profess** Declaration of one's religious beliefs and faith openly and freely.
  - **Right to Practice:** Performance of religious worship, rituals, ceremonies and exhibition of beliefs and ideas.
  - **Right to Propagate**: Transmission and promotion of one's religious beliefs to others. But, it does not include a right to

convert another person to one's religion.
  - Article 25 covers religious beliefs and also religious practices (rituals).
- **Article 26: Freedom to Manage Religious Affairs,** every religious denomination or any of its sections shall have the following rights:
  - Right to establish and maintain institutions for religious and charitable purposes.
  - Right to manage its affairs in matters of religion.
  - Right to own and acquire movable and immovable property.
  - Right to administer such property under the law.
- **Article 27 - Freedom from Taxation for the Promotion of a Religion**
  - No person shall be forced to pay any taxes for the promotion or maintenance of any particular religion or religious denomination.
  - The **State should not spend the public money collected by way of tax for the promotion or maintenance of any particular religion.**
  - This provision **prohibits the State from favouring and supporting one religion over the other**. This also means that taxes can be used for the promotion or maintenance of all religions.
  - This provision **prohibits only the levy of a tax and not a fee.**
- **Article 28 - Freedom from Attending Religious Instruction**
  - **No religious instruction shall be provided in any educational institution wholly maintained out of State funds.**
  - No person attending any educational institution recognised by the State or receiving aid out of State funds shall be required to attend any religious instruction or worship in that institution without his consent.
- **Article 29- Protection of Interests of Minorities**
  - It provides that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same.
  - No citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, or language.
- **These rights are subject to public order, morality, health and other provisions relating to fundamental rights.**
  - The State is permitted to regulate or restrict any economic, financial, political or other secular activity associated with religious practice.

Religious conversion

- Every individual has a natural entitlement to religious faith and freedom of conscience, a right to adopt or abandoned any faith of his own choice. Religious conversion means adopting a new religion, a religion that is different from his previous religion or religion at his birth.
- **Reasons behind religious conversion:**
  - Conversion by force.
  - Conversion by offering a better life. It means offering economic incentives for one to come out of the religion.
  - Conversion for marriage.
  - Conversion to escape the rigid hierarchical system caste system.
  - Conversions by free will or free choice as the tenets of other religions appear closer to the person.
  - Conversion to get reservation benefits.
- **At the central level, India does not have any law which provides any sanction in case of forcible conversions.** In 1954, an attempt was made to pass the Indian Conversion (regulation and registration bill) but Parliament failed to pass it due to heavy opposition. **The need of the hour is to pass a strict anti-conversion bill to curb forced conversion in society.**

Arguments in favour of an anti-conversion bill

- These laws only ban and punish forceful religious conversion.
- Fundamental rights under Article 25 'Right to propagate a religion" did not extend to forced conversions.
- There is no fundamental right to convert another person to one's religion.

Arguments against the anti-conversion bill

- According to some activists, "Such laws are used to target religious minorities and interfaith couples".
- These laws would be used to target even voluntary conversions and curb the fundamental rights of "Freedom of conscience" under Article 25.
- These Acts do not satisfy the test of reasonableness and fairness and also go against the fundamental rights under Article 14 and Article 21" of the Constitution.

Way forward

- Anti-conversion laws have been challenged in courts ever since Odisha moved the first such legislation in 1967. However, the courts have a mixed record defending the freedom of choice about religion, ruling in favour of individual liberty in some cases but not in others.
- **The High Court on many occasions clearly said that while a person has the right to believe and the right to change their beliefs, they also have a right to keep their beliefs secret.**

MAHARASHTRA LOKAYUKTA ACT, 2022 / GS-II POLITY

In News

- The **State Assembly of Maharashtra unanimously passed the Maharashtra Lokayukta Act, 2022**.
  - It will give additional powers to the State Lokayukta to direct state agencies to probe public servants, including the chief minister and state ministers.

Key provisions of the Act

- **The current or former chief minister of Maharashtra can be investigated by the Lokayukta** only if the motion for the same is passed by the Legislative Assembly by a two-thirds majority.
- Approval of the governor and views of the group of ministers appointed by the governor are required to conduct an inquiry into present or former ministers.
- The approval of the Council chairperson or Assembly speaker is required to probe the Legislative member.
- The Lokayukta will require approval from the minister concerned to probe the municipal corporator or sarpanch.
- **It has brought IAS officials under the scope of the probe of the Lokayukta,** but it will require the approval of the chief minister and the views of the chief secretary to initiate the probe.

Historical Background

- The Lokpal-Lokayukta issue has always generated Controversy in the country.
- **The term 'Lokpal - Lokayukta' was first mentioned in the report of the Administrative Reforms Commission in 1966, The Commission was headed by Morarji Desai.**
- The idea was to establish an ombudsman to redress public grievances against Political Corruption and investigate Corruption charges against Public officials and Ministers of the government.
- **The first Lokpal bill was introduced in the Lok Sabha in 1968** which lapsed with the dissolution of the House.
- **After 10 failed attempts in the last 45 years, finally, the Lokpal and Lokayuktas Bills were passed by Parliament in 2013**. Anna Hazare's movement and the active involvement of civil society generated a lot of moral pressure on the Government which ultimately led to the passing of the Bill.

Features of Lokpal and Lokayuktas Act 2013

- It established the institution of the Lokpal at the Center and the Lokayukta at the State level.
- **Lokpal is headed by the Chief Justice of India or a retired judge.**
- The **Lokpal Jurisdictions cover the Prime Minister, Ministers, Members of Parliament and Groups A, B, C and D officers and officials of the Central Government.**
- **The Lokpal consists of a Chairperson with a maximum of 8 members of which 50% shall be judicial members.**
  - 50% of the members of the Lokpal shall come from amongst the SCs, the STs, the OBCs, minorities and women.
- **The Chairperson and the members of Lokpal shall be selected through a Selection Committee consisting of;**
  - The Prime Minister
  - Lok Sabha speaker
  - Opposition leader in the Lok Sabha
  - Chief Justice of India or a sitting Supreme Court Judge nominated by the Chief Justice of India.
  - An eminent jurist to be nominated by the President of India.
- The Lokpal will have administrative power over any investigating agency, including the CBI, for cases transferred to them by the Lokpal.
- **A Committee chaired by the Prime Minister will recommend the selection of the Director of CBI**.
- **It included the provisions for attachment of property** of public servants gained by corrupt means, even while the prosecution is pending.
- **It lays down clear timelines.** For preliminary enquiry, it is three months and extendable by three months. For investigation, it is six months which may be extended by six months at a time.
- It enhances the maximum punishment under the Prevention of Corruption Act from seven years to ten years.
- Institutions which are financed fully or partly by the Government are under the jurisdiction of Lokpal, but institutions aided

by Government are excluded.

- **Receiving donations of more than ₹10 lakhs a year from foreign sources under Foreign Contribution Regulation Act (FCRA) is brought under the jurisdiction of Lokpal.**
- Mandatory for States to set up Lokayukta through the enactment of law within 365 days from the date of enactment of this Act.
- The Act provides freedom to the states to decide about the structure and functioning of the Lokayukta in their respective states.

Lokayuktas

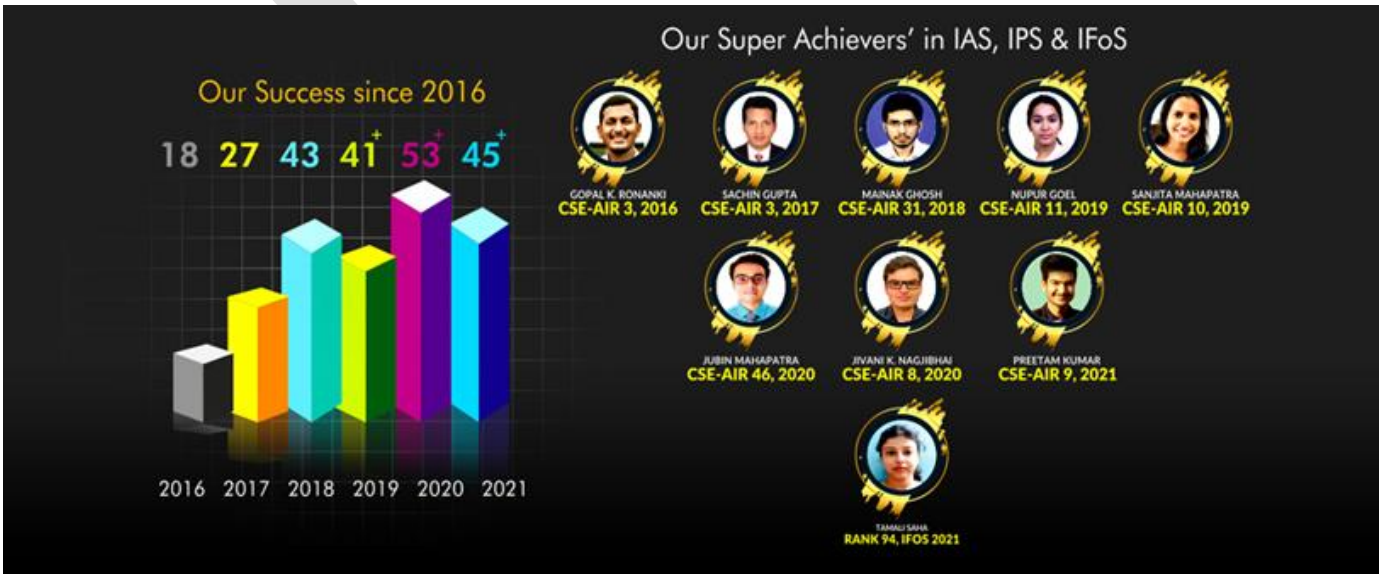
- **When the Lokpal and Lokayuktas Act 2013 were enacted, at that time, 21 states and 1 Union Territory (Delhi) already had a functional institution of Lokayuktas.**
- The institution of Lokayukta was 1st established in Maharashtra in 1971.
- Kerala enacted the Lokayukta act in 1999.
- The Lokayukta law was enacted to inquire into cases of corruption of Public officials, Ministers, legislators, etc.

Concerns

- The **structure of the Lokayukta is not the same in all the states.**
- The Lokayukta and upalokayukta are appointed by the governor of the state. While appointing, the governor in most of the states consults the chief justice of the state high court, and the leader of the Opposition in the state legislative assembly.
- There is **no uniformity regarding the jurisdiction of Lokayukta in all the states.**

Way forward

- According to Article 164, the Chief Minister or a Minister holds office at the pleasure of the Governor. **The Constitution of India does not mention any external pressure on the Governor to withdraw his pleasure or dismiss the Chief Minister or a Minister.**
    - The **Sarkaria Commission had suggested that the Governor can dismiss a Chief Minister only when he loses his majority in the Assembly and refuses to step down. The Supreme Court has also accepted this recommendation of the Sarkaria Commission.**
    - The Chief Minister cannot be asked to resign when he enjoys a majority in the House. The Governor, being a high constitutional authority, cannot be pressurized by any law to act in a particular manner which conflicts with his constitutional duties and functions.
- No agency created by a law or made by the Assembly could pressurize the Governor to act in a particular way. If it does, then it is a violation of the Constitution.
- Appointment of Lokpal in itself is not enough. The government needs to address several other issues based on which people are demanding a Lokpal.
- To tackle the problem of corruption, the **Lokpal and Lokayukta should be strengthened**; **they must be empowered with functional autonomy** and must be financially, administratively and legally independent so that they can investigate cases impartially without any external pressure.



HORTICULTURE CLUSTER DEVELOPMENT PROGRAMME

About

- The Union Ministry of Agriculture and Farmers Welfare prepared the **Horticulture Cluster Development Programme (CDP) intending to promote the agriculture sector and to increase the farmers' income by offering them a reasonable price for their produce.**
- The Minister announced that the states of Arunachal Pradesh, Assam, West Bengal, Manipur, Mizoram, Jharkhand, Uttarakhand etc. soon be included in the list of 55 clusters, identified under the programme with their focus/main crops.
- The Minister highlighted that the land available with the Indian Council of Agricultural Research (ICAR) affiliated institutions within the identified clusters should be utilized for the implementation of this programme.

Horticulture Cluster Development Programme

- It is a **Central Sector Scheme and a component of the National Horticulture Board (NHB) to enhance the global competitiveness of the Indian horticulture sector**. The National Horticulture Board has been designated as the Nodal Agency for the implementation of the Cluster Development Programme.
- It is designed to **leverage the geographical specialization of horticulture clusters and promote integrated and market-led development** of preproduction, production, post-harvest, logistics, branding, and marketing activities.
- For the implementation of the CDP, a Government/Public Sector entity is appointed as a Cluster Development Agency (CDA) based on the recommendations of the State/Central Government.
- This involvement of state government bodies through CDA will ensure the institutionalization of learning which can be replicated in future for the development of new clusters in the country.

National Horticulture Board (NHB)

- The National Horticulture Board (NHB) **was set up by the Government of India in 1984 as an Autonomous organization under the administrative control of the Ministry of Agriculture and Farmers Welfare**.
- It was registered as a society under Societies Registration Act with its headquarters at Gurugram.
- **The broad aims and objectives of the Board are to develop;**
  - Production clusters/hubs for integrated Hi-tech commercial horticulture.
  - Development of Post-harvest and cold chain infrastructure.
  - Ensuring the availability of quality planting materials.
  - To promote the adoption of new technologies/tools/ techniques for Hi-tech commercial horticulture etc.

India's position in the production of horticulture crops

- **India ranks second in fruits and vegetable production in the world**, after China.
- Its horticulture production has increased by 30% in the last five years.
- **India is the second largest producer of fruits and vegetables** in the world and first rank in the production of Banana, Mango, Lime & Lemon, Papaya and Okra.
- Last year, the total horticulture cultivation was 27.48 million hectares and according to the second advanced estimate, in 2021-22, it could be 27.74 million hectares.

Challenges in the Horticulture Sector

- The minimum Support Price (MSP) does not apply to this sector.
- Lack of machinery and equipment.
- High price fluctuations.
- Lack of good cold chain storage and transport networks.

Initiatives taken

- **Horticulture Area Production Information System (HAPIS)** -a web-enabled information system by which data from the states/districts are reported. This minimizes the time lag and maximizes the coverage area.
- **Coordinated programme on Horticulture Assessment and Management using geoinformatics (CHAMAN) -** to develop a scientific methodology for estimation of area & production under horticulture crops. Method used: Remote Sensing and Sample Survey Techniques.
- **The mission for Integrated Development of Horticulture (MIDH)** is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector. Under MIDH, the Government of India (GOI) contributes 60%, of the total outlay for developmental programmes in all the states except states in the North East and the Himalayas, and 40% share is contributed by State Governments. In the case of the North Eastern States and the Himalayan States, GOI contributes 90%.

- **Schemes under it are** National Horticulture Mission (NHM); Horticulture Mission for North East and Himalayan States (HMNEH); National Horticulture Board (NHB); Coconut Development Board (CDB) & Central Institute of Horticulture (CIH), Nagaland.

Way Forward

- Science and technology-led advancement
- **Improvement in quality seeds & plants and bringing newly introduced cultivators** that ensure a quick and efficient cultivation process.
- Imparting meaningful education related to Horticulture to upscale youth knowledge regarding various government schemes and modern equipment and machinery.
- Adopt post-harvest management exercises to enhance the value of fruits in the long run.
- **Value addition is the process that meets the requirements of nutritional security**. It boosts the economic value of Horticulture crops.
- Organizing Research & Development Programmes at the National level.
- **Establishing a better long-distance transportation network** should be a task of utmost importance to ensure smooth and hindrance-free transportation of fresh Horticultural produce.
- Preserved cultivation, hydroponic and aeroponic should get enfolded for polishing up productivity along with the quality of produce.

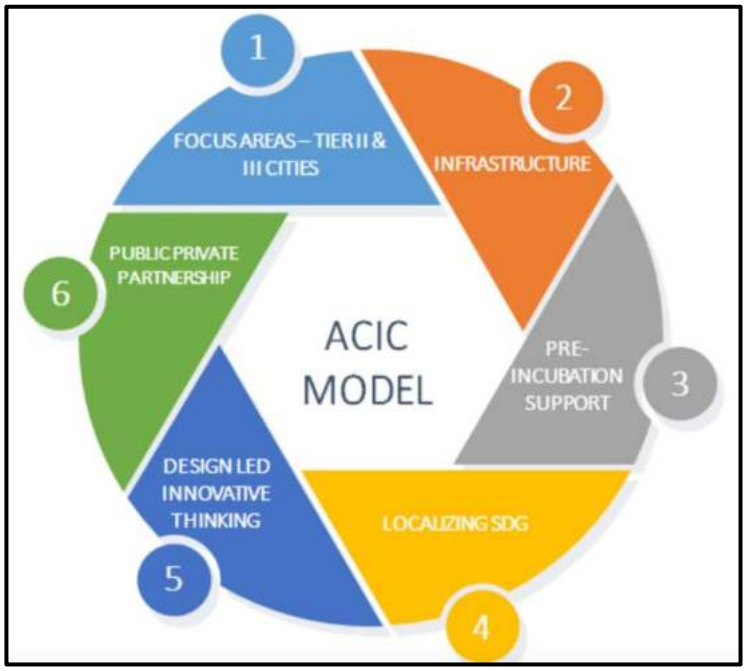
ATAL COMMUNITY INNOVATION CENTRE (ACIC) PROGRAM / GS-II GOVERNANCE

About

- Recently, **Atal Innovation Mission (AIM), NITI Aayog has announced the applications for the Community Innovator Fellowship (CIF).**
- The initiative **aims at encouraging knowledge building and providing infrastructure support to aspiring community innovators.**
  - A Community Innovator Fellow is an individual with an entrepreneurial mindset, with an idea to solve a community challenge through enterprise.
  - This is a one-year-long intensive fellowship program wherein aspiring community innovators can apply irrespective of their socio-economic background.
- Currently, 22 Community Innovator fellows are being incubated at the Atal Community Innovation Centre (ACIC) program.
  - AIM has been setting up Atal Community Innovation Centers across the country.

Atal Community Innovation Centers (ACIC)

- They are established **to serve the unserved/underserved areas of the country concerning the start-up and innovation ecosystem.**
- **ACIC aims to:**
  - Provide equitable opportunities, especially by reducing the lab-to-land distance and creating a space for the pre-incubation of ideas/solutions to reach the innovators at the bottom of the pyramid through Public Private Partnerships (PPP) model.
  - Enable local communities to convert or upgrade their ideas into products and services, by blending creativity, science and technology, design and risk-seeking approaches that constitute the heart of grassroots innovation.
- **ACIC Model**
  - The focus is on the Unserved and Underserved regions in India in terms of idea generation, promotion of innovations and innovators at the grassroots level.
  - The physical space of the ACIC provides a gateway for experimentation, engagement and participation.
    - ✓ Financial assistance of 2.5 crores is provided to the ACIC for running space, innovation and outreach operations.
  - Aspiring entrepreneurs in the pre-incubation process will be provided directional training and mentoring by a business or



research expert in making their ideas viable

- **ACIC will nurture Sustainable Development Goals (SDGs) innovations and entrepreneurial ventures.**
  - ✓ The aspiring innovators in the community will be educated about the SDGs and innovations and entrepreneurial ventures catering to SDG transformations.
- Knowledge of design methods and their integration into industry and government can help people articulate latent needs and find local solutions to these needs.
- Diversifying finances and networking can build a competitive and more productive ecosystem of development and progress.

Atal Innovation Mission (AIM)

- The Atal Innovation Mission was initiated **by the NITI Aayog in 2016** to promote innovation and entrepreneurship across the country.
- The main objective of the mission is to **create and promote an ecosystem of innovation and entrepreneurship** at schools, universities, Research institutions, MSMEs and Industry levels.
- Under the Mission, **Atal Tinkering Labs are established to promote a creative, innovative mindset in schools.**
  - At the school level, AIM is setting up state-of-the-art Atal Tinkering Labs (ATL) across all districts across the country.
  - These ATLs are dedicated innovation workspaces on the latest technologies like 3D Printers, Robotics, the Internet of Things (IoT), etc.
- Atal Innovation Tinkering challenges are regularly held in the school as well as by AIM every month to ensure students' active involvement in creating innovative solutions to solve problems in their community and the country.
- **Atal Incubators to Promote entrepreneurship in universities and industry**.
- Atal Community Innovation Centers to promote the benefits of technology to the underserved regions of India including Tier 2, Tier 3 cities, Aspirational districts, and tribal, hilly and coastal areas.
- **Mentor of Change**: To encourage a vibrant ecosystem of innovation, AIM is promoting active collaboration between Government, Academia, Industry, Individuals and Societal focused NGOs.

NITI Aayog

- The creation of the Planning Commission was inspired by the USSR/Soviet Model, the Prime Minister established a Planning Commission in 1950 to design the five-year Plans for India.
  - In 2015, it was replaced by a new organization named **National Institution for Transforming India (NITI).**
- **Promote Cooperative Federalism**
  - The Governing Council of NITI Aayog has Lieutenant Governors of Union Territories and State Chief Ministers.
  - NITI Aayog Constituted a Committee of State Chief Ministers to examine important issues.
- **Promote Competitive Federalism**
  - NITI Aayog has Prepared online dashboards to rank the States on various indicators of development Such as;
    - ✓ Sustainable Development Goals (SDG) India Index.
    - ✓ Health Index.
    - ✓ School Education Quality Index.
    - ✓ Digital Transformation Index.
  - Launched Aspirational District Programs for monitoring the progress of backward districts.
- **NITI Aayog has not been given the mandate or Powers to impose Policies on States.**
  - NITI Aayog is a think tank or an advisory body.
- The Powers for the allocation of funds has not been given to the NITI Aayog. The Powers are with the Finance Ministry.
- As a 'think-tank', **Niti Aayog has helped the government In framing various Policies** on;
  - Clean energy
  - Methanol based economy
  - Infrastructure, human development etc.
  - The model acts on agricultural land leasing, livestock Selling etc.
- NITI Aayog regularly organizes Seminars, Workshops, and Conferences.
- NITI initiated Atal Innovation Mission (AIM) to help Startups. NITI is developing the National Program on Artificial Intelligence.
- NITI's approach is modernized, forward-looking, and less bureaucratic; NITI Aayog is playing an important role as a think tank for Economic growth, Human development and Good governance in India.

Government Schemes to Support Startups in India

- **SAMRIDH (Startup Accelerators of MeitY for Product Innovation, Development, and growth) Scheme** to provide funding support to startups along with helping them bring skill sets together which will help them grow successfully.

- **Startup India Seed Fund** - The Startup India Seed Fund Scheme (SISFS) aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- **Startup India Initiative** gives tax benefits to startups under this scheme.
- **A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship (ASPIRE) initiative** to offer proper knowledge to entrepreneurs to start their businesses and emerge as employers.
- **Pradhan Mantri Mudra Yojana (PMMY)** provide startup loans of up to INR 10 lakhs to small enterprises and non-corporate business and non-farm small/micro-enterprises.
- **eBiz** - the first electronic government-to-business(G2B) portal, to transform and develop a conducive business environment in the country.
- **"Support for International Patent Protection in E&IT (SIP-EIT)".** This scheme provides financial support to MSMEs and Technology Startups for international patent filing.
- **Multiplier Grants Scheme (MGS):** This scheme aims to encourage collaborative Research & Development (R&D) between industry and academics/institutions for the development of products and packages. Under the scheme, if the industry supports the R&D of products that can be commercialized at the institutional level, the government shall provide financial support which will be up to twice the amount provided by the industry.
- **Venture Capital Assistance (VCA) scheme** by Small Farmer's Agri-Business Consortium (SFAC) for the welfare of farmer-entrepreneurs. It intends to assist in the form of term loans to farmers so that the latter can meet the capital requirements for their project's implementation.
- **Start-ups' Intellectual Property Protection (SIPP) scheme** was launched to encourage innovation and creativity in startups. Under this scheme, an 80% rebate for patent filing fees and 50% for trademark filing is provided to startups.

GRIH PRAVESH PROGRAMME / GS-II GOVERNANCE

In News

- The Prime Minister of India has inaugurated and laid the foundation stone of several development projects worth over 6,800 crore rupees in Tripura and Meghalaya.
- In Tripura, the Prime Minister launched projects worth 4,350 crore rupees. The projects include;
  - **'Grih Pravesh' programme for beneficiaries under Pradhan Mantri Awas Yojana - Urban and Pradhan Mantri Awas Yojana - Rural.**
- Griha Pravesh (ceremony performed when entering one's new house).

Pradhan Mantri Awas Yojana

- The **Ministry of Housing and Urban Poverty Alleviation launched Pradhan Mantri Awas Yojana in 2015.**
- The Programme was initiated with the **objective of 'Housing for All by 2022'**.
- Providing housing Facilities to rural poor and urban poor including slum dwellers
- **Financial assistance is provided** to eligible beneficiaries for the construction of pucca houses.
- The **Centre and States share the Cost** of the houses made under the scheme.
- The mission has **2 Components**: Pradhan Mantri Awas Yojana (Urban) and Pradhan Mantri Awas Yojana (Rural).
- **Pradhan Mantri Awas Yojana Gramin (PMAY-G)** was formerly called the Indira Awas Yojana and was renamed in March 2016.
  - It is targeted at promoting accessibility and affordability of housing for all of rural India with the exceptions of Delhi and Chandigarh.
  - Under the PMAY-G, financial assistance of Rs 1.20 lakh in plain areas and Rs 1.30 lakh in hilly states is provided to a beneficiary.
  - The cost is shared by the Centre and state in a ratio of 60:40 in plain areas and 90:10 for hilly states (special category states which include 8 North Eastern States, Himachal Pradesh, Uttarakhand and J&K).
  - In the UTs, including Ladakh, the Centre bears 100% of the expenditure on the implementation of the rural housing scheme.
- **Pradhan Mantri Awas Yojana (Urban) Programme**
  - **In Situ Slum Redevelopment**: A slum rehabilitation grant of Rs. 1 lakh per house, on average, would be admissible for all houses built for eligible slum dwellers in all such projects. Slums so redeveloped should compulsorily be denotified.
  - **Affordable Housing through Credit Linked Subsidy:** Under Credit Linked Subsidy, beneficiaries of the Economically Weaker Section (EWS) and Low Income Group (LIG) can seek housing loans from Banks, Housing Finance Companies and other such institutions for new construction and enhancement of existing dwellings as incremental housing.
  - **Affordable Rental Housing Complexes**: It will be a mix of single/double bedroom Dwelling Units and a Dormitory of 4/6 beds including all common facilities which will be exclusively used for rental housing for a minimum period of 25 years.

- **Aadhar Card is mandatory** to take benefit of the scheme.
- Economically weaker sections and Middle-Income Groups are also eligible for financial assistance under the Missions.
- **Priority is given to SCs, STs, OBSs, differently-abled persons, senior citizens, minorities, single women, transgender and other Socio-economic weaker sections of society.**
- Identifying beneficiaries eligible for assistance and their prioritization to be done using information from the Socio-Economic and Caste Census (SECC) ensures total transparency and objectivity.
- The ownership of houses is provided in the name of female members or joint names.
- **Houses made under the scheme would ensure basic facilities** like salutation, tap water connection, etc.
- Under the scheme, the Government promoted Training to Rural Masons under Rural Mason Training (RMT) programme to make a pool of trained rural masons available for faster construction of quality houses.

Objectives of Pradhan Mantri Awas Yojana

- To promote the empowerment of citizens, the Ownership of a house is one of the key indicators of socio-economic development.
- **They are ensuring Women's empowerment** through the Scheme, as the **ownership of the house is provided in the name of a female member or joint ownership**.
- To **Promote Cooperative Federalism**, **Autonomy is given to States/UTs** to decide the list of beneficiaries and adopt innovative methods to implement housing projects.

Present Status

- The Prime Minister has said that the Government has provided pucca houses to 2.5 crore families across the country — of these, 2 crore houses are in rural areas.
- To achieve the target of "Housing for All", the Union Government is implementing Pradhan Mantri Awaas Yojana.
- **It aims to assist eligible rural households with an overall target to construct 2.95 crore pucca houses with basic amenities by March 2024.**

ONE NATION, ONE RATION CARD / GS-II GOVERNANCE

About

- The Union Minister for Agriculture and Farmers Welfare has said that the One Nation-One Ration Card scheme has brought a lot of relief to the poor.
- The Minister highlighted that more than 99.5% of ration cards are currently linked with Aadhaar.

What is one nation one ration card?

- The **Union Government launched the 'One Nation, One Ration Card' scheme in 2019.**
- This scheme aims **to ensure all beneficiaries, especially migrants get ration (wheat, rice and other food grains) across the nation from any Public Distribution System (PDS) shop of their own choice.**
- Under the erstwhile system, **a ration cardholder could buy food grains only from the PDS in the locality where he or she lives**. This will change once the 'One Nation, One Ration Card' system becomes operational nationally.
- It was also launched with the purpose that no poor person should be deprived of getting subsidized food grains under the food security scheme when they shift from one place to another. It aims to reduce instances of corruption by middlemen and fraudulence in ration cards to avail benefits from different states.

Broad Objective

- The objective of this beneficiary-centric high-impact program is **to empower all *National Food Security Act*, (*NFSA*) beneficiaries to become Atma Nirbhar for their food security** anywhere in the country, through the portability of their existing ration cards enabling them to seamlessly lift their entitled subsidized foodgrains (in part or full) from any Fair Price Shop of their choice.
- This also enables their family members to lift the balance/required amount of food grains on the same ration card at their native/ any place from the FPS of their choice.

Some of the other benefits of the ONORC are

- Under the ONORC, all the beneficiaries from one state can get their share of rations in other states where the ration card was originally issued. Any recipient can use their ration cards at any PDS shop across the country. ONORC is aimed at providing universal access to PDS food grains for migrant workers.
- Apart from this, ONORC will also allow the beneficiaries **to choose their dealer.** With many cases of misallocation, the beneficiary can switch to another FPS shop instantly, if there is any case of foul play.

- This scheme will be beneficial for women and other groups since social identity and other contextual factors will provide them with a strong backdrop in accessing PDS.
- The ONORC will also help achieve the target set under SDG 2: Ending hunger by 2030. It also aims to address the poor state of hunger in India, where India has been ranked 102 out of 117 countries on the Global Hunger Index.

Who is eligible for the One Nation One Ration Card?

- Any citizen, who is declared under Below Poverty Line (BPL) category, will be eligible to get the benefit of this scheme across the country.
- The **beneficiaries will be identified based on their Aadhar-based identification through the electronic point of sale (PoS) device**. All the PDS shops will have the facility of electronic PoS devices.
- The one Nation One Ration Card scheme is also aimed at reducing the incidents of hunger deaths in the country, to further improve rankings in the Global Hunger Index.

How will the eligible beneficiary benefit from it?

- Ration cardholders can buy up to 5 kg of rice at Rs 3/kg, wheat at Rs 2/kg, and coarse grains at Rs 1/kg per month, as mandated under the National Food Security Act passed in 2013.
- Under the previous process, migrants had to apply for new ration cards at their new locations if they want to buy subsidized food grain, as the cards are linked to their residing places.
- However, the new system helps the large migratory population to avail the benefits anywhere across the country.

How does ONORC work?

- ONORC is based on technology that involves details of beneficiaries' ration cards, Aadhaar numbers, and electronic Points of Sale (ePoS). **The system identifies a beneficiary through biometric authentication on ePoS devices at fair-price shops**. The system runs with the support of two portals —Integrated Management of Public Distribution System (IM-PDS) and Annavitran, which host all the relevant data.
- When a ration card holder goes to a fair price shop, he or she identifies himself or herself through biometric authentication on ePoS, which is matched in real-time with details on the Annavitaran portal. **Once the ration card details are verified, the dealer hands out the beneficiary's entitlements**. While the Annavitaran portal maintains a record of intra-state transactions — inter-district and intra-district — the IM-PDS portal records the inter-state transactions.

Present Status

- As of now, **the ONORC plan has been successfully implemented in all 36 states/UTs, making food security portable throughout the country**.
- During the last two years of the COVID-19 pandemic, the ONORC plan has significantly contributed to ensuring subsidized food grains to NFSA (National Food Security Act) beneficiaries, especially migrant beneficiaries.
- Since its inception in August 2019, **about 71 Crore portable transactions have taken place under ONORC, delivering foodgrains equivalent to about Rs. 40,000 Crore in food subsidy through portability.**
- Presently a monthly average of about 3 Crore portable transactions are being recorded, delivering the subsidised NFSA and free PMGKAY foodgrains with anywhere flexibility to the beneficiaries.
- 'MERA RATION' mobile application is providing a host of useful real-time information to the beneficiaries and is available in 13 languages.

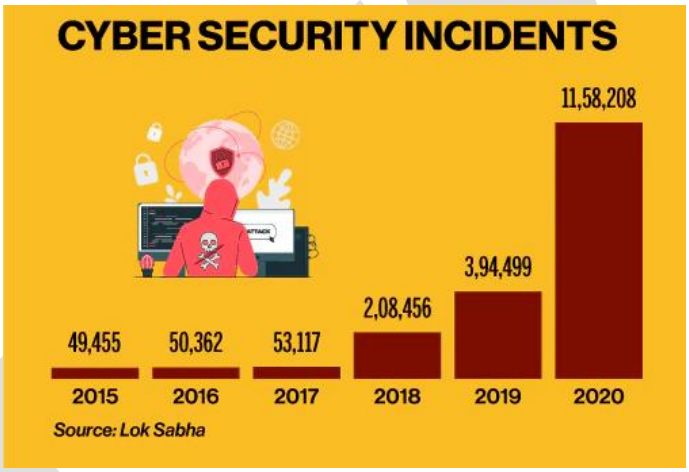
CYBER ATTACKS

GS-II SOCIAL JUSTICE

About

- Recently, **the All India Institute of Medical Sciences (AIIMS) in New Delhi was disabled by a major cyber attack for more than a week.**
  - Most of its servers stopped working.
  - All functions including the emergency, out-patient, in-patient and laboratory wings had to be shifted to manual management.
- A case of extortion and cyber terrorism was registered by the Intelligence Fusion and Strategic Operations (IFSO) unit of the Delhi Police.

Details



- **Cyber attacks on medical institutes are getting common and the Covid-19 pandemic was the turning point as hackers and criminal syndicates understand the dependence of these institutes on digital systems as well as store and manage patient data, including their medical reports.** This is why most countries define the health and medical sector as critical information (CI) infrastructure.
- In India, health is not directly specified as a CI, but an organization like AIIMS New Delhi must be counted as a "strategic and public enterprise" as it deals with millions of patients, and treats nearly 40 lakhs patients every year, including the top leadership of India.
- It also handles and stores very sensitive medical research data. It is a natural target for cyber attackers and ransom.
- Cyber attacks have increased dramatically over the last decade, exposing sensitive personal and business information, disrupting critical operations, and imposing high costs on the economy. Cyber Security is protecting our cyberspace (critical infrastructure) from attack, damage, misuse and economic espionage.

Why India needs a robust cybersecurity strategy?

- **Government's digital push:** Various programs of government such as Aadhaar, MyGov, Government e-Market, DigiLocker, Bharat Net etc. are prompting a larger number of citizens, companies and government agencies to transact online.
- Start-ups digital push
- **India is the fifth most vulnerable country in the world in terms of cybersecurity breaches**.
- India saw at least one cybercrime every 10 minutes during the first half of 2017 including more sophisticated cyber threats such as the WannaCry and Petya ransomware.
- India accounted for 5.09% of all cyber attacks such as malware, spam and phishing attacks detected globally in 2017.
- The estimated cost of cyber-attacks in India stands at four billion dollars which are expected to reach $20 billion in the next 10 years.
- **India ranks 3rd in terms of several internet users after the USA and China.** By 2020, India is expected to have 730 million internet users with 75% of new users from rural areas. The number has grown 6-fold between 2012-2017 with a compound annual growth rate of 44%.
- India secures a spot amongst the top 10 spam-sending countries in the world alongside the USA
- India was ranked among the top five countries to be affected by cybercrime, according to a report by online security firm "Symantec Corp".
- **Demonetisation and Covid-19 have pushed Indians to adopt digitisation**. Working from home is now accepted as a new normal.
- India's digital growth will not be sustainable if we do not have a strong shield in the form of data protection laws and privacy policies.
- To address the issue of protecting critical information infrastructure in cyberspace, build integrated capabilities to prevent and respond to cyber threats.
- India has one of the highest numbers of internet users in the world and is also among the top 10 countries facing cyber attacks.
- To address the current gaps in governance and to provide a strong framework to handle issues related to cybersecurity.
- There is no centralised command to have oversight and coordinate efforts to handle larger cybersecurity issues.
- To protect domestic interest: The discovery of potential North Korean malware at both the Kudankulam Nuclear Power Plant

and the Indian Space Research Organisation (ISRO) last year, and recent revelations of a Chinese firm tracking Indians' data highlight just how vulnerable Indian cyberspace can be.

Challenges in Ensuring Cyber Security

- Widespread digital illiteracy
- Use of Substandard devices
- Rampant use of unlicensed software and underpaid licenses also make them vulnerable.
- Lack of adoption of new technology
- Lack of uniform standards
- Import dependence
- Lack of adequate infrastructure and trained staff
- Anonymity
- Lack of coordination among various agencies working for cyber security

Way Forward

- **Dedicated authority:** Currently National Cyber Security Coordinator (NCSC) and Indian Computer Emergency Response Team (CERT-In) are handling cybersecurity issues in India. There is an urgent need of having a comprehensive and unified government institution for creating a cyber defence network
- **Unified inter-regulator:** Currently, RBI, SEBI, IRDAI, TRAI, PFRDA, etc, have different cybersecurity frameworks for their regulated entities. However, none of the frameworks talks about inter-regulator coordination or integrated approach to handle cybercrime.
- Holistic cybersecurity strategies with a possible amendment in the IT Act, as some of its provisions have become redundant and can't address issues arising from the evolving threats.
- **Cyber Defence Agency:** Government needs to consider creating a Cyber Defence Agency, which is to be entrusted with the responsibility to implement the cyber defence strategy solely for national security.
- Constitution of cyber commando force as a part of the defence program to neutralise any cross-border cyber terrorism or cyber-attack.
- Create specialised cyber police cadres in all State police departments.
- **Sectorial CERT and state-level CERT would be more effective for rapid response to any cyber-attack**. The state-level CERT team will need to ensure speedier incident response and coordination with national agencies.
- Building a business ecosystem to leverage artificial intelligence and robotics to improve cyber defence.
- Pass the proposed Data Protection Bill to protect critical information like personal data, business information, and financial information.

INDIA INEQUALITY REPORT 2022 / GS-II SOCIAL JUSTICE

In News

- The recently released **'India Inequality Report 2022: Digital Divide' by Oxfam India shows the digital divide in India.**
- Oxfam said the report depended on primary data received from the Centre for Monitoring Indian Economy's (CMIE) household survey from January 2018 to December 2021 on internet access, mobile ownership, computer and broadband availability as well as report analysis from the National Sample Survey (NSS) data.

Key Points of the report

- **Gender inequality**
  - In India, Over 61% of men owned a mobile phone in 2021 as opposed to 31 % of women.
  - Women are 15% less likely to own a mobile phone and 33% less likely to use mobile internet services than men.
- **Caste inequality**
  - 8% of people under the 'General' caste category had access to a computer or a laptop compared to 1% of Scheduled Tribes (ST) or 2% of Scheduled Castes (SC).
  - The chances of access to a computer are more for the General and OBC groups than for the SC and ST populations.
- **Religion inequality**
  - Among all religions, Sikhs have the highest chances of having a computer followed by Christians, Hindus and lastly Muslims.
  - Among Sikhs, 12% have a computer by the end of 2021, as compared to 2% of Muslims.
- **Rural-Urban divide**
  - The urban population is 7% to 8% more likely to have a computer than the rural population.
- The total percentage of respondents without a computer or laptop was 93.5% in January-April 2018, which further increased

to 96.6 % by the end of 2021, indicating the widening of the gap after the Covid-19 pandemic.
- Only one-fifth of the population could operate a computer.
- **Maharashtra has the highest internet penetration**, followed by Goa and Kerala, while Bihar has the lowest, followed by Chhattisgarh and Jharkhand.

Digital Divide

- It refers to the separation that exists between individuals, communities, and businesses that have access to information technology and those that do not have such access.
- **Reason:**
  - Economic poverty is closely related to limited information technology resources.
  - Lack of awareness among the people.
- **Concern:**
  - Awareness cannot guarantee sustained use of the system unless the system is also designed in such a way as to deliver a satisfactory outcome.
  - Online safety: The majority of women have experienced online violence, including sexual harassment, threatening messages and having private images shared without consent.

Steps taken by Government to bridge Digital Divide

- **National E-governance Plan** formulated by the Department of Electronics and Information Technology (DEITY) and the Department of Administrative Reforms and Public Grievances (DARPG) in 2006.
  - It aims at improving the delivery of Government services to citizens and businesses with the vision "Make all Government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realise the basic needs of the common man."
- **E-District** Projects under National e-Governance Plan (NeGP) aims at providing support to the basic administrative unit.
- **Common Services Centres** provide high-quality and cost-effective video, voice and data content and services, in the areas of e-governance, education, health, telemedicine, entertainment as well as other private services.
  - It will offer web-enabled e-governance services in rural areas, including application forms, certificates, and utility payments such as electricity, telephone and water bills.
- **Bhoomi Project in Karnataka** for Online delivery of Land Records.
- **Gyandoot is an Intranet-based Government to Citizen (G2C) service delivery** initiative in Madhya Pradesh.
- **Lokvani Project in Uttar Pradesh** to provide a single window, self-sustainable e-Governance solution for the handling of grievances, land record maintenance and providing a mixture of essential services.
- **Project FRIENDS in Kerala**: FRIENDS (Fast, Reliable, Instant, Efficient Network for the Disbursement of Services) is a Single Window Facility providing citizens with the means to pay taxes and other financial dues to the State Government
- **e-Mitra Project in Rajasthan** to facilitate urban and rural masses with the maximum possible services related to different state government departments
- **e-*Seva* (Andhra Pradesh)**; all the services are delivered online to consumers /citizens by connecting them to the respective government departments and providing online information at the point of service delivery.
- **SWAYAM Portal for Online Courses**. SWAYAM Prabha Provide HD educational Channels through DTH on a 24X7 basis.
- **Bharat Net program** to provide high-speed broadband to all the villages, optical fibre has been laid in 1.83 lakh gram panchayats.

Way Forward

- Need to promote Digital literacy, digital skills democracy, social mobility, economic equality and economic growth.
- Procedures need to be simplified to deliver concrete benefits and clear guidelines provided to encourage their users and reduce users' dependence on middlemen/intermediaries.
- A large investment needs to be made in digital infrastructure, and also needs to strengthen online security or cybersecurity.
- Ensuring equitable access to the digital world would promote economic growth for all. It would Speed up governmental Processes, and also increase transparency and enforce accountability.

EDUCATION TO MINORITIES / GS-II SOCIAL JUSTICE

About

- The **Parliamentary Standing Committee on Social Justice and Empowerment criticized the Union government for the delay in approving the continuance of the Scheme for Providing Education to Madrasas/Minorities (SPEMM).**
  - SPEMM provides financial assistance to madrasas and minority institutes.
- In 2021, **the scheme was transferred from the Ministry of Minority Affairs to the Ministry of Education.**

- The Parliamentary Standing Committee noted that the government has yet to approve the draft Expenditure Finance Committee (EFC) memorandum for its continuation.
  - The Committee noted that even the NITI Aayog had recommended that the scheme be continued beyond March 31, 2022.
- The committee mentioned that **despite the NITI Aayog's recommendation to continue the scheme, the EFC memorandum was "still under finalisation".**

Scheme for Providing Education to Madrasas/Minorities (SPEMM)

- Department of School Education and Literacy is implementing an Umbrella Scheme for Providing Quality Education to Madrasas/Minorities (SPEMM) which comprises two schemes;
  - Scheme for Providing Quality Education in Madrasas (SPQEM).
  - Infrastructure Development of Minority Institutes (IDMI).
- Both schemes are voluntary.

Scheme for Providing Quality Education in Madrasas (SPQEM)

- It aims to bring about qualitative improvement in Madrasas to enable Muslim children to attain the standards of the National education system in formal education subjects.
- **Objectives of the SPQEM scheme are:**
  - To provide financial assistance to traditional institutions like Madrasas to encourage them to introduce Science, Mathematics, Social Studies, Hindi and English in their curriculum.
  - To provide opportunities for students to acquire education comparable to the National Education System, especially for secondary and senior secondary levels.
  - To strengthen State Madrasa Boards opting for assistance by enabling them to monitor the Madrasa modernization programme and enhance awareness about education among the Muslim community.
  - To provide quality components in Madrasas such as remedial teaching, assessment and enhancement of learning outcomes, Rashtriya Avishkar Abhiyan etc.
  - To provide in-service training of teachers appointed under the scheme for teaching modern subjects of Science, Mathematics, Social Studies, Hindi and English to improve their pedagogical skills and quality of teaching.

Infrastructure Development of Minority Institutes (IDMI)

- **It was introduced to boost Infrastructure in Private Aided/Unaided Minority Schools/Institution**s to enhance the quality of education for minority children.
- **Objectives of the IDMI scheme are:**
  - To facilitate the education of minorities by augmenting and strengthening school infrastructure in Minority Institutions (elementary/ secondary/senior secondary schools) to expand the facilities for formal education to children of minority communities.
  - To encourage educational facilities for girls, children with special needs and those who are most deprived educationally amongst the minorities.

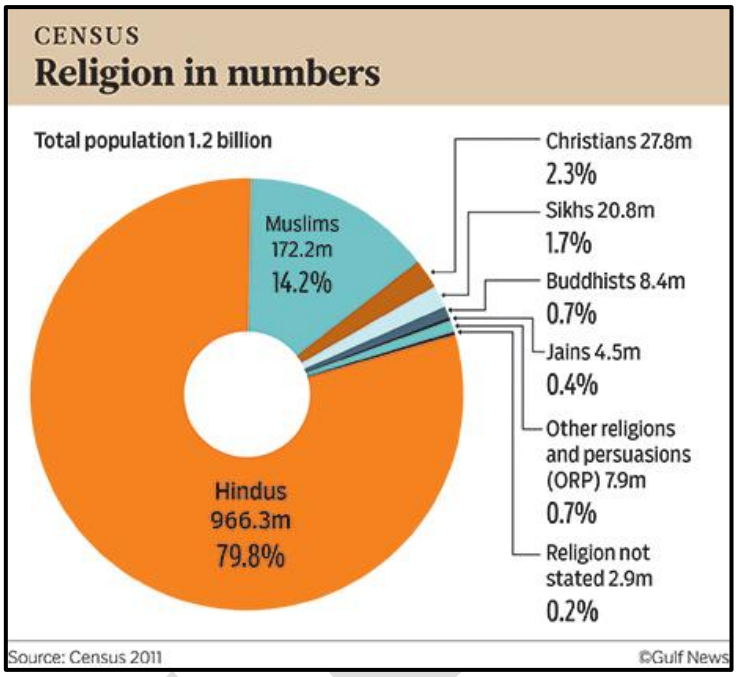
Article 30 of the Indian Constitution

- **Article 30: Rights of Minorities to Establish and Administer Educational Institutions.**
- Article 30 grants the following rights to minorities, whether religious or linguistic:
  - All minorities shall have the right to establish and administer educational institutions of their choice.
  - The compensation amount fixed by the State for the compulsory acquisition of any property of a minority educational institution shall not restrict or abrogate the right guaranteed to them.
  - **In granting aid, the State shall not discriminate against any educational institution managed by a minority.**
- **The protection under Article 30 is confined only to minorities (religious or linguistic) and does not extend to any section of citizens (as under Article 29).**
  - However, the term 'minority' has not been defined anywhere in the Constitution.
- The right under Article 30 also includes the right of a minority to impart education to its children in its language.

Minority Communities in India

- **The Constitution of India does not define the term minority.**
- The distinctiveness of a numerically inferior group is certainly recognised as a legal criterion to determine the minority status of any community.
  - **As per the Census 2011, the percentage of minorities in the country is about 19.3% of the total population of the country.**
  - **The population of Muslims is 14.2%; Christians 2.3%; Sikhs 1.7%, Buddhists 0.7%, Jain 0.4% and Parsis 0.006%.**

- The Union Government notified minority communities at the national level in consultation with various stakeholders under Section 2 (c) of the National Commission for Minorities (NCM), Act, 1992.
    - **The 6 communities notified as minority communities under Section 2(c) of the NCM Act, 1992 are Christians, Sikhs, Muslims, Buddhists, Parsis and Jains.**
    - **Notification of any community specific to a State as a minority community within a State comes under the purview of the State concerned.**
- Articles 29 and 30 of the Indian Constitution provide for the protection of the interests of minorities which includes linguistic minorities also.
- The working definition followed by the Commissioner for linguistic minorities is as follows:-
    - **Linguistic Minorities are groups or collectivizes of individuals residing in the territory** of India or any part **and having a distinct language or script of their own.**
    - **The language of the minority group need not be one of the 22 languages mentioned in the Eighth Schedule of the Constitution**.
    - In other words, linguistic minorities at the State level mean any group or groups of people whose mother tongues are different from the principal language of the State, and at the district and taluka/tehsil levels, different from the principal language of the district or taluka/tehsil concerned.
    - The interests of linguistic minorities are accorded due consideration and the office of the Commissioner of Linguistic Minorities has been mandated to investigate all matters relating to the safeguards provided for linguistic minorities in the country.
- **The Government has Constituted National Commission for Minorities under the National Commission for Minorities (NCM) Act, 1992.**
    - The NCM receives petitions/grievances from the aggrieved persons and the said petitions/grievances being received by Commission are dealt with by calling for reports from the concerned authorities under the Union and State Governments.
    - Upon receipt of the reports, the Commission makes appropriate recommendations to the respective authorities for the Redressal of the grievances.



Parliamentary Committee

- A Parliamentary Committee is a panel of Members of Parliament (MPs) that are appointed or elected by the House or nominated **by the Speaker/Chairman and work under the direction of the Speaker/Chairman.**
- **There are** generally two types of Parliamentary Committee —Standing Committees and Ad-hoc committees**. The former is permanent and operates continuously (constituted each year or periodically) while the latter is temporary and ceases to exist at the end of the mission assigned to them.**

LAW ON ACID ATTACKS IN INDIA

GS-II SOCIAL JUSTICE

In News

- Recently a 17-year-old girl was **attacked with an acid-like substance** in Delhi while she was on her way to school. **The incident has once again initiated a debate on the heinous crime of acid attacks and the easy availability of corrosive substances.**

Acid Attack

- **An acid attack is a form of violent assault involving the act of throwing acid or a similarly corrosive substance onto the body of another to disfigure, torture, or kill.**
- The most common types of acid used in these attacks are sulfuric, nitric acid, and Hydrochloric acid.
    - Aqueous solutions of strongly alkaline materials, such as caustic soda (sodium hydroxide), are used as well, particularly in areas where strong acids are controlled substances.
- Perpetrators throw corrosive liquids at their victims, usually at their faces, burning them, and damaging skin tissue, often exposing and sometimes dissolving the bones.

- Acid attacks can lead to permanent, partial, or complete blindness, with severe permanent scarring of the face and body, along with far-reaching social, psychological, and economic difficulties.

- **Acid attacks are reported in many parts of the world, but this type of violence is most common in South Asia.**

Acid attacks in India

- According to the National Crime Records Bureau (NCRB); 150 acid attack cases were recorded in 2019, 105 in 2020 and 102 in 2021.
  - **West Bengal and UP recorded nearly 50% of all the cases in the country.**
- In 2020, the charge sheeting rate of acid attacks stood at 86% and the conviction rate at 72%.
  - In 2021, it stood at 89% and 20% respectively.
- In 2015, **the Union Ministry of Home Affairs issued an advisory to all states to ensure speedy justice in cases of acid attacks by expediting prosecution**.

Law related to acid attacks in India

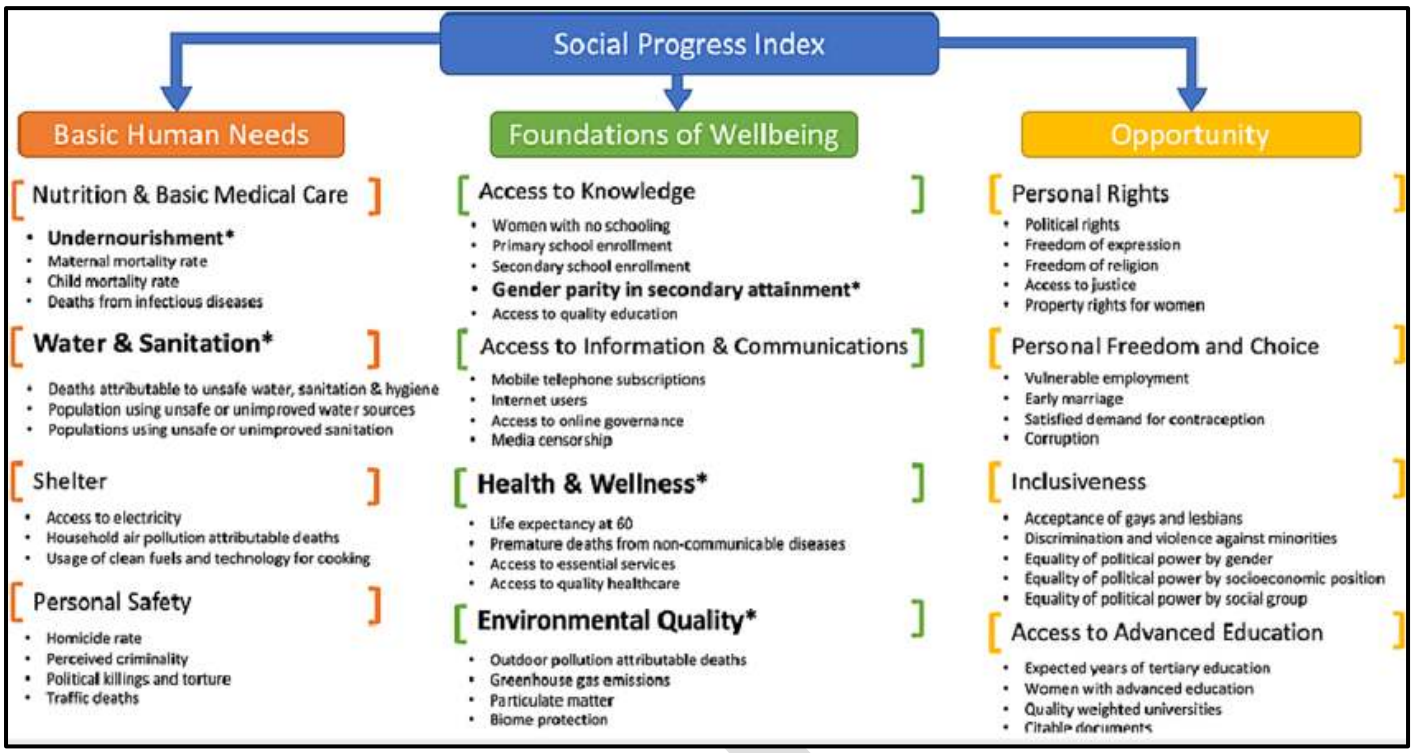
- **Until 2013, acid attacks were not treated as separate crimes**, with an **amendment made in the IPC, acid attacks were made punishable with a minimum of 10 years of imprisonment** which can be extendable to a life term with a fine.
- Under the law, there are also provisions for punishment for denial of treatment to victims or police officers refusing to register an FIR or record any piece of evidence.
  - Denial of treatment (by both public and private hospitals) can lead to imprisonment of up to one year and negligence of duty by a police officer is punishable by imprisonment of up to two years.
- **Regulation of acid sales**
  - In 2013, the Supreme Court passed an order on the regulation of sales of corrosive substances. Based on the order, the Home Ministry issued an advisory to all states on how to regulate acid sales and also framed the Model Poisons Possession and Sale Rules, 2013 under The Poisons Act, 1919.
- According to the Home Ministry rule, **over-the-counter sale of acid was not allowed unless the seller maintains a logbook/register recording the sale of acid**. This logbook was to also contain the details of the person to whom acid is sold, the quantity sold, the address of the person and also specify the reason for procuring acid.
  - The sale is also to be made only when the buyer produces a photo ID containing his addressissued by the government. The buyer must also prove he/she is above 18 years of age.
  - Sellers are also required to declare all stocks of acid with the concerned Sub-Divisional Magistrate (SDM) within 15 days and in case of undeclared stock of acid. The SDM can confiscate the stock and suitably impose a fine of up to Rs 50,000 for a breach of any of the directions.
  - Educational institutions, research laboratories, hospitals, government departments and the departments of Public Sector Undertakings, which are required to keep and store acid, have to maintain a register of usage of acid and file the same with the concerned SDM.
- **Victim compensation and care**
  - Based on Supreme Court directions, the Home Ministry asked states to make sure acid attack victims are paid compensation of at least Rs. 3 lakhs by the concerned State Government/Union Territory as the aftercare and rehabilitation cost.
  - States are supposed to ensure that treatment provided to acid attack victims in any hospital, public or private, is free of cost.
  - The cost incurred on treatment is not to be included in the compensation given to the victim.
- Home Ministry suggested states should also extend social integration programs to the victims for which NGOs could be funded to exclusively look after their rehabilitative requirements.

Way Forward

- The regulations on acid sales largely help in tracking the accused and not so much in prevention. Acid is still easily available in many places.
- India has several laws and rules to curb acid attacks, **but the problem is the implementation of the law, and the presence of an unregulated market.**
- **India can learn from Bangladesh**: The case study of Bangladesh shows that crime can be curbed with strict implementation of the law, In 2002, the country passed strict legislation against perpetrators and regulation of acid sales, now the Situation improving in Bangladeshi the rate of cases declining by 15–20% every year.
- **The key to solving this problem will always remain in society.**
  - Parents must teach their children the importance of boundaries and consent.
- **Strict implementation of the law and promotion of education and social awareness could help us to get rid of this social crime against Humanity.**

In News

- Social Progress Index (SPI) for States and Districts made by the Institute for Competitiveness and Social Progress Imperative was released recently.



Social Progress Index (SPI)

- **SPI is a comprehensive tool to measure a country's social progress at the national and sub-national levels.**
- The index **evaluates states and districts based on 12 components across 3 critical dimensions of social progress;**
  - **Basic Human Needs:** It assesses the performance of states and districts in terms of Nutrition and Basic Medical Care, Water and Sanitation, Personal Safety and Shelter.
  - **Foundations of Wellbeing:** It assesses the progress made by the country across the components of Access to Basic Knowledge, Access to Information and Communication, Health and Wellness, and Environmental Quality.
  - **Opportunity:** It concentrates on Personal Rights, Personal Freedom and Choice, Inclusiveness, and Access to Advanced Education.
- The index uses an extensive framework comprising 89 indicators at the state level and 49 at the district level.
- **Based on the SPI scores, states and districts have been ranked under 6 tiers of social progress;**
  - Tier 1: Very High Social Progress
  - Tier 2: High Social Progress
  - Tier 3: Upper Middle Social Progress
  - Tier 4: Lower Middle Social Progress
  - Tier 5: Low Social Progress
  - Tier 6: Very Low Social Progress

Key Points of the Index

- **Puducherry, Lakshadweep, and Goa emerge as best-performing states.**
- Aizawl (Mizoram), Solan (Himachal Pradesh), and Shimla (Himachal Pradesh) are the top 3 best-performing districts.
- Puducherry has the highest SPI score (65.99) in the country, attributable to its remarkable performance across components like Personal Freedom and Choice, Shelter, and Water and Sanitation.
  - Jharkhand and Bihar scored the lowest, 43.95 and 44.47, respectively.
- For the dimension of Basic Human Needs; Goa, Puducherry, Lakshadweep, and Chandigarh are the top four states with the best performance in Water and Sanitation and Shelter as compared to the other states and union territories.
- **Goa has the highest component score for Water and Sanitation.**
- Kerala scored the highest across the Nutrition and Basic Medical Care components.
- **Delhi has topped the list for Access to Information and Communication**.

- For Health and Wellness, Rajasthan has the highest score.
- Tamil Nadu has achieved the highest component score for the Opportunity dimension.
- Andaman and Nicobar Islands have the highest component score for Personal Rights.
- Sikkim has topped the list for Inclusiveness.

SEEDS SCHEME / GS-II SOCIAL JUSTICE

In News

- The **Parliamentary panel on Social Justice and Empowerment has criticized the Union government for the "very slow" process to categorize over 260 denotified, nomadic and semi-nomadic tribes under the SC/ST/OBC lists.**
- The slow processes delay the implementation of the Scheme for Economic Empowerment of Denotified, Nomadic, and Semi-nomadic (SEED) Tribes.
    - The scheme was launched by the Union Social Justice Minister to provide free competitive exam coaching, health insurance, housing assistance, and livelihood initiatives.
    - More than 5,400 applications had been received, but **none of them has been approved and no amount has been sanctioned.**

Details

- The panel report tabled highlighted the "inability of the Department to take necessary action" on the speedy and accurate categorization of these communities.
- The panel stated that a "**Delay in locating them would increase their suffering and they would not be able to get the benefit of the prevailing Schemes meant for the welfare of SC/STs."**
    - Officials of the Development and Welfare Board for Denotified, Nomadic and Semi-Nomadic Communities (DWBDNC) informed that they cannot start the applications for the SEED scheme unless the State and district-level reviews are completed.

Denotified, Nomadic and Semi-Nomadic Communities (DNCs)

- The term 'De-notified Tribes' stands for all those communities which **were once notified under the Criminal Tribes Act 1871.**
    - They remained hunter-gatherers and pastoral.
- The policies of the colonial government affected lives and livelihoods adversely. This led ultimately resulted in forcible alienation from their traditional occupations and habitations.
- These discriminatory Acts were nullified by the Indian Government inl952, and these communities were "De-Notified".
- According to the latest data, currently, **more than 10 crores of Indians from 1,400 communities belong to these groups.**
    - The Idate Commission had categorized 1,262 communities under SC/ST/OBC lists and 267 communities were left uncategorized. Even the communities categorized are not accurate with many communities appearing in SC lists in one State or district and on the ST list in others.

Scheme for Economic Empowerment of Denotified, Nomadic, Semi-nomadic (SEED) Tribes

- **<u>The scheme aims to provide;</u>**
    - Free coaching for competitive exams.
    - Health insurance and financial assistance for housing.
- The Union Minister of Social Justice has allocated Rs 200 crore to be spent from 2021-22 to 2025-26.
- Under the scheme, **a unique ID would be issued to each applicant** to apply and track the status of the online application on the portal.
- **<u>Challenges</u>**
    - Not a single application has been approved, as the exercise to categorise all 1,400 communities under the Scheduled Caste, Scheduled Tribe and Other Backward Classes are obstructing the implementation of the scheme.

Other important Steps taken by the Government

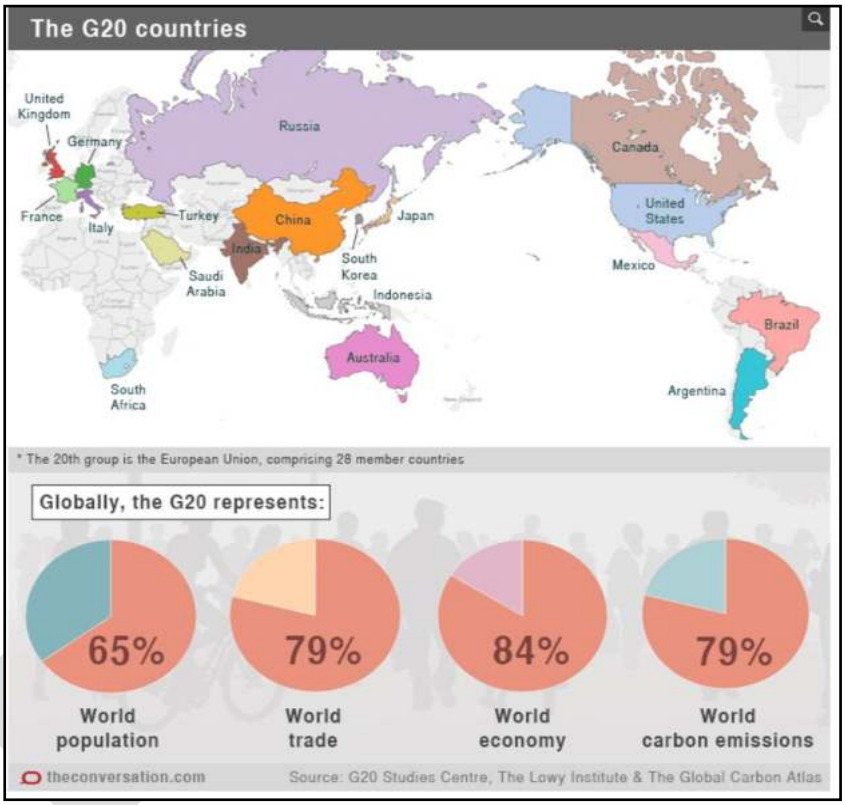
- The **Renke Commission (2008)** was set up to look into the problems of these communities.
- The **National Commission (2015) was constituted under the chairmanship of Shri Bhiku Ramji Idate** for the planned development of these communities.
- The Government of India set up the **Development and Welfare Board for DNTs, SNTs &NTs (DWBDNCs) in 2019.**

Context

- India's presidency of the G20 will be a 'watershed moment' in its history as the country seeks to play an important role in finding pragmatic global solutions for the well-being of all, India's Permanent Representative to the UN Ambassador Ruchira Kamboj has said.

About G-20

- The **G20** or **Group of Twenty** is an intergovernmental forum comprising **19 countries** and the European Union (EU). It works to address major issues related to the global economy, such as international financial stability, climate change mitigation, and sustainable development.
- The G20 is composed of most of the world's largest economies, including both industrialized and developing nations; it accounts for around **80% of** gross world product **(GWP)**, 59–77% of international trade, two-thirds of the global population, and 60% of the world's land area.
- The G20 was **founded in 1999** in response to several world economic crises. Since 2008, it has **convened at least once a year,** with summits involving each member's head of government or state, finance minister, or foreign minister, and other high-ranking officials.



Organizational Structure of G20

- The G-20 operates without a permanent secretariat or staff. The **chair rotates annually among the members** and is selected from a different regional grouping of countries.
- The chair is **part of a revolving three-member management group** of past, present and future chairs referred to as the Troika. The current chair of the G-20 is Indonesia; the next Chair will be India.

Parallel Tracks of G-20

- The G20 consists of two parallel tracks: the Finance Track (led by finance ministers and central bank governors of the member countries) and the Sherpa Track (personal emissaries of the leaders).
- The **Sherpas' Track focuses on non-economic and non-financial issues,** such as development, anti-corruption and food security, while addressing internal aspects such as procedural rules of the G20 process. The Sherpas carry out important planning, negotiation and implementation tasks continuously.
- The **Finance Track** focuses on economic and financial issues. The Sherpa and Finance tracks both rely on the technical and substantive work of a series of expert working groups.

Significance of upcoming G-20 Summit

- From December 1 2022, India assumed the G20 presidency for a year and will chair over 200 meetings that aim to secure global economic growth and prosperity.
- The 18th G20 Heads of State and Government Summit will take place on 9-10 September 2023 in New Delhi. The Summit will be a culmination of all the G20 processes and meetings held throughout the year among ministers, senior officials, and civil societies.
- India's G20 presidency will be **inclusive, ambitious, decisive, and action-oriented**, noting that the country is taking the charge at a time when the world is grappling with geopolitical tensions, economic slowdown and rising food and energy prices.
- G-20 Bloc **does not have a permanent secretariat** and the presidency is supported by the **Troika** – previous, current and incoming presidency. During India's presidency, the troika will comprise Indonesia, India and Brazil, respectively.

- India will, in the true spirit of ***Vasudhaiva Kutumbakam (the world is one family)***, seek to find pragmatic global solutions for the well-being of all.
- Under India's leadership, G20 nations will look to find consensus on major challenges like a slowing global economy, a debt crisis that will impact almost 70 countries, millions around the world slipping back into poverty due to Covid-19 and the existential climate crises
- Through its leadership position, **India may steer the G20 towards providing adequate finance to the 'Global South', keeping in line with climate justice.**
- A second key agenda item will be reforms in institutions like the World Bank, the International Monetary Fund and the World Trade Organisation. The aim is to make them more attuned to the needs and aspirations of developing economies.
- India's G20 mantra is: ***One Earth, One Family, One Future.*** It is these thoughts and values of India that pave the way for the welfare of the world.

UNITED NATIONS SECURITY COUNCIL / GS-II INTERNATIONAL RELATIONS

Context

- India assumed the monthly rotating presidency of the UN Security Council (UNSC) on December 1, the second time in its two-year tenure as an elected member of the Council in 2021-22. India had earlier assumed UNSC presidency in August 2021.

Details

India at UNSC:

- Under India's December presidency of UNSC, there are two signature events at the ministerial level, scheduled for December 14 (Reformed Multilateralism) and 15 (Counter-Terrorism).
- India began its **eighth term as a non-permanent member** of the UNSC and will remain as such for a period of **two years.**
- India's bid for a permanent seat at the UN Security Council has support from four of the **five P5 nations, namely the US, UK, France and Russia.**
- **China is the only permanent member** which is yet to officially back India's bid.

Composition of UN Security Council

- The UN Security Council is composed of
- **15 members, including five permanent member states - China, France, Russian Federation, the United States, and the United Kingdom - and**
- **10 non-permanent member states elected by the United Nations General Assembly (UNGA).**
- Each non-permanent member gets the opportunity to work as UNSC president.
- Ten non-permanent members are elected to the UNSC every year for a two-year term. India's current term began on January 1 of this year and will last until December 31, 2023.
- The 10 non-permanent seats are distributed among the regions of the world: five seats for **African and Asian countries** (three are for Africa and two for Asia), one for Eastern European countries, two for Latin American and Caribbean countries, and the remaining two for Western European and other countries.
- The Africa and Asia Pacific group takes turns every two years to put up an Arab candidate.

How does presidency of UNSC rotate?

- **Each non-permanent member gets the opportunity to operate as president of the UN Security Council** during the two years it is part of the grouping.
- The **presidency of UNSC changes hands every month between its members** in the English alphabetical order of the member states' names.
- In August, the presidency was passed on from France to India. Similarly, Ireland is slated to take over the presidency from India in September.
- India will be in **line for the presidency again in December 2022**.
- The country's last term as a non-permanent member of the UNSC was in 2011-12, which was preceded by stints in **1991-92, 1984-85, 1977-78, 1972-73, 1967-68, and 1950-51.**

Powers of the UNSC President

- The presidency **derives responsibility from the Provisional Rules of Procedure of the United Nations Security Council** as well as UNSC's practice.
- The holder of the presidency is considered to be the **'face' and spokesperson of the UNSC**.

Responsibilities of the UNSC president include

- Calling meetings of the UN Security Council
- Appealing to parties in a conflict to "exercise restraint"
- Reading statements of the UN Security Council to the press
- Approving provisional agenda (proposed by the secretary-general)

- Presiding at UNSC meetings and deciding questions relating to policy and overseeing any crisis

Veto power of UNSC member states

- The UN defines **'veto' as a "special voting power**", which provides that "if any one of the five permanent members cast a negative vote in (UNSC), the resolution or decision would not be approved".
- However, the **"veto power" is restricted to P5 member states of the UN Security Council**. Non-permanent members of the UNSC do not enjoy this privilege.
- Article 27 of the UN Charter says each member of the UNSC shall have one vote and that decisions on "procedural matters" shall require no more than the affirmative vote of nine out of the 15 members.
- Decisions on any other matter need not only an affirmative vote of nine members but also the concurring votes of the permanent members.

INDIA-ISRAEL RELATIONS / GS-II INTERNATIONAL RELATIONS

Context

- India and Israel are "natural allies" who are united by a fundamental commitment to the democratic ideals upon which they were founded, Israeli President Isaac Herzog has said, as he made a rare appearance at an exhibition here featuring Indian deities and temple rituals.

Recent developments in defence relations

- In October 2021, **India and Israel had agreed to form a task force to formulate a comprehensive 10-year roadmap to identify new areas of cooperation as part of efforts to further advance the bilateral defence cooperation.**
- At the same meeting, it was also **decided to form a Sub Working Groups (SWG) on defence industry cooperation** and in this regard, a Terms of Reference was signed between the two sides.
- Israel has been one of India's top defence partners supplying a range of high end defence equipment. **Indian armed forces rely heavily on Israeli Searcher and Heron UAVs to meet their surveillance requirements** with growing need for more.
- In the second half of last year, the **Army also placed orders for smaller, expendable 'SkyStriker' drones to be manufactured in Bengaluru by a joint venture between Israel's Elbit System and India's Alpha Design Technologies, which is now part of Adani Group.**
- The two countries **have several joint development projects in the pipeline, including the Long Range Surface to Air Missile also called Barak-8 for the Indian Navy's warships**. The development which saw some delays is now complete and the missile systems are being inducted.
- In another important project, in April, **Hindustan Aeronautics Limited entered into a memorandum of understanding with IAI to convert six Boeing-767 civil passenger aircraft to midair refuelling aircraft in India for the Indian Air Force.**
- However, another major deal for two more Phalcon Airborne Warning And Control Systems (AWACS), to add to three in Service, has been stuck for a while for final approval from the Cabinet Committee on Security. With the current focus on indigenous manufacturing and DRDO now indigenously developing larger AWACS, the Phalcon is unlikely to materialise.
- The Army which has operated Israeli small arms for a long time had **contracted 16,497 Negev Light Machine Guns from Israel in March 2020 under fast track procurement and they have since been inducted.**

Other Recent Development

- India and Israel have launched a commemorative logo to **mark the 30th anniversary of the establishment of diplomatic ties between the two countries.**
- It features the **Star of David and the Ashoka Chakra**- the two symbols that adorn the national flags of both countries- and forms the numeral 30 depicting the 30th anniversary of bilateral relations.
- It symbolises the strong friendship, love and admiration that exists between the people of the two nations.

India-Israel relations:

- **Introduction:**
- Israel and India **established diplomatic relations** on 29th of January 1992
- The two countries have an extensive economic, military, and strategic relationship.

Political relations:

- Political ties between the two countries are friendly.
- Prime Minister Modi undertook an historic first ever visit by an Indian PM to Israel from 4-6 July 2017, during which the relationship was upgraded to a **strategic level.**

Economic and Commercial Relations

- India is Israel's **third largest trade partner in Asia and seventh largest**
- **Major exports** from India to Israel include precious stones and metals, chemical products, textile etc.
- **Major imports** by India from Israel include precious stones and metals, chemicals and mineral products, base metals and

machinery and transport equipment.
- **Potash is a major item of Israel's exports** to India.

Cooperation in agriculture
- Under a comprehensive Work Plan for cooperation in agriculture signed on 10 May 2006, bilateral projects are implemented through Centres of Excellence.
- India has benefited from Israeli expertise and technologies in horticulture mechanization, protected cultivation, orchard and canopy management, nursery management, micro- irrigation and post-harvest management particularly in Haryana and Maharashtra.
- Israeli drip irrigation technologies and products are now widely used in India.

Defence relations:
- India is the **largest buyer of Israeli military equipment** and Israel is the second-largest supplier of military equipment to India after Russia.
- Military and strategic ties between the two nations extend to intelligence-sharing on terrorist groups and joint military training.

Indian Community:
- There are approximately 85,000 Jews of Indian-origin in Israel (with at least one Indian parent), who are all Israeli passport holders.

What can be done to further boost the ties?
- **Free Trade Agreement:** Both countries should push to negotiate the FTA, as attempt have been made over the past 14 years.
- **Military cooperation:** Both nations should look forward for transfer of defence technology along with defence equipment trade.
- **Cooperation on Global issues**: Israel supports India's defence against terror and supported India's nuclear tests in 1998.

Conclusion
- India and Israel are natural partners. Relations between both nations are steadily growing and have many synergies and complementarities.

CHINA-INDIAN OCEAN REGION FORUM / GS-II INTERNATIONAL RELATIONS

Context
- Recently, China convened a first "China-Indian Ocean Region Forum" bringing together 19 countries from the region. Experts believe that the Chinese forum apparently is aimed at countering India's strong influence in the Indian Ocean region where India-backed organisations like the Indian Ocean Rim Association (IORA) have taken strong roots.

Details
IORA:
- IORA is an inter-governmental organisation which was established in March 1997. It was formerly known as the Indian Ocean Rim Initiative and the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC).
- The IORA Secretariat is based in Mauritius. It became an observer to the UN General Assembly and the African Union in 2015.
- It has 23 Member States and 10 Dialogue Partners. China is a dialogue partner in the IORA.

- The China International Development Cooperation Agency (CIDCA) held a meeting of the **China-Indian Ocean Region Forum** on Development Cooperation.
- The meeting was attended by 19 countries from the region – and all of India's neighbours, except for India itself.
- The meeting was held in a hybrid manner under the theme of "Shared Development: Theory and Practice from the Perspective

of the Blue Economy".

- Participating countries included - Indonesia, Pakistan, Myanmar, Sri Lanka, Bangladesh, Maldives, Nepal, Afghanistan, Iran, Oman, South Africa, Kenya, Mozambique, Tanzania, Seychelles, Madagascar, Mauritius, Djibouti, Australia and representatives of 3 international organisations were present.
- India was not invited.
- India participated in the 22nd Council of Ministers' (COM) meeting of the Indian Ocean Rim Association (IORA) held at Dhaka.

Regional Security Architecture:

- India has always espoused a cooperative approach and participation of all states in promoting maritime security as enunciated by PM Narendra Modi in his vision of SAGAR – Security And Growth for All in the Region.
- **Indian Ocean Rim Association (IORA):** launched in 1997 for promoting intra-regional economic cooperation and development.
- **Indian Ocean Naval Symposium (IONS):** is a voluntary initiative formed in 2008 that seeks to increase maritime co-operation among navies of the littoral states of the Indian Ocean Region.
- **Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP):** is a regional government-to-government agreement, brought into force in September 2006 to promote and enhance cooperation against piracy and armed robbery in Asia.
- **ASEAN Regional Forum (ARF):** objectives are to foster dialogue and consultation on political and security issues of common interest and make efforts towards confidence-building and preventive diplomacy in the Asia-Pacific region.
- At the multilateral level, India has played a key role in shaping BIMSTEC and Mekong-Ganga Cooperation.
- In south-east Asia, it has played an important and supportive role in **ADMM Plus and Expanded ASEAN Maritime Forum and East Asia Summit** as regards maritime security issues there.
- In the western Pacific, it participates in **US-led Western Pacific Naval Symposium**. It is also an Observer at the **Arctic Council**

INDIA-BANGLADESH JOINT WORKING GROUP (JWG) / GS-II INTERNATIONAL RELATIONS

Context

- India-Bangladesh agreed to deepen and strengthen mutual cooperation on security and border-related issues in the 18th meeting of the Joint Working Group (JWG) on security and border management. Earlier, Home Minister Amit Shah had met the Home Minister of Bangladesh Asaduzzaman Khan on November 18 on the sidelines of the 'No Money For Terror' Conference in New Delhi. Both sides had productive exchanges on border management and common security-related issues during that meeting.

Details

- The two countries reiterated their commitment in the two-day meeting of the 18th JWG.
- The Bangladesh side recalled the Indian contribution during the 'Liberation War of Bangladesh' in 1971.

Issues Discussed:

- To implement Coordinated Border Management Plan (CBMP) in letter and its spirit for effective guarding of the Indo-Bangladesh border was the main issue discussed.
- Bilateral issues such as border fencing and developmental works within 150 yards of the International Border, illegal crossing, bilateral cooperation in checking insurgency, combating terrorism, organised crimes and smuggling were also discussed in the meeting.

History:

- In the last more than four decades, the two countries have continued to consolidate their political, economic, trade and cultural relations and have built a comprehensive institutional framework to promote bilateral cooperation.
- Both countries share 54 rivers, out of which, a treaty is already in existence for sharing of the Ganges water and both sides are working for early finalisation of agreements for sharing of water of other common rivers.
- Both countries are also cooperating in the conservation of the entire Sunderbans ecosystem, which is a common biodiversity heritage.
- Given the shared history and commonality of language, cultural exchanges form an important bond of friendship between the people of two countries.

How has India's relationship with Bangladesh played out over the years?

- The friendship between India and Bangladesh is historic, evolving over the last 50 years.
- India's **political, diplomatic, military and humanitarian support** during Bangladesh's Liberation War played an important role towards Bangladesh's independence.
- **Post-Independence**, the India-Bangladesh relationship has oscillated as Bangladesh passed through different regimes.
- The relationship **remained cordial until** the assassination of Bangladesh's founding President Sheikh Mujibur Rahman in

August 15, 1975, followed by a period of military rule and the rise of General Ziaur Rahman who became President and also assassinated in 1981.

- It **thawed again between 1982-1991** when a military-led government by General H.M. Ershad ruled the country.
- In the **last decade**, India-Bangladesh relations have warmed up, entering a new era of cooperation, and moving beyond historical and cultural ties to become more assimilated in the areas of trade, connectivity, energy, and defence.

Major Achievements of Indo-Bangla cooperation:

- Bangladesh and India have achieved the rare feat of solving their border issues peacefully by ratifying the historic Land Boundary Agreement in 2015, where enclaves were swapped allowing inhabitants to choose their country of residence and become citizens of either India or Bangladesh.
- The Bangladesh government led by Prime Minister Sheikh Hasina **has uprooted anti-India insurgency elements from its borders, making the India-Bangladesh border one of the region's most peaceful**, and allowing India to make a massive redeployment of resources to its more contentious borders
- Bangladesh is **India's biggest trading partner in South Asia** with exports to Bangladesh in FY 2018-19 at $9.21 billion and imports at $1.04 billion.
- India has **offered duty free access to multiple Bangladeshi products**. Trade could be more balanced if non-tariff barriers from the Indian side could be removed.
- On the development front, **cooperation has deepened,** with India extending **three lines of credit** to Bangladesh in recent years amounting to $8 billion for the construction of roads, railways, bridges, and ports.
- Bangladeshis make up a **large portion of tourists in India,** outnumbering all tourists arriving from western Europe in 2017, with one in every five tourists being a Bangladeshi.
- Bangladesh accounts for **more than 35% of India's international medical patients and contributes more than 50% of India's revenue from medical tourism.**

What are irritants in Indo-Bangladesh relationship?

- Proposed countrywide National Register of Citizens (NRC) and the Citizenship Amendment Act (CAA) passed last year.
- Bangladesh had cancelled visits by ministers, and Hasina has expressed reservations about CAA. She commented that the CAA and the proposed nationwide NRC are **"internal matters"** of India, the CAA move was **"not necessary"**.

How have relations between Bangladesh and China been developing?

- "China is the biggest trading partner of Bangladesh and is the foremost source of imports.
- In 2019, the trade between the two countries was $18 billion and the trade is heavily in favour of China,"
- Recently, **China declared zero duty on 97% of imports from Bangladesh**. The concession flowed from China's duty-free, quota-free programme for the Least Developed Countries.
- India has provided developmental assistance worth $10 billion, but **China has promised around $30 billion worth of financial assistance to Bangladesh** to overcome India assistance.
- **Bangladesh's strong defence ties with China** makes the situation complicated. China is the biggest arms supplier to Bangladesh and it has been a legacy issue. Bangladesh forces are equipped with Chinese arms including tanks, missile launchers, fighter aircraft and several weapons systems. Recently, Bangladesh purchased two Ming class submarines from China.

How has India been engaging with Bangladesh post CAA?

- In the wake of the Ladakh standoff, India has become more sensitive to Chinese defence inroads into Bangladesh.
- India and Bangladesh have cooperated on pandemic-related moves. Hasina contributed $1.5 million in India's regional emergency fund for fighting Covid-19 and India **provided medical aid to Bangladesh.**
- The two countries have also **cooperated in railways**, with India giving 10 locomotives to Bangladesh.
- The **first trial run for trans-shipment of Indian cargo through Bangladesh to Northeast states under a pact on the use of Chittagong and Mongla ports took place** in July.
- However, in recent weeks, Pakistan PM call to Hasina raised eyebrows in Delhi. While Islamabad portrayed it as a **conversation on Kashmir,** Dhaka said it was about **cooperating to deal with Covid-19.**

How has India sought to address China's latest move?

- During recent diplomats meeting with Hasina, "security-related issues of mutual interest" were discussed.
- The visit tried to address **issues on areas that have emerged as potential irritants in the relationship.**
- Bangladesh expressed "deep concern" at the rise in killings at the Indo-Bangladesh border by "BSF or Indian nationals" during the first half of this year, and the Indian side assured that the BSF authorities have been sensitised of the matter.

Among other issues

- The two sides agreed that Implementation of projects should be done in a timely manner, and that greater attention is required to development projects in Bangladesh under the Indian Lines of Credit.

- Bangladesh **sought return of the TablighiJamaat members impacted by the lockdown in India**, and early release of the 25 Bangladeshi fishermen in custody in Assam. India assured Bangladesh that its nationals would be able to return soon.
- Bangladesh requested for **urgent reopening of visa issuance from the Indian High Commission in Dhaka**, particularly since many Bangladeshi patients need to visit India.
- India was also requested to **reopen travel through Benapole-Petrapole land port, which has been halted by the West Bengal government in the wake of the pandemic.**
- Bangladesh told that it is ready to collaborate in the development of a Covid-19 vaccine, including its trial, and looks forward to early, affordable availability of the vaccine when ready.

What is the way ahead?

- While the Teesta project is important and urgent from India's point of view, it will be difficult to address it before the West Bengal elections due next year.
- India should implement all its assurances in a time-bound manner to avoid China tilt.
- Anti-India sentiment in Bangladesh, which has been revived after India's CAA -NRC push need to be managed carefully as it threatens to damage Dhaka-New Delhi ties.

UN GROUNDWATER SUMMIT 2022 / GS-II INTERNATIONAL RELATIONS

Context

- The importance of protecting groundwater and methods for its sustainable use will be the highlights of the United Nations-Water Summit on Groundwater 2022 that begins December 7, 2022 in Paris, France.

Details

- The two-day conference will be organised by UN-Water, UNESCO and the International Groundwater Resources Assessment Centre.
- The summit that aims to raise awareness on groundwater conservation at the global stage will mark the completion of the "Groundwater: Making the invisible visible" campaign run by UN-Water throughout 2022.
- The campaign highlighted the role of groundwater in alleviating poverty, food and water insecurity and other socio-economic development hurdles.
- **Groundwater management is imperative to meet the UN-mandated Sustainable Development Goal 6 of providing clean water and sanitation for all.**
- Groundwater is a vital resource that provides almost half of all drinking water worldwide, about 40 per cent of water for irrigated agriculture and about a third of water required for industry.
- **The role of groundwater in human development becomes bigger in the face of heightened water scarcity that is "already affecting about 2.7 billion people around the world for at least one month per year", the global body added.**
- **The five pillars of the *SDG 6 Global Acceleration Framework* released in June 2020 — data and information, capacity development, innovation, finance and governance — will be the main themes of the discussions.**
- The key takeaways from the summit will be presented at the UN 2023 Water Conference to be held in New York in March 2023.

Important initiatives on management of groundwater resources:

State wise initiatives

- A number of States have done notable work in the field of water conservation/harvesting such **as 'Mukhyamantri Jal SwavlambanAbhiyan'** in Rajasthan, 'JalyuktShibar' in Maharashtra, 'SujalamSufalamAbhiyan' in Gujarat, 'Mission Kakatiya' in Telangana, NeeruChettu' in Andhra Pradesh, Jal JeevanHariyali in Bihar, 'Jal Hi Jeevan' in Haryana, and Kudimaramath scheme in Tamil Nadu.

Atal BhujalYojana

- **Atal BhujalYojana (Atal Jal)** is being implemented in certain water stressed areas of the country, which includes activities like preparation of water security plan at Gram Panchayat level in participatory mode by involving communities to use available groundwater and surface water in an efficient manner.

Per Drop More Crop

- Department of Agriculture & Farmers Welfare (DA & FW) is implementing Per Drop More Crop component of Pradhan MantriKrishiSinchayeeYojana (PMKSY) which is operational from 2015-16. The PMKSY - Per Drop More Crop mainly focuses on water use efficiency at farm level through micro irrigation (drip and sprinkler irrigation system) to reduce the extraction of groundwater.

Jal Shakti Abhiyan

- Government of India launched Jal Shakti Abhiyan (JSA) in 2019, a time-bound campaign with a mission mode approach

intended to improve water availability including groundwater conditions in the water-stressed blocks of 256 districts in India.

- Ministry of Jal Shakti has taken up the "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) with the theme "Catch the Rain - Where it Falls When it Falls" to cover all the blocks of all districts (rural as well as urban areas) across the country.

'Master Plan for Artificial Recharge to Groundwater - 2020'

- Central Ground Water Board (CGWB), in consultation with States/UTs, has prepared 'Master Plan for Artificial Recharge to Groundwater - 2020'. The Master Plan – 2020 is a macro level plan indicating various structures for the different terrain conditions of the country.
- The Master Plan - 2020 envisages construction of about 1.42 crore rain water harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Metre (BCM).

National Aquifer Mapping and Management program (NAQUIM)

- National Aquifer Mapping and Management program (NAQUIM) is being implemented by CGWB as part of Ground Water Management and Regulation (GWM & R) Scheme, a Central Sector scheme. NAQUIM envisages mapping of aquifers (water bearing formations), their characterization and development of Aquifer Management Plans to facilitate sustainable management of groundwater resources in the country. NAQUIM outputs are shared with States/UTs for suitable interventions.

Other

- Government of India generally supports artificial groundwater recharge/water harvesting works in the country through Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Prime Minister KrishiSinchayeeYojana - Watershed Development component (PMKSY-WDC), 'Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies schemes' a component of PMKSY.

Groundwater in India

- Over the last 50 years, the number of borewells has grown from 1 million to 20 million, making India the world's largest user of groundwater.
- The Central Groundwater Board of India estimates that about 17% of groundwater blocks are overexploited (meaning the rate at which water is extracted exceeds the rate at which the aquifer is able to recharge) while 5% and 14% , respectively, are at critical and semi-critical stages. The situation is particularly alarming in three major regions – north-western, western, and southern peninsular.
- Groundwater pollution and the effects of climate change, including erratic rainfall in the drier areas, put additional stress on groundwater resources.
- The World Bank has been working with the Government of India to enhance groundwater management in affected areas.

Closing Thoughts

- Measures such as surface water harvesting through farm ponds and check-dams, the installation of water-efficient irrigation systems (e.g. more efficient drips and sprinklers) and growing leswater-intensiveve crops, need to be integrated on the demand side for improved management and reduced depletion.
- Several states affected by the depletion of groundwater, provide free or heavily subsidized power (including solar pumps) for pumping groundwater for irrigated agriculture.
- In the long-run, sustainable groundwater management will depend on cross-sectoral reforms to address the water-energy-agriculture nexus and providing the right incentives to resource users. This requires better coordination of policy, ,market and regulatory measures as well as repurposing current public support to more climate-smart solutions.
- Without sufficient regulation or replenishment of aquifers, the increased access to and use of groundwater for irrigation could lead to declining water tables and increasing water scarcity, which risks escalating long-term vulnerability.

SINO-INDIA CLASH AT YANGTSE / GS-II INTERNATIONAL RELATIONS

Context

- 20 Indian personnel sustain minor injuries in LAC face-off on Dec. 9; Commanders on both sides hold Flag Meeting to discuss the issue and restore tranquillity

Details

- This is the first incident of its kind after the June 15, 2020 incident when 20 Indian soldiers were killed and several others were injured in violent clashes with the PLA troops in Ladakh'sGalwan Valley.
- This is not the first time that the area in Arunachal Pradesh has seen a face-off between the Indian and Chinese troops.
- **Since the boundary is undefined, Indian and Chinese troops often face off while patrolling the area.**
- In October 2021, a similar incident had taken place when some Chinese soldiers of a large patrol team were detained for a few hours by the Indian Army as they engaged in a minor face-off near Yangtse.

- **In the last few years, the Army has significantly upgraded firepower and infrastructure along the LAC in the Tawang sector and a similar effort is under way in the rest of Arunachal Pradesh (RALP).**
- This includes road infrastructure, bridges, tunnels, habitat and other storage facilities, aviation facilities and upgradation of communications and surveillance, especially in the Upper.Dibang Valley region, as reported earlier.
- There has been a change in the pattern of PLA patrols, with large-size patrols coming now to assert their claim.

- **Before the 2020 standoff in eastern Ladakh, Chinese bases have largely been much farther from the LAC.**
- **Majority of the transgressions in the last few years are in the western sector while there is an increasing trend of transgressions in the eastern and middle sectors**
- The LAC is divided into western (Ladakh), middle (Himachal Pradesh and Uttarakhand), Sikkim, and eastern (Arunachal Pradesh) sectors.
- In eastern Ladakh, India and China are positioned in close proximity at multiple locations along the undefined LAC for more than two years.
- While several rounds of talks at diplomatic and military levels have eased the stand-off at a few points, turning the areas into no-patrolling zones, there are others where the build-up continues.

Root cause of border dispute between India & China:

- The root cause lies in **an ill-defined, 3,440km (2,100-mile)-long border** that both countries dispute. Four states - Himachal Pradesh, Uttarakhand (erstwhile part of UP), Sikkim and Arunachal Pradesh and Union Territories of Ladakh (erstwhile state of Jammu & Kashmir) share a border with China.
- The Sino-Indian border is generally divided into three sectors namely: **Western sector, Middle sector, and Eastern sector.**

Western Sector

- In the western sector, India shares about a 2152 km border with China. It is between the union territory of Ladakh (erstwhile state of Jammu and Kashmir) and the Xinjiang province of China. The territorial dispute in the western sector is over Aksai Chin. India claims it as part of erstwhile Kashmir, while China claims it is part of Xinjiang.
- The dispute is said to be due to the failure of the British empire as it failed to demarcate a legal border between both countries. During the British rule in India two borderlines were proposed – **Johnson's line and McDonald line.**

Middle Sector

- In the middle sector, India shares about 625km of the border with China. This is the only sector where the both countries have less disagreement. The border runs from Ladakh to Nepal. The states of Himachal Pradesh and Uttarakhand touch the border with Tibet in this sector.

Eastern Sector

- In the eastern sector, India shares a 1140km boundary with China. The boundary line is called McMahon Line runs from the eastern limit of Bhutan to a point near the Talu Pass at the trijunction of Tibet, India, and Myanmar. The majority of the territory of Arunachal Pradesh is claimed by China as a part of Southern Tibet.
- **China considers the McMahon line illegal**. **McMahon proposed the line in the Simla Accord in 1914** to settle the boundary between Tibet and India, and Tibet and China. Though the Chinese representatives at the meeting initialed the agreement, they subsequently refused to accept it.

Disputed areas along the LAC

- China claims about 90,000 sq km of India's territory in the northeast, including Arunachal, while India says 38,000 sq km of land in China-occupied Aksai Chin should be a part of Ladakh. There are several disputed areas along the Line of Actual Control (LAC), including in Himachal, Uttarakhand and Sikkim.

In Ladakh, the disputed areas include:

- Pangong Tso lake
- Galwan Valley, where Shyok and Galwan rivers meet
- Daulat Beg Oldi (DBO), a key northern region close to the Karakoram Pass.
- The Hot Springs-Gogra area of the LAC
- Demchok which is close to the southernmost part of the LAC in Ladakh.
- Chushul , located on the southern bank of Pangong Tso Lake, has an airstrip and is near Rezang La pass on the LAC.
- Spanggur Gap along the LAC has roads leading to it from either side. India's Chushul-Demchok road in the area is a critical communication link.
- Samar Lungpa
- Trig Heights
- Chumar
- Dumchele
- Kongka La

In Himachal Pradesh , the disputed areas are

- Kaurik
- Shipki La, an ancient trade route.

In Uttarakhand, the disputed areas are-

- PulamSumda
- Barahoti Plains

In Sikkim, the disputed areas include:

- North Sikkim, a high-altitude plain area that is snowbound.
- Chumbi Valley – It is a Tri-junction between **India, China and Bhutan**. Doklam is located in this region.

Disputed areas in Arunachal Pradesh include:

- Namkha Chu
- Sumdorong Chu
- Asaphila
- Longju
- Dichu
- Yangtse
- Fish Tail-1 & 2 in Dibang Valley
- Lamang

Dispute Resolution Mechanisms in the Past:

Bilateral treaties between India and China to address border disputes

- **1914:** Acceptance of McMohan Line by Shimla Agreement. China refused it later.
- **1954:** Panchsheel Agreement to respect sovereignty and territorial boundaries.
- **1993:** Agreement on the maintenance of peace and tranquility along the Line of Actual Control in the Sino-Indian Border.
- **1996:** Agreement on confidence-building Measures in the military field along the Line of Actual Control in the Sino-Indian Border.
- **2005:** Protocol on the modalities for the implementation of confidence-building measures in the military field along the Line of Actual Control in the Sino-Indian Border.
- **2012:** Establishment of a working mechanism for consultation and coordination on Sino-Indian border affairs.
- **2013:** Border defense cooperation agreement between India and China.
- Additionally there are other agreements related to the border question such as the 2005 **"Agreement on the Political Parameters and Guiding Principles for the Settlement of the India-China Boundary Question**".

Border meeting points

- There are five Border Personnel Meeting points (BPM) for holding rounds of dispute resolution talks among the military personnel. These are **– Bum La and Kibithu in Arunachal Pradesh; Daulat Beg Oldi and Chushul in Ladakh, and Nathu La in Sikkim.**

Ways to Resolve Border Disputes:

- Historically, Beijing has made some offers on settling the border dispute. The simplest of them was the **"package" deal.**

Package Deal

- It involved both the countries recognizing the status quo—Chinese occupation of Aksai Chin and Indian sovereignty over

Arunachal Pradesh—on both fronts. This offer was first made by former Chinese Premier Zhou Enlai in 1960. This offer is arguably the best formula for settlement according to historian Mahesh Shankar because the region is not strategically important to India.

- The offer was however rejected by former Prime Minister Jawaharlal Nehru as he was concerned that any concession, even in the west would only invite further aggression from Beijing all across the frontier.

Note: While Mahesh Shankar's argument is indeed compelling, it must also be noted that according to Historian Sarvepalli Gopal New Delhi had always recognized the McMahon line in the west which awarded Arunachal Pradesh (then the North-East Frontier Agency) to India. Thus, a straight swap seemed unreasonable.

As Justice A.G. Noorani quoted:

"If a thief breaks into your house and steals your coat and your wallet, you don't say to him that he can have the coat if he returns the wallet. You expect him to return all that he has stolen from you."

- LAC Plus Solution
- The second offer, which is still better for New Delhi than the "package" deal, is the "LAC plus solution"
- The LAC-plus solution involved recognition of the status quo in the east and some concessions by China in the west. This offer, however, was not followed through on the Indian side.
- And very soon, in the year 1985, China hardened its stand against this offer and it has roughly remained the same till date.
- Beijing has specifically eyed Tawang, and asked India to put forward its offer on the eastern front, following which it would reveal what it could offer on the western front.
- ***Any solution which requires India trading away any part of Arunachal Pradesh will not pass muster in New Delhi.***

Conclusion

- A resolution of the border dispute seems far away. Economist Arun Shourie summarized it aptly:
- We really should not be in a hurry to 'solve' the dispute—especially not when the distance between China and India is as vast as it has become;
- Secondly, an agreement is worth something only if we are sure that the other side would not violate it. And we can actually make it expensive for the other side if it violates the agreement.

UN ECONOMIC AND SOCIAL COUNCIL (ECOSOC) / GS-II INTERNATIONAL RELATIONS

Context

- In an unprecedented move, Iran has been expelled from the United Nation's Commission on the Status of Women (CSW) in a vote on which India abstained. The US had proposed at the UN Economic and Social Council to remove Iran from the panel. India along with 15 other nations abstained from the vote as 29 countries stood in favour of the resolution.

Details

About:

- **The Commission on the Status of Women (CSW) is the principal global intergovernmental body exclusively dedicated to the promotion of gender equality and the empowerment of women.**
- A **functional commission of the Economic and Social Council** (ECOSOC), it was established by ECOSOC resolution 11(II) of 21 June 1946.
- The CSW is instrumental in promoting women's rights, documenting the reality of women's lives throughout the world, and shaping global standards on gender equality and the empowerment of women.
- In 1996, ECOSOC expanded the Commission's mandate and decided that it should take a leading role in monitoring and reviewing progress and problems in the implementation of the Beijing Declaration and Platform for Action, and in mainstreaming a gender perspective in UN activities.
- During the Commission's annual two-week session, representatives of UN Member States, civil society organizations and UN entities gather at UN headquarters in New York.
- **They discuss progress and gaps in the implementation of the 1995** Beijing Declaration and Platform for Action**, the key global policy document on gender equality, and the** 23rd special session of the General Assembly **held in 2000 (Beijing+5), as well as emerging issues that affect gender equality and the empowerment of women.**
- Member States agree on further actions to accelerate progress and promote women's enjoyment of their rights in political, economic, and social fields. The outcomes and recommendations of each session are forwarded to ECOSOC for follow-up.

Under its current methods of work, established by ECOSOC resolution 2015/6, at each session the Commission:

- Convenes a ministerial segment to reaffirm and strengthen political commitment to the realization of gender equality and the empowerment of women and girls as well as their human rights, and to ensure high-level engagement and the visibility of the deliberations of the Commission, including through ministerial round tables or other high-level interactive dialogues to

exchange experiences, lessons learned, and good practices;
- Engages in general discussion on the status of gender equality, identifying goals attained, achievements made, and efforts under way to close gaps and meet challenges;
- Convenes interactive expert panel discussions and other interactive dialogues on steps and initiatives to accelerate implementation and measures to build capacities for mainstreaming gender equality across policies and programmes;
- Considers one priority theme, based on the Beijing Declaration and Platform for Action and the outcome of the 23rd special session of the General Assembly and linkages to the 2030 Agenda for Sustainable Development;
- Evaluates progress in implementing agreed conclusions from previous sessions as a review theme;
- Discusses emerging issues, trends, focus areas, and new approaches to questions affecting the situation of women, including equality between women and men, that require timely consideration;
- Considers in closed meeting the report of its Working Group on Communications;
- Agrees on further actions for the promotion of gender equality and the empowerment of women by adopting agreed conclusions and resolutions;
- Contributes gender perspectives to the work of other intergovernmental bodies and processes;
- Reports on the aspects relating to gender equality and the empowerment of women of the agreed main theme of the Economic and Social Council, in order to contribute to its work; and
- Celebrates International Women's Day on 8 March, when it falls within its session.

UN Economic and Social Council (ECOSOC)

- It **is one of the six principal organs of UN, responsible for the direction and coordination of the economic, social, humanitarian, and cultural activities carried out by the UN.**
- It was established by the UN Charter (1945) and has 54 members.
- Members are elected for three-year terms by the General Assembly. Four of the five permanent members of the Security Council have been continuously re-elected because they provide funding for most of ECOSOC's budget, which is the largest of any UN subsidiary body.
- Decisions are taken by simple majority vote. The presidency of ECOSOC changes annually.
- **India held the inaugural Presidency of ECOSOC (Sir RamaswamiMudaliar, in 1946). In April 2022, India was elected to four key bodies of the ECOSOC.** These four bodies are:
  - Committee on Non-Governmental Organisations;
  - Commission for Social Development;
  - Commission on Science and Technology for Development; and
  - Committee for Economic, Social and Cultural Rights.

75 YEARS OF INDIA'S AUTONOMOUS FOREIGN POLICY / GS-II INTERNATIONAL RELATIONS

Context

- By all standards, 2022 was a difficult year on the geopolitical and diplomatic stage, especially after Russia's invasion of Ukraine in February.
- **For India, the choices grew more difficult, given its strategic ties with the U.S. and Europe and traditional ties with Russia**.
- The most significant defence of India's foreign policy was made by External Affairs Minister S. Jaishankar, who won accolades back home for **calling out western "hypocrisy" on Russian oil flows to India. However, the government continues to take criticism over its China policy and the stand-off at the Line of Actual Control.**

Details

India's handling of the Ukraine crisis:

- The war in Ukraine saw the government spell out its version of "non-alignment", as it sought to keep a balance in the growing polarisation between the U.S. and the European Union on one side, and Russia on the other.
- **The government's stand through the year was a tough tight-rope walk: with the Prime Minister making his discomfort with the war clear directly to Russian President Vladimir Putin with the words "This era is not for war", that became a catchphrase for the West, but at the same time refusing to accept western sanctions, growing military and oil trade with Russia, and seeking rupee-based payment mechanisms to facilitate them.**
- Most significantly, in more than a dozen resolutions at the UNSC, UNGA, IAEA, Human Rights Commission, and other multilateral platforms seeking to censure Russia for the invasion and humanitarian crisis, India chose to abstain.

What about ties with neighbours?

- In the neighbourhood, India's foreign policy was marked by **economic assistance to Sri Lanka in the midst of its collapse, and regional trade and energy agreements** with Bangladesh, Bhutan, and Nepal that could see a South Asian energy grid emerge.

- India has also **strengthened ties with Central Asian countries** on connectivity.
- The government **kept channels open with repressive regimes like Afghanistan's Taliban and the Myanmar Junta, opening a "technical mission" in Kabul and sending the foreign secretary to Nay Pyi Taw to discuss border cooperation**.
- India abstained on a UNSC vote calling for Myanmar to end violence and release political prisoners.
- **With Iran too, where protests against the killing of activist Mahsa Amini have brought thousands onto the streets, India has steered clear of any criticism.**
- However, **with Pakistan, ties remain flat-lined,** with a big showdown at the UN this month between Mr. Jaishankar and Pakistan Foreign Minister Bilawal Bhutto.

Has there been any progress on the LAC stand-off with China?

- Despite a visit to Delhi by China's Foreign Minister Wang Yi, and disengagement at some stand-off points, India-China tensions at the Line of Actual Control remained high, and the year ended with an unsuccessful Chinese PLA attempt to take Indian posts at Yangtse in Arunachal Pradesh, **signalling more such violent clashes could follow in 2023.**
- The government took some heat from the Opposition over its failure to hold an open debate in Parliament to discuss the LAC stand-off that has been ongoing since April 2020, especially after Prime Minister Modi shook hands with Chinese President Xi Jinping at the Bali G20 meet in November.
- Regardless of the fraught state of ties, India is due to host Mr. Xi twice in 2023, at the G-20 and SCO summits, which could create opportunities for talks to end the stand-off.

Other highlights in foreign policy this year

- The year was marked in many ways for Indian diplomacy, which will be at the forefront in 2023, during **India's presidency of the G-20 and chairship of the Shanghai Cooperation Organisation (SCO)**, which will bring all the major leaders of the world to Delhi for summits.
- In 2022, **India returned to Free Trade Agreements**, after a hiatus of several years when the Modi government had called for a review of all FTAs, scrapped all Bilateral Investment Treaties (BITs) and walked out of the 15-nation Asian Regional Comprehensive Economic Partnership (RCEP).
- In 2022, **India signed trade agreements with the UAE and Australia, and hopes to progress on talks with the EU, Gulf Cooperation Council and Canada for others**.
- India also **joined the U.S.-led Indo-Pacific Economic Forum (IPEF), although it later decided to stay out of trade talks.**
- At the G-20, India is expected to highlight climate change transitions, "women-led" development and multilateral reform, among other key issues.

Phases of Indian Foreign Policy

- The very structure of the international order is undergoing a profound transformation. This can be attributed by various geopolitical events. USA's unilateralism under America First policy. Re-balancing of the global economy: The rise of China, India etc. Return of old empires: Resurgence of Russia, Iran or Turkey. Geopolitical Flux in the Middle East: Crisis in Syria & Afghanistan, Reign of terrorism by Islamic State of Iraq and Syria (ISIS).
- In order to contemplate a challenging road ahead in this phase of geopolitical transformation, India can learn from its foreign policy since Independence. Indian foreign policy can be understood by dividing it into six broad phases:

The first phase (1947-62): Optimistic Non-Alignment

- This period is marked with a setting of a bipolar world, with camps led by the United States and the USSR. India's objectives in this phase were to resist dilution of its sovereignty, rebuild its economy and consolidate its integrity. India was one of the first countries to be decolonized. In pursuit of this, India played a critical role in the establishment of the Non-Alignment Movement (NAM) (1961), which marked the peak of Third World solidarity. However, the 1962 conflict with China not only brought this period to an end but in a manner that significantly damaged India's standing on NAM.

The second phase (1962-71): Decade of Realism and Recovery

- After the 1962 war, India made pragmatic choices on security and political challenges.It looked beyond non-alignment in the interest of national security, concluding a now largely forgotten defence agreement with the US in 1964. However, India faced external pressures on Kashmir (Tashkent agreement 1965) from the US and UK. However, the agreement did not contain a no-war pact or any renunciation of Pakistan's aggression in Kashmir (as Pakistan was an ally of the US). Therefore, India now started tilting towards USSR.

The third phase (1971-91): Greater Indian Regional Assertion

- India showed remarkable use of hard power when it liberated Bangladesh in the India-Pakistan war in 1971. However, it was a particularly complex phase as the US-China-Pakistan axis that came into being at this time seriously threatened India's prospects, as a regional power. The combination of events as diverse as the Gulf War (1991-1992), the break-up of USSR (1991), long standing economic stagnation and domestic turbulence came together in 1991, creating a balance of payment crisis in India.

The fourth phase (1991-98): Safeguarding Strategic Autonomy

- The emergence of a unipolar world (led by the USA), encouraged India to change its approach to world affairs. This quest for strategic autonomy was particularly focused on securing its nuclear weapon option (Pokhran II 1998). This is a period where India reached out to engage the US, Israel and ASEAN countries more intensively.

The fifth phase (1998-2013): India, a Balancing Power

- In this period, India gradually acquired the attributes of a balancing power (against the rise of China). It is reflected in the India-US nuclear deal (123 Agreement). At the same time, India could also make common cause with China on climate change and trade, and consolidate further ties with Russia while helping to fashion BRICS into a major global forum.

The sixth phase (2013-until now): Energetic Engagement

- In this phase of transitional geopolitics, India's policy of Non-Alignment has turned into Multi Alignment. Moreover, India is now more aware of its own capabilities and the expectations that the world has of India. India's willingness to shape key global negotiations (such as conference in Paris on climate change) is equally significant. India has been able to assert itself beyond South Asia, through its approach towards the Indian Ocean Region (SAGAR initiative) and the extended neighborhood.
- India went to the United Nations, with a view that the international community will take notice of Pakistan's aggression on Kashmir. At the same time the occupation of Kashmir by Pakistan (PoK) also geographically separated India from the energy-rich Central Asian countries. In the 1960s, 1980s and again after 2001 (9/11 attack on the US), India grossly underestimated the relevance of Pakistan to American and Chinese global strategy. In present times, an appreciation of world politics must include a proper understanding of Sino-US contradictions, of growing multi-polarity, of weaker multilateralism, of larger economic and political rebalancing, of greater space for regional powers, and of a world of convergence. To conclude, in this phase of geopolitical transformation, India needs to follow an approach of working with multiple partners on different agendas.

GLOBAL COUNTERTERRORISM APPROACH / GS-II INTERNATIONAL RELATIONS

Context

- The focus of the UNSC special briefing, 'Global Counterterrorism Approach', that was convened by India, is well-timed given that the "Global War on Terrorism" and the sanctions regimes launched after 9/11 are in disarray.

Details

- External Affairs Minister S. Jaishankar's listing of four hurdles to better counterterrorism cooperation, i.e.,

1. state support for financing terror;
2. multilateral mechanisms that are opaque and agenda driven;
3. double standards and politicisation of countering terrorism according to where terror groups belong, and
4. "next frontier" (the use of emerging technologies such as drones and virtual currency by terrorists), needs attention.

- In their haste to exit Afghanistan in 2021, for example, the UNSC's permanent members, the U.S. and the U.K. struck the biggest blow to the sanctions regime by holding talks with the Taliban, easing their path to power in Kabul and letting their handlers in Pakistan off the hook.
- A P-5 country (China) continues to block the designations of Pakistan-based terrorists, including five named this year, from the LeT and the JeM.
- Instead of uniting to accept India's proposal, of 1996, of a Comprehensive Convention on International Terror to institute global practices on countering terror, the P-5 countries are hopelessly polarised, and irrevocably so, over Russia's war in Ukraine.
- Given the scenario, New Delhi's attempt at highlighting the issues during the last few weeks of its two-year UNSC tenure was apt, as it built up to the briefing with conferences in India including a UN Counter-Terrorism Committee meeting, the No Money For Terror conference, and an Interpol conference.

What is terrorism?

- Although the term is **not subject to a universally agreed definition**, terrorism can be broadly understood as a method of coercion that utilizes or threatens to utilize violence to spread fear and thereby attain political or ideological goals.
- The **Indian National Security Guard Act, 1986**, defines a 'Terrorist' as "any person who with intent to overawe the Government as by law established or to strike terror in the people or any section of the people, does any act or thing by using the bomb, dynamite or other explosive substance or inflammable substances or firearms or other lethal weapons or poisons or noxious gases or other substances (whether biological or otherwise) of a hazardous nature, in such a manner as to cause or as is likely to cause, death or injuries to any person or persons or damage to or destruction of property, or disruption of any supplies or services essential to the life of the community."

Terrorism in India

- India's tryst with terrorism and violent extremism can be **traced back** partly to the **religion-based partition in 1947**, which ripped the sub-continent into two nations: India and Pakistan.
- The sub-continent remained witness to the most horrifying **ethnic riots** in modern history, which were marked by extreme violence and acts of terrorism.
- Following the partition, after a brief period of neutrality, the then Maharaja of Jammu and Kashmir (J&K), Hari Singh formally acceded to India; however, this act of accession has not, and continues not to be recognised by Pakistan which lays claims to the Muslim majority region.
- This **territorial dispute** lies at the core of the long-standing conflict between the two nations with both nations each vehemently rejecting the other's claims.
- Further, India views Pakistan as perpetuating the ongoing cross-border conflict and sponsoring militant activity in a bid to destabilise the state of J&K and other parts of the country.
- In addition, considering the number of ongoing insurgencies in India, terrorism and violent extremism is also a manifestation of:
  - politico-religious violence
  - ethnic-sub regional nationalism
  - socio-economic conditions
  - politics of identity
- The primary causes of **terrorism and insurgency** in India are based on political, religious, ethnic, ideological, identity-driven, linguistic or socio-economic grievances.
- Terrorism in India can be broadly **categorised in three distinct parts**:
  - Cross border terrorism in J&K.
  - Terrorism in the hinterland.
  - Extreme violence and terrorism as an integral part of the ongoing insurgencies.
- India's richly diverse society provides a **fertile ground for terrorism** to thrive in many areas:
  - politics of communalism and criminalisation
  - fanatic religious movements and irresponsible statements by political and religious leaders
  - human rights excesses
  - marginalised minority communities
  - high levels of youth unemployment
  - poverty
  - illiteracy
  - poor governance
  - prolonged delays in criminal justice

About Counter-Terrorism Committee (CTC)

- The CTC is United Nations Security Council (UNSC) backed body which was established by **Security Council resolution 1373** (2001), which was adopted unanimously on 28 September 2001 in the wake of the 11 September terrorist attacks in the United States.
- The Committee, comprising all **15 Security Council members**, was tasked with **monitoring the implementation of resolution 1373** (2001), which requested countries to implement several measures intended to enhance their legal and institutional ability to counter terrorist activities at home, in their regions and around the world, including **taking steps to**:
  - Criminalize the financing of terrorism
  - Freeze without delay any funds related to persons involved in acts of terrorism
  - Deny all forms of financial support for terrorist groups
  - Suppress the provision of safe haven, sustenance or support for terrorists
  - Share information with other governments on any groups practising or planning terrorist acts
  - Cooperate with other governments in the investigation, detection, arrest, extradition and prosecution of those involved in such acts; and
  - Criminalize active and passive assistance for terrorism in domestic law and bring violators to justice.
- In September 2005, the Security Council adopted **resolution 1624** (2005) on incitement to commit acts of terrorism, calling on the UN Member States to prohibit it by law, prevent such conduct and **deny safe haven** to anyone "concerning whom there is credible and relevant information giving serious reasons for considering that they have been guilty of such conduct." The resolution also called on States to continue international efforts to enhance dialogue and broaden understanding among civilizations.

What is the kind of threat terrorism pose domestically as well as globally?

- Terrorism in modern times is the **biggest security challenge** and a threat to development, people and the global as a whole.
- State-backed terrorism is a major threat for the countries, particularly India. Unfortunately, **South Asia** is known to be the epicentre of terrorism where almost 85% of the terror acts originated in this region.
- What concerns India, is the China-backed Pakistan sponsoring terrorism in achieving their political ideology. Similarly, radical ideologies have also been witnessed in other South Asian countries like Indonesia, Maldives, Taliban-led Afghanistan, etc.

One of the underlining reasons for the lack of international cooperation is the absence of a universal definition

- Defining terrorism has been a contested topic for many decades. Therefore, there are two critical aspects in absence of a universal definition:
  - One is the **outlook** which is attached to the issue of terrorism. When we talk about global terrorism, we need to talk about groups, countries they are associated with, the funding patterns, etc. All this depends upon how a country defines terrorism.
  - The other is the **method of combating terrorism**. Combating terrorism is also closely linked with the definitional aspect of terrorism. That means, what system, which country and which government describes the act of terrorism in what manner?
- The definition was a contested issue and it seems it will be. But, the more important thing here to understand is that a global forum like United Nations (UN) is unable to generate a consensus on the technical aspects of terrorism.
  - This particular thing is an issue for a country like India, which has been a victim of terrorism.

Another important aspect here which India has been bringing up time and again in the UNSC is that there can be no double standards in dealing with terrorists

- The state-sponsored terrorism is the worst form of terrorism and with the increasing inclination towards **hybrid warfare**, there are chances that states may employ or exploit terrorism more.
- Hence, there is a need for coordinated effort and a country like India should protect its interest whether diplomatically or militarily. Coordinated effort should also be built to counter access to finance.

Among the countermeasures taken against the menace of terrorism, one very important aspect is dealing with financing part. This has become even more crucial in today's globalized or interconnected or digitised world.

- Identifying the **source of funding** is the most critical aspect of combating terrorism. This has become more challenging in today's globalized world. Therefore, it is important to find out the source or origin, the network and the operational strategies of terrorist networks.
- But the major challenge in modern times is, that **terrorist groups are much more sophisticated**, their network has been organised. Unlike before, they are started operating from cities and have developed a global network to conduct operations.
- A country like India needed a **coordinated effort** between international agencies, the national and state agencies, and also between different stakeholders, both public and private who could be part of combating terrorist networks.

What are the major stumbling blocks in building cooperation and what's the way out?

- Most countries look at international terrorism from the **prism of national security**. That means, that all the terrorist organisations may not be a threat to a particular country.
- There is a general understanding that even at the level of countries, there are some which are either hubs or sponsor international terrorism. And, with the **veto power of the P5** countries, it would be difficult to build an international consensus.
- Therefore, there has to be an understanding of dealing with international terrorism from a broader perspective.
- There is no universal government, hence, there should be effective **cooperation and exchange of information** between the intelligence apparatus of various countries.

Among all the blocks what is the road ahead?

- The concern here is the **synergist effort** to counter-terrorism. And to counter this menace a country concentrates on all domains, especially the intelligence wing.
- India has the required intelligence which has averted several terrorist attacks in the past. But there are international elements like Pakistan who are interested in cementing terrorism in India. Hence, India needs to keep a close watch on its neighbourhood concerning terrorism.
- **A multi-pronged strategy should be synergized by the international community. Everybody involved in tackling the threat of terrorism is what is required here and as India has been retreating from time to time there can be no double standards in dealing with the issue of terrorism.**
- **Notwithstanding the absence of a globally agreed, legal definition of terrorism, an effective and prevention-focused international response to terrorism is highly desirable, particularly one guided by a normative legal framework and embedded in the core principles of the rule of law, due process and respect for human rights.**

HOOCH

GS-II HEALTH

Context

- Over 30 people **have died** in a hooch tragedy in the Saran district of Bihar, where alcohol is prohibited.

What is hooch?

- Hooch is a commonly used term for **poor-quality alcohol**, derived from Hoochinoo, a native Alaskan tribe that was known to produce very strong liquor.
- Unlike branded liquor which is produced in factories with sophisticated equipment and rigorous quality control, **hooch is made in more crude settings without any quality checks.**

The science of creating alcohol

- Alcohol is produced using two basic processes: **fermentation and distillation**.
- When heated, **yeast reacts with sugar (from grain, fruits, sugarcane, etc.) to ferment and produce a mixture containing alcohol**.
- However, as this process continues and the alcohol levels rise (with more of the sugar getting converted to alcohol), the conditions become toxic for the yeast itself, **eventually ending the process of fermentation**.
- Thus, to make anything stronger than beer or wine (above 14-18% ABV or alcohol by volume), distillation is key.
- Distillation is the **process of physically separating the alcohol from the rest of the mixture using evaporation and condensation**. Since different parts of the mixture have different boiling points, theoretically, if one heats the mixture up to the correct temperature, it will be possible to separate only the alcohol from the water and other remnants. This will be far more potent than any fermented beverage. All spirits (such as whiskey, vodka, gin, etc) are made using this technique.

How is hooch produced?

- Hooch-makers also use this principle. First, they heat water, locally available yeast, and sugar or fruit (often fruit waste) to produce a fermented mixture in a large pot. Once sufficient fermentation has occurred, they distill this fermented mixture to produce concentrated alcohol using a rudimentary setup.
- Often, this setup includes a big vat where the fermented mixture is boiled, a pipe that captures and carries the alcoholic fumes, and another pot wrapped in a wet cloth (to make it cooler), where concentrated alcohol condenses.
- Distillation can be done repeatedly in order to increase the alcohol content of the final product.

Risk associated

- There is an inbuilt risk with crude production method. There is an inherent risk associated with the crude methods of production that hooch-makers employ.
- The fermented mixture which is to be distilled contains more than just consumable alcohol (ethanol). It **also contains methanol, a different form of alcohol which is highly toxic for human beings.**
- Methanol is generally used for industrial purposes. While non-distilled alcoholic beverages like wine contain relatively harmless trace amounts of methanol, during the distillation, both ethanol and methanol are concentrated. Thus**, if done wrong, the end product can have a high concentration of methanol instead of ethanol and thus be poisonous.**
- Methanol has a boiling point of 64.7 °C whereas ethanol has a boiling point of 78.37 °C. This means that during distillation, when the mixture reaches 64.7 °C, the pot collecting concentrated alcohol begins to fill up with a highly toxic chemical. **This must be discarded for the end product to be safe.**
- Further, it is crucial to maintain a temperature of above 78.37 °C but below 100°C (the boiling point of water) to obtain safe-to-consume yet potent liquor. Commercial distillers have sophisticated equipment and multiple checks to maintain the accuracy of the process.

Impact

- Methanol or methyl alcohol can cause impaired vision, high toxicity and metabolic acidosis, a condition in which the body produces excessive acid that cannot be flushed out by kidneys.

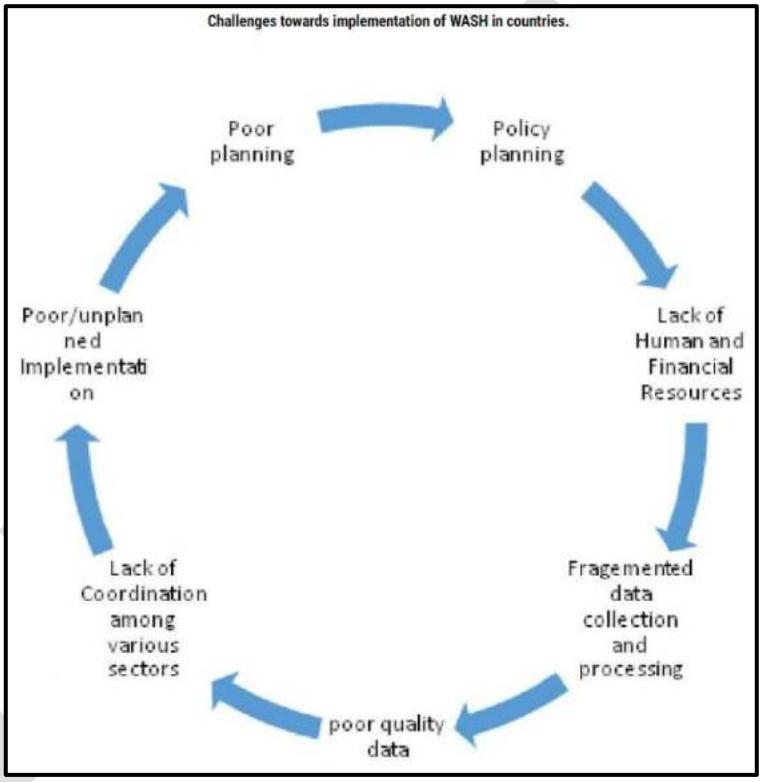
Treatment

- The treatment for this is to intravenously administer **Fomepizole and ethanol**. However, fomepizole can be expensive and unavailable in many parts of India. In such cases, **doctors administer a mixture of ethanol and water (1:1 ratio).**
- Ethanol inhibits methanol's conversion into toxins and helps in flushing it out of the body either naturally or through dialysis.

Context

- The **Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS)** Report by UN-Water was published December 2022.
- The Report has compiled critical evidence and analysed water and sanitation status from 121 countries and 23 external supporting agencies.

Findings of the Report



- **Water, sanitation and hygiene (WASH)** forms an integral part of the health systems and is even more critical after COVID-19. Countries have formal policies and plans but face **a big challenge in implementing them to reach water and sanitation targets.**
- Only three percent of countries had a formal policy or a plan in place with at least 75 percent costing plan available to implement these policies.
- Urban areas are receiving more focus than rural counterparts in terms of surveillance activities and using it to make informed policy decisions. Also, more emphasis is being levied on drinking water quality surveillance and less on sanitation indicators in the national framework.
- Almost half the respondent countries do not have any national coverage target for hand hygiene.
- Amongst the 118 respondents, **only 47 percent had developed a costing plan to implement,** while **only 25 percent had adequate funding available.**
- Policies and plans do not consider the harsh realities of climate change or developing resilient technologies and systems to address the vulnerabilities of WASH.
- Overall funding has decreased by 5.6 per cent from the years 2017-2020, the report showed. Funds and resources do not reach the poor and neglected section of society despite various countries planning for it.
- 40-45 per cent of 118 respondent countries have affordability schemes as targets, but only 25-35 per cent could afford financial programmes to support WASH services.
- Lack of implementation has slowed the pace towards national targets, with only 45 and 25 per cent of countries achieving the drinking water and sanitation targets, respectively.
- These countries need to look into proper utilisation and recovery of available financial resources. Less than half of these countries reported over 75 per cent utilisation of available funds in all the WASH sectors.
- The 'on-track' success of countries like Brazil, Argentina, Thailand, etc, was attributed to proper human and financial resource allocation. The cost recovery through tariff systems was 80 per cent in these 'on-track' countries versus only 19 percent in slow-paced countries.

- Most countries listed in the GLAAS report requiring acceleration reported a shortage of more than 75 percent human resources for various WASH functions.
- Only 17 percent out of 106 countries indicated adequate financial resources (availability of more than 75 percent) required community and user participation for rural drinking water and sanitation.

Way Ahead

- There are eight years left to achieve the UN-mandated 2030 Sustainable Development Goal (SDG)-6 targets. The countries should at least **manage the available financial resources and utilize them** completely to achieve the desired targets by 2030.
- Some countries have to multiply efforts now several folds as they lag behind the targets. A **timely review of plans, targets and progress** is required.
- **Gender imbalance also needs to be considered** as women are an essential pillar in the WASH sector as they are the most affected strata in the WASH domain. The countries also need to implement and monitor the measures to bring more involvement of women and girls despite having plans and policies.

ORGAN DONATION IN INDIA — GS-II HEALTH

Context

- Organ donation numbers in 2021 were close to the highest they have been in the last five years. But deceased donations, the key to addressing India's needs, are still not common enough.

India's legal position on organ donation

- In India, organ donations are legal under the Transplantation of Human Organs Act (THOA), 1994, that also legalises the concept of 'brain death', a permanent cessation of all brain functions.
- In India, a panel of four doctors – a medical administrator, an authorised specialist, a neurologist, and the doctor treating the patient – must jointly declare someone brain dead before their organs can be harvested. A series of exhaustive tests is then performed to announce brain death.

Organ donation statistics in India

- India ranks third in the world only behind USA and China as per the data available on the Global Observatory on Donation and Transplantation (GODT).
- The total number of organ transplants done per year in the country has increased from 4990 in the year 2013 to 12,746 in the year 2019. Similarly, the organ donation rate has increased to about four times as compared to 2012-13. As per estimates, only 0.65 organ donations per million population take place in the country.
- As per the 2019 data of the All Institute of Medical Sciences, annually 1.5 to two lakh people require a kidney transplant. But only around 8,000, meaning four percent people get it. Similarly, every year around 80,000 patients require a liver transplant, but only 1,800 eventually get it. Around one lakh patients require corneal or eye transplants annually, but less than half of people get it. Even for a heart transplant, of the 10,000 who need a heart transplant, only 200 matches with donors.
- There are **only three percent registered organ donors in India**.
- Only 14.07% of the total organs harvested in 2021 were from deceased donors, much less than the 16.77% of 2019.
- Of the 12,387 organs harvested in 2021, only 1,743 — a little more than 14% — were from deceased donors. The numbers harvested in 2021 were close to the highest in the last five years (12,746, in 2019).
- There is also a **geographical skew in deceased donations.** All but two deceased organ donations in 2021 were in 15 states, with **the top five — Telangana, Tamil Nadu, Maharashtra, Gujarat, and Karnataka — accounting for more than 85% of the total.** Two organs were harvested from a deceased donor in Goa.

The main reasons for organ shortage in India are mainly *ignorance and lack of knowledge. People are not well informed enough about the benefits of organ donation.*

Future directions

Awareness and communication:

- There is a great mismatch between the number of potential donors and actual cadaveric donors. Even in the case of individuals who have given consent for donation after death, the influences of the familial members might change the actual decision. Lack of awareness, superstitions, delay in funeral, lack of agreement between family members, fear of social criticism and dissatisfaction with the hospital staff might all influence their decision. It is here that the involvement of other stakeholders, non-governmental organizations and religious leaders would help in imparting awareness and knowledge and in changing the attitude of the general public towards deceased organ donation. Ultimately, **the NOTTO (National Organ & Tissue Transplant Organization) needs to be strengthened** so that it may play a central role in coordinating the activities of deceased organ donation.
- **Public awareness** is the major and foremost factor that can lead to improved rates of deceased organ donation in India. The various myths and misconceptions that revolve around brain death have to be specifically stressed upon and ameliorated.
- **Effective communication** is another important factor. Those interested in donating organs should communicate their desire to their relatives and

- family; and, this decision should be based on a solid foundation of knowledge. Unfortunately, this is directly related to the level of education of the society.

Infrastructure and organizational support:

- Organizational support, in the form of **more transplant centers with good dialysis programs, adequate staff, and experienced members**, is the need of the hour. Research should also be promoted. **National health insurance schemes**, like those practiced in other parts of the world, have to be established to provide financial assistance for the needy.
- **Discussions about donations should be a part of end-of-life care**, when appropriate, and an early involvement of transplant coordinators and counselors should be ensured.
- Strengthening the role of NOTTO for **coordinating the organ distribution system** amongst the cities/states and finally at the national level would ensure further progress in this regard.
- **Setting up tissue banks and improving facilities for ensuring sterilization of the preserved organs** in the already existing ones is the need of the hour.

Laws and guidelines

- Provisions and protocols related to donation after circulatory death, and guidelines to withdraw life support should be clearly mentioned.
- **Declaring brain-death should be made mandatory in all hospitals** and an annual audit should be conducted for monitoring this activity. This will ensure the accountability of neurologists, neurosurgeons, and intensivists in implementing organ donation programs in a particular setup.

Financial aid

- Government can help by **providing financial help by collaborating with private air carriers to help in mobilizing the donated organ to different parts of the country and** thereby preventing organ wastage.

ASCENDING THORACIC AORTIC ANEURYSM / GS-II HEALTH

Context

- Grant Wahl, a US sportswriter covering the World Cup, died in Qatar. The autopsy found that Wahl had an "ascending thoracic aortic aneurysm".

The condition

- An aneurysm is a **localised weakening of the wall of a blood vessel**, which causes the vessel to bulge in that area — as a result of which **the vessel may widen to more than 50 per cent of its usual diameter**. Aneurysms are more commonly seen in arteries than in veins.
- The aorta is the main artery that carries oxygenated blood from the heart to the rest of the body; it is also the body's largest blood vessel. An aortic aneurysm is a weakening and bulging in a portion of the aorta; "thoracic" refers to that section of the blood vessel that passes through the chest.
- Aneurysms occur more often in the portion of the aorta that runs through the abdomen rather than the chest (causing what is called "abdominal aortic aneurysm").
- An aneurysm increases in size over time, and the wall of the blood vessel gets progressively weaker in that area. The vessel may ultimately burst or separate, triggering a bleeding rush that can be life-threatening, and potentially lethal.

Causes

1. Among the possible causes of thoracic aortic aneurysm, are
2. Degenerative disease that causes breakdown of the aortic wall tissue;
3. Genetic disorders;
4. Family history;
5. Vasculitis, or inflammation of the arteries;
6. Atherosclerosis, or the build-up of plaque on the walls of the artery. In rare cases, an infection can also trigger an aneurysm.
7. Marfan syndrome, a genetic disorder increases the risk of this type of aneurysm.

Marfan syndrome

- Marfan syndrome describes it as a genetic condition that affects connective tissue and can damage the blood vessels and cause aneurysms of the aorta.
- The syndrome presents in around 1 in 5,000 individuals and is caused by a mutation in the FBN1 gene that limits the body's ability to make the proteins needed to build connective tissue.

Symptoms

- Symptoms of thoracic aortic aneurysms may depend on the location, size and speed of growth of the bulging; often, there are **no symptoms at all.**

- Symptoms, if they appear, may include (i) pain in the jaw, neck, chest, or upper back; (ii) wheezing, coughing, or shortness of breath (due to pressure on the trachea); (iii) hoarseness (due to pressure on the vocal cords); and (iv) trouble swallowing due to pressure on the oesophagus. These symptoms are not unique to thoracic aortic aneurysms, which may delay focussed medical attention.

Diagnosis and treatment

- A doctor may look at the patient's medical history and carry out a detailed physical examination, including **a computed tomography (CT) scan, magnetic resonance imaging (MRI), an echocardiogram (Echo), a transoesophageal echocardiogram (TEE), a chest X-ray, and an arteriogram (angiogram).**
- Treatment may include **monitoring the size and rate of growth of the bulge through an MRI or CT**, and managing risk factors such as quitting smoking, controlling blood sugar (for diabetics), losing weight (if overweight), and eating healthy. Medicines may be prescribed for high cholesterol or high blood pressure.
- **Surgical intervention may be needed** if the aneurysm is large or is causing symptoms, and may include thoracic aortic aneurysm open repair (making a large incision) or endovascular aneurysm repair (EVAR), which requires small incisions in the groin. The surgery could remove the aneurysm, or insert a **stent to support the blood vessel against possible rupture.**

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GENERAL STUDIES - III

MODIFIED GUIDELINES ON DIGITAL LENDING & FLDG

GS-III ECONOMY

Context

- Months after the Reserve Bank issued guidelines on digital lending, banks, non-banking financial companies and fintech players are still awaiting clarity on many aspects, including the First Loss Default Guarantee (FLDG) system.

Digital Lending

- Digital lending involves **giving and recovering loans through web platforms or mobile apps**. It facilitates speedy disbursal and helps lower costs. Lending Service Providers (LSPs) operate in collaboration with Non-Banking Financial Companies (NBFCs) who disburse credit to customers using the former's platform. However, these platforms often resort to reckless practices by lending beyond a borrower's repayment capacity.

RBI has categorised digital lenders into three groups:

1. Entities which are regulated by the RBI and are allowed to carry out lending business.
2. Entities that are authorized to carry out lending as per other statutory or regulatory provisions but are not regulated by the RBI.
3. Entities lending outside the purview of any statutory or regulatory provisions.

RBI's new guidelines on the backdrop of illegal lending

- The RBI came out with guidelines on digital lending aimed at protecting customers from unethical business practices, such as **mis-selling, breach of data privacy, unfair business conduct, charging of exorbitant interest rates adopted by digital lenders and excessive engagement of third parties in digital lending transactions.**
- As per the findings of an RBI Working Group, released in November 2021, as many as 600 out of 1100 lending apps currently available for Indian Android users across 80 application stores are illegal apps.
- The working group set up by the RBI has proposed stringent norms for digital lenders, including a separate legislation to prevent illegal digital lending activities.
- The RBI asked the regulated entities like banks to ensure that Lending Service Provider (LSP) and Digital Lending App (DLA) comply with the guidelines.

Lack of clarity regarding FLDG

What is FLDG?

- First Loan Default Guarantee (FLDG) is a lending model serviced between digital-lending fintechs, and their partner banks and NBFCs. Under these agreements, the fintech originates a loan and promises to compensate the partners up to a pre-decided percentage in case customers fail to repay.
- The bank/NBFC partners lend through the fintech but from their own books. **FLDG helps expand the customer base of traditional lenders but relies on the fintech's underwriting capabilities.** A report by an RBI-constituted working group on digital lending has laid down risks of FLDG agreements with unregulated entities. The other concern is that **FLDG costs are often passed on to customers.**

Lack of clarity

- Banks, NBFCs and fintechs have sought clarification from the RBI on First Loss Default Guarantee (FLDG), on which RBI has advised the regulated entities to follow its directions on securitisation, especially, **synthetic securitisation.**
- FLDG is a lending model between a fintech and a regulated entity in which a third party guarantees to compensate up to a certain percentage of default in a loan portfolio of the regulated entities (RE).
- Synthetic securitisation means a structure where credit risk of an underlying pool of exposures is transferred through the use of credit derivatives or credit guarantees to hedge the credit risk of the portfolio. This is an issue on which RBI needs to give more clarity as the guidelines just refer to the earlier issued securitisation norms.
- According to fintech firms, the **RBI has been vague about FLDG and there is no clarity on what is permissible and what is not permissible as far as these partnerships are concerned**.

Significance of RBI's guidelines in general

- The most significant or favourable change as per the new guidelines is the direct disbursal of the loan amount, i.e., from the lender's account to the beneficiary's account, without any third-party involvement.
- The revised digital lending guidelines aim to smoothen the digital lending process and also protect consumers from unusually high-interest rates from the lenders. The new guidelines **will keep a tab on unethical loan recovery practices.**

- The revised RBI's guidelines on digital lending pave the way towards **a secure, inclusive, and accessible digital lending ecosystem.** It empowers customers with full transparency about the information & data that is being accessed by the lenders, giving them control over their own personal information. The RBI has also standardised disclosures, therefore, enabling customers to make more informed decisions.
- The guidelines aim to tackle concerns like unscrupulous lending practises and involvement of third parties, misselling, and data privacy.
- For the unregulated entities classified as LSPs (Lending Service Providers), there is almost an equal burden to abide by these rules.
- The systems of banks and fintech have to be aligned for co-lending.

LINGERING CRISIS OF LABOUR IN THE POST-PANDEMIC ERA

GS-III ECONOMY

Context

- The International Labour Organisation (ILO) recently released two reports that gave an indication of the global employment scenario post-pandemic.

Details

- The 'Global Wage Report 2022-2023: The Impact of inflation and COVID-19 on wages and purchasing power' discuss the twin crises, inflation and economic slowdown, which created a "striking fall" in real monthly wages around the globe. The report blames the war in Ukraine and the global energy crisis for this situation. Another report, the 'Asia-Pacific Employment and Social Outlook 2022: Rethinking sectoral strategies for a human-centred future of work' stated that the Asia-Pacific region lost about 22 million jobs in 2022.

What does the data show?

- The ILO report on wages looked at the real and nominal wages of employees.
- In India, the nominal wages rose to ₹17,017 per month in 2021 from ₹4,398 in 2006. The data was taken from the Government of India's Ministry of Statistics and Programme Implementation. But when inflation is factored in, the real wage growth in India plunged to -0.2% in 2021 from 9.3% in 2006. In China, the growth decreased from 5.6% in 2019 to 2% in 2022. In Pakistan, the growth is -3.8%. Figures of Sri Lanka were not available. The negative growth in India started after the pandemic.
- The report said the increasing cost of living has the greatest impact on lower-income earners and their households as they have to spend most of their disposable income on essential goods and services, which generally experience greater price increases than non-essential items.

ILO Definitions

- The word "wage", was defined as the total gross remuneration including regular bonuses received by employees during a specified period for time (monthly for the report) worked as well as for time not worked, such as paid annual leave and paid sick leave.
- The nominal wage data shows the adjusted figures after accounting for consumer price inflation while real wage growth refers to the year-on-year change in real average monthly wages of all employees.

Is inequality rising?

- At the Asia-Pacific level, only the jobs in high-skill occupations saw a recovery from the COVID-19 crisis, which is true across all subregions.
- The ILO said it is raising concerns about increased inequality. While there is an employment gain of 1.6% among high-skill workers between 2019 and 2021, there is no such substantial gain among low-to-medium-skill workers.
- Among the G-20 countries, the report noted a significant gap in the average level of real wages between advanced G-20 countries and emerging G-20 countries such as India. It is on the level of about $4,000 per month in advanced economies and about $1,800 per month in emerging economies.

What are the ILO's remedies?

Future nominal wage adjustments

- The report suggests a set of policy options and responses to the cost-of-living crisis. Citing studies, the report said that 75 to 95 million people were pushed into extreme poverty during COVID-19. It said the bargaining process for future nominal wage adjustments should embrace a sufficiently large but prudent price expectation. This could contribute to safeguarding the standard of living of households — particularly low-income households — against unexpected future inflation hikes, while avoiding an undesirable wage-inflation spiral.

Strengthen labour market institutions and wage policies

- The report said **that there is a need to strengthen labour market institutions and wage policies**. The ILO states that the

creation of decent formal wage employment is a prerequisite for a more equitable distribution of wages and income, and is a key contributor to equitable and sustainable wage growth.

Focus on gender pay gap

- It wants governments to focus on gender pay gap as when women leave the labour market, they are less likely to return than men.

Multilateral approach

- Most importantly, the report says that a multilateral approach is the key to solving the crises around us. There is an urgent need to address the negative effects of climate change; increasing inequalities; the poverty, discrimination, violence and exclusion endured by millions of people, including the discrimination that women and girls continue to suffer in many parts of the world; the lack of vaccines and access to adequate sanitation and essential healthcare for all; and the growing digital divide between poor and wealthier countries.

About ILO

- It was **created in 1919**, as part of the **Treaty of Versailles** that ended World War I, to reflect the belief that universal and **lasting peace can be accomplished only if it is based on social justice**.
- The Organization has **played a role** at key historical junctures – the **Great Depression**, **decolonization**, the creation of Solidarność in Poland, the victory over apartheid in South Africa – and today in the building of an **ethical and productive framework for fair globalization**.
- The **driving forces** for the ILO's creation arose from security, humanitarian, political and economic considerations.
- It is the **only tripartite U.N. agency**. It brings together **governments, employers and workers** of 187 member States, to set labour standards, develop policies and devise programmes promoting decent work for all women and men. Its **headquarters** are in Geneva, Switzerland.

48TH GST COUNCIL MEETING / GS-III ECONOMY

Context

- The 48th GST Council meeting was held on December 17.

Key Highlights of the 48th GST Council meeting

- **Decriminalisation of three kinds of offences under GST.**
- **A few GST rate rationalization matters were taken up**.
- **Clarifications were given on a few taxation matters**, such as the GST on equipment used by petroleum companies for exploration.
- **e-Commerce operators** can allow the suppliers to be registered under the composition scheme and unregistered vendors, facilitating e-commerce for all the micro-enterprises.
- Cess on SUV at 22% clarified- Applicable if meets 4 criteria-
  - Popularly known as SUV,
  - The engine capacity of more than 1500 cc,
  - Length more than 4000 mm and
  - Ground clearance equal to or more than 170 mm
- Further, Council clarified that no GST on insurance is levied on the No-claim bonus offered by insurance companies, so it is deductible from the premium without a GST charge.
- **Tax Rates Reduced and clarified**
- **The GST rates on the following items were slashed-**

Item description	Before	After
Husk of pulses, along with chilka and concentrates, chuni or churi, and khanda used as cattle feed*	5%	Nil
Ethyl alcohol that is sold to refineries to blend it with the motor spirit or petrol	18%	5%
Sale of Mentha arvensis, similar to Mentha oil	No RCM	Under Reverse Charge Mechanism

Clarifications on tax rates for supply of goods and services are as follows-

- 5% GST is charged on imported equipment or goods classified in the concessional 5% GST rate category for petroleum operations and 12% GST applies if the general rate is higher than 12%.
- No GST is chargeable if the residential dwelling is rented to a GST-registered person in their personal capacity for their own

use/account as a residence and not for business.
- No GST on incentives paid to banks by the Central Government as a subsidy under the promotion of RuPay Debit Cards and low-value BHIM-UPI transaction schemes

In a nutshell,

GST amendments for ease of Trade and Business

Decriminalisation under GST:

- The Council has decided to decriminalise the following three offences under the GST law –
- The tax threshold for **launching prosecution under GST or taking criminal action** is increased from Rs.1 crore to Rs.2 crore, except for fake invoices. In other words, offences pertaining to the issuance of invoices without the sale of goods or services or both or dealing with fake invoices continue to be prosecuted if the tax amount is more than Rs.1 crore.
- Reduction in the **compounding amount** from the current tax range of 50%-150% to the range of 25%-100%
- Certain offences such as **obstruction or restricting any officer** from discharging their duties, intentional tempering of material evidence and failure to provide the information.

Unregistered persons to get new refund rules:

- Earlier, there was no defined process for refund claims for the buyers not registered under GST upon cancellation of the contract/ agreement for the sale of services such as flat/house construction and long-term insurance policy and upon the expiry of the time limit to issue credit note by the supplier.
- The GST Council decided to amend the CGST Rules and directed CBIC to issue a Circular for the procedure to file a refund application by such unregistered buyers.

Facilitate e-commerce for micro-enterprises from 1st Oct 2023:

- From 1st October 2023, GST-unregistered suppliers, dealers and composition taxable persons can sell goods through e-commerce operators within the state, subject to some conditions.

Reversal of Input Tax Credit (ITC) for non-payment of an invoice within 180 days:

- CGST Rule 37(1) will be amended retrospectively to provide for **reversal of input tax credit for non-payment of an invoice within 180 days**.
- Reversal of ITC means **the credit of inputs utilised earlier would now be added to the output tax liability, effectively nullifying the credit claimed earlier**.

- Input tax credit is the credit that a manufacturer has received for having paid input taxes towards the inputs that have been used in the manufacture of goods and products. With the help of input tax credit, he can offset the output tax against the input tax already paid. ITC is **a mechanism to avoid cascading of taxes.**
- For eg- A trader purchases good worth rs 100 and pay tax of 10% on it. And now this trader sold such goods at Rs. 150 and collect tax of Rs. 15 from buyer. Now the trader has to pay Rs. 15 to government but he had already paid Rs. 10, so this Rs. 10 is ITC of the trader and will be allowed as deduction from tax payable and he has to pay net Rs. 5 as tax.

Streamlining GST Compliance

- **Biometric-based Aadhaar authentication**, as well as risk-based physical verification of GST registration applicants, is proposed in Gujarat on a pilot basis with amendments in CGST Rules for curbing fake and fraudulent registrations.
- **Form will capture PAN-linked mobile numbers and e-mail IDs** (from the CBDT database) with OTP verification to restrict misuse of PAN of a person.
- Amendment that **restricts filing of all GST returns and statements can be filed after a maximum of three years** from the due date.
- Amendment in the **definition of "non-taxable online recipient"** and **definition of "Online Information and Database Access or Retrieval Services (OIDAR)"** to reduce issues in interpretation and litigation on taxation of OIDAR Services.

REFORMS IN THE TELECOM SECTOR / GS-III ECONOMY

Context

- Government is committed to reforms in telecom sector. This information was given by the Minister of State for Communications, in Rajya Sabha.

India's Telecom Sector

- India's telecommunication network is the **second largest in the world** by number of telephone users (both fixed and mobile phone).
- It has **one of the lowest call tariffs in the world** enabled by mega telecom operators and hyper-competition among them.
- India has the **world's second-largest Internet user-base**.

- Indian telecom industry underwent a **high pace of market liberalization and growth since the 1990s** and now has become the world's most competitive and one of the fastest growing telecom markets.

Reforms undertaken

- Rationalization of Adjusted Gross Revenue;
- Rationalization of Bank Guarantees(BGs);
- Rationalization of interest rates and removal of penalties;
- Dispensing with the requirement of BGs (for auctions held after 15.09.2021) to secure instalment payments;
- Permission for surrender of spectrum after 10 years (in future auctions);
- Dispensing with the requirement of Spectrum Usage Charge (SUC) for spectrum acquired in spectrum auctions held after 15.09.2021;
- Removal of additional spectrum usage charge (**SUC**) of 0.5% for spectrum sharing;
- Permission for 100% Foreign Direct Investment (FDI) in telecom sector under automatic route subject to safeguards;
- Fixed time for spectrum auctions (normally in the last quarter of every financial year);
- Requirement of licenses under 1953 Customs Notification for wireless equipment replaced with self-declaration;
- Permission for Self-KYC;
- e-KYC rate revised to only one Rupee;
- Dispensing with the requirement of fresh KYC for shifting from Prepaid to Post-paid and vice-versa;
- Replacement of paper Customer Acquisition Forms with digital storage of data;
- Easing SACFA clearance for telecom towers; and
- Addressing liquidity requirements of the Telecom Service Providers by way of moratorium/deferment.
- Government has also published draft Telecom Bill on 21st September, 2022.
- Regular consultations are carried out with industry, operators and their associations on various issues, including improving quality of services, bridging digital gap and ensuring security of the telecommunication networks.

Government Initiatives

- Some of the other major initiatives taken by the government for growth of telecom companies are as follows:

BharatNet

- The Government is implementing the flagship BharatNet project (in phases), to link each of the 2.5 lakh Gram Panchayats of India through optical fibre network. This is the largest rural connectivity project of its kind in the world and is the first pillar of Digital India Programme.
- It will facilitate the delivery of various e-Services and applications including e-health, e-education, e-governance and e-commerce in the future.
- The project envisages optimal mix of underground fibre, fibre over power lines, radio and satellite media for providing broadband connectivity which can be utilized by all categories of service providers on a non-discriminatory basis.

Twitter Sewa

- The Ministry of Communications & Information Technology has launched **Twitter Sewa, an online communications platform for registration and resolution of user complaints** in the telecommunications and postal sectors.

Net neutrality framework

- The Telecom Regulatory Authority of India (TRAI) has released a consultation paper which aims to offer consumers free Internet services within the net neutrality framework and has proposed three models for free data delivery to customers without violating the regulations.

Two options of payments

- The Government of India has liberalized the payment terms for spectrum auctions by allowing two options of payments to telecom companies for acquiring the right to use spectrum, which include **upfront payment and payment in installments.**

Amendment of the Unified License for telecom operations

- The Department of Telecommunications (DoT) has amended the Unified Licence for telecom operations which will allow sharing of active telecom infrastructure like antenna, feeder cable and transmission systems between operators, thereby lowering the costs of operations and leading to faster rollout of networks.

National Action Plan for Skill Development in Telecom Sector

- The Ministry of Skill Development and Entrepreneurship (MSDE) signed a Memorandum of Understanding (MoU) with Department of Telecommunication (DoT) to develop and implement National Action Plan for Skill Development in Telecom Sector, **with an objective of fulfilling skilled manpower requirement and providing employment and entrepreneurship opportunities in the sector.**

Recommendation against dropped calls

- The Telecom Regulatory Authority of India (TRAI) has directed the telecom companies or mobile operators to compensate the consumers in the event of dropped calls with a view to reduce the increasing number of dropped calls.

PLI scheme

- PLI scheme is an initiative that provides incentives to domestic industries to boost local production. Through this scheme the Government aims to give companies incentives on incremental sales from products manufactured in domestic units.
- PLI Scheme has been introduced in Telecom & Networking Products sector for Enhancing India's Manufacturing Capabilities and Enhancing Exports – Atmanirbhar Bharat. In October 2021, 31 companies (including both domestic and global companies) were provided approval under the PLI Scheme.

Read: ***https://www.iasgyan.in/daily-current-affairs/pli-scheme-1***

Wi-Fi Hotspots

- For accessing broadband services in all the 2.5 lakh Gram Panchayats under BharatNet, around 12.5 lakh Wi-fi hotspots will be set up (with 5 hotspots in each panchayat on an average) in rural areas. This is going to provide broadband access to millions of people in rural areas. In addition to the Wi-Fi hotspots provisioned in the BharatNet, the Government is going to set up 1 Wi-Fi Hotspots infrastructure at BSNL's Telephone Exchanges in rural areas.

Comprehensive Telecom Development Plan for North East Region

- The Government has approved a Comprehensive Telecom Development Plan for North East Region to be funded from Universal Service Obligation Fund (USOF).
- This project will connect 8621 villages through installation of 6000 mobile tower sites. The Department is also implementing a project for laying over 3000 km of Submarine Optical Fibre Cable between Mainland (Chennai) and Port Blair and five other islands namely Car Nicobar, Little Andaman, Havelock, Kamorta and Great Nicobar Islands of Andaman & Nicobar Islands.

UNIVERSAL SERVICE OBLIGATION FUND (USOF)

- The genesis of USOF is almost 200 years old, with the concept of Universal Service Obligation having been introduced by Rowland Hill in 1837 with his postal reforms. The postal reforms included uniform rates across the United Kingdoms (UK) and prepayment by sender via postage stamps. Universal Service was the key objective of the Universal Postal Union.
- In India, the Universal Service Obligation (USO) Fund was established initially with the fundamental objective of providing access to "Basic" telegraph services to people in remote and rural areas at affordable and reasonable prices. Subsequently, the Indian Telegraph (Amendment) Act, 2006 was notified on 29.12.2006 to repeal the term "Basic" wherein the scope of USO Fund was widened to provide access to telegraph services (including mobile services, broadband connectivity and ICT infrastructure creation) in rural and remote areas.
- The Universal Service Obligation Fund (USOF) aims to provide for quality and affordable mobile and digital services across the rural and remote areas of the country; allowing non-discriminatory access to mobile and network services along with equitable access to knowledge and information dissemination, leading to rapid socio-economic development with improved standard of living.
- The Universal Service Obligation (USO) Fund is headed by the Administrator, USO Fund who is appointed by the Central Government, for the administration of the fund. It is an attached office of the Department of Telecommunications (DoT), Ministry of Communications.

Introduction of Virtual Network Operators (VNO)

- The Government issued guidelines for UL(VNO) on 31st May, 2016. VNO system allows Telecom Service Providers to utilize their networks and spectrum efficiently by sharing active and passive infrastructure.
- Further, VNOs can provide services in small towns and rural areas using the network of existing TSPs having unutilised capacity or by last mile connectivity. This apart, the VNOs can be effective in providing services in airports or buildings or in smart cities.

Right of Way Rules

- The Government has notified the Indian Telegraph Right of Way Rules, 2016 to regulate underground infrastructure (optical fibre) and over ground infrastructure (mobile towers). This rule is applicable to all telecom service providers holding a licence under the Indian Telegraph Act, 1885.
- These rules have simplified the grant of right-of-way permissions for creation of telecom infrastructure by making it transparent and time-bound.
- This measure is expected to facilitate an increase in the pace of creation of infrastructure both in both rural and urban areas.

5G Network

- The fifth generation of mobile network communication technology- known as 5G, holds the promise of applications with high social and economic value, leading to a 'hyper-connected society' in which technology will play an even more important role in people's lives.
- 5G will not only facilitate but also add a new dimension to the missions like 'Digital India' and 'Smart Cities'.
- DoT is supporting research and study in 5G through financial assistance to institutions of national importance for

establishment of 'Indigenous 5G Test Bed at IIT Chennai, in collaboration with premier technology institutions including IIT Delhi, IIT Mumbai, IIT Hyderabad and IISC Bengaluru.

Machine to Machine (M2M) networks

- Department of Telecommunications (DoT) intends to facilitate complete ecosystem around M2M networks in the backdrop of 'National Telecom M2M Roadmap' which will act as the foundation for a digital society leading to integration of physical & digital infrastructure.

Transition to IPv6

- Planned transition to Next Generation Internet Protocol i.e. IPv6 assumes significance as it is essential for sustainable growth of Internet, one of the key pillars of Digital India.

National Digital Communications Policy 2018

- The Policy aims to accomplish the following Strategic Objectives by 2022:

1. Provisioning of Broadband for All
2. Creating 4 Million additional jobs in the Digital Communications sector
3. Enhancing the contribution of the Digital Communications sector to 8% of India's GDP from 6% in 2017
4. Propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017
5. Enhancing India's contribution to Global Value Chains
6. Ensuring Digital Sovereignty

Bottlenecks

- The Indian government has worked on liberalizing certain policies in the past few years but has been protective of the telecom sector for reasons of national security.
- However, the telecom industry has also borne the consequences of **disruptive policy challenges within the country, retrospective taxation, restrictions on types of equipment, besides suffering from huge debts and expenses on telecom licensing and spectrum buying, issue of payment of Adjusted Gross Revenue (AGR).**
- Given the rapid pace of technological developments and their effect on the economy, the telecom sector, more than any other sector, needs to have policies that facilitate growth and are in coherence with global trends.

Looking Forward

- As a next step, like other countries, DoT would need to strongly consider **allowing Cloud, Voice Services and Software-Defined Wide Area Network (SD-WAN) over the internet**, and allowing **Voice over Internet Protocol (VoIP).** This will help organizations to be cost-effective, agile, and focused on providing better products and services with superior customer experience.
- Going forward, the latest technologies like **'Internet via satellite'** will drastically increase **internet penetration to the remotest locations in the country.** This is expected to further propel digitization efforts, with many rural and remote users gaining access to the World Wide Web.
- **Commercial Internet satellites**, though at a nascent deployment stage, will co-exist along with the future of telecom technology—5G and 6G. While satellite internet could address the coverage challenges, **5G and 6G technologies would address the need for higher speed, performance without latency, and immersive experience**
- Although the telecom sector in India has struggled with restrictions and policy disruptions for a long, the reforms taken up by the government now point towards a new era of healthy growth. These reforms will bring alive the digital aspirations of 1.3 billion people and accelerate India's journey to be a digitally powered economy.
- India's telecom journey has moved paces away from the **first telegraph communication set up in Kolkata** and is on a good trajectory toward digitalization. Further reforms in telecom regulations will propel the future of Digital India to greater heights.

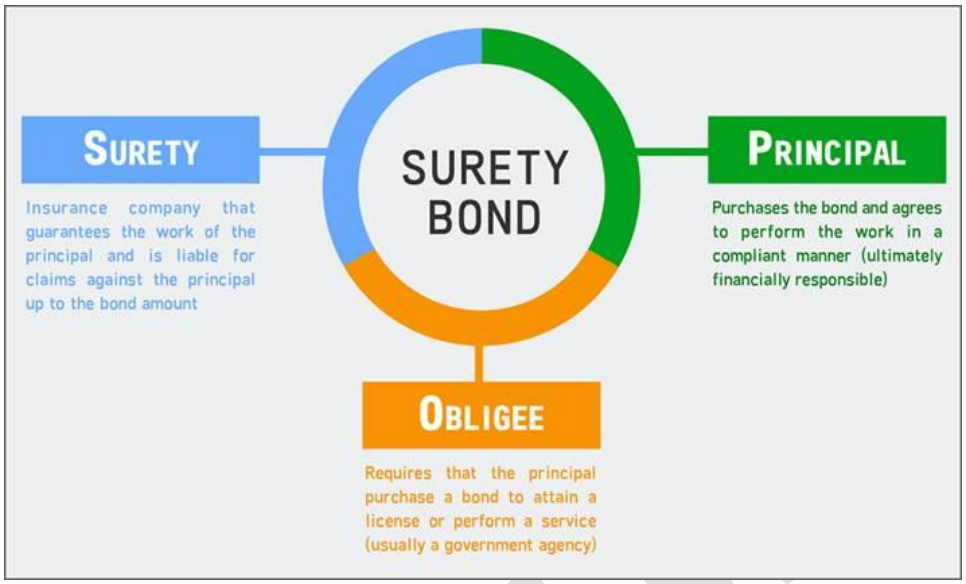
SURETY BOND INSURANCE / GS-III ECONOMY

Context

- Union Minister for Road Transport and Highways Shri Nitin Gadkari launched one of India's first-ever Surety Bond Insurance products from Bajaj Allianz.

Surety Bond Insurance

- Surety bonds are a contract or a **three-way agreement that are guarantees of payment, which insurers issue**.
- The surety (insurance companies/banks) provides the financial guarantee to the obligee (government) that the principal (contractor) will fulfil their obligations as per the agreed terms.



- Surety bonds will **aid in developing an alternative to bank guarantees for the construction of infrastructure projects.** However, these are different from bank guarantees as in this a considerable amount of the project funds of contractors does not get frozen.
- Surety Bond Insurance will act as **a security arrangement for infrastructure projects** and will insulate the contractor as well as the principal.
- The product will cater to the requirements of a diversified group of contractors, many of whom are operating in today's increasingly volatile environment.
- The Surety Bond Insurance is a risk transfer tool for the Principal and shields the Principal from the losses that may arise in case the contractor fails to perform their contractual obligation.
- The product **gives the principal a contract of guarantee** that contractual terms and other business deals will be concluded in accordance with the mutually agreed terms. In case the contractor doesn't fulfil the contractual terms, the Principal can raise a claim on the surety bond and recover the losses they have incurred.
- **Unlike a bank guarantee, the Surety Bond Insurance does not require large collateral from the contractor** thus freeing up significant funds for the contractor, which they can utilize for the growth of the business. The product will also help in reducing the contractors' debts to a large extent thus addressing their financial worries. **The product will facilitate the growth of upcoming infrastructure projects in the country.**

Significance

- Surety bonds will ensure the efficient use of working capital and reduce the requirement of collateral, which construction companies need to provide.
- Insurers will work in tandem with financial institutions to share risk information. This will assist in releasing liquidity in the infrastructure space without compromising on risk aspects.

IRDAI Surety Insurance Contracts Guidelines, 2022

- The IRDAI Surety Insurance Contracts Guidelines, 2022 came into effect on April 1, 2022. As per the guidelines, the premium charged for all surety insurance policies underwritten in a financial year, including all instalments due in subsequent years for those policies, should not exceed 10% of the total gross written premium of that year, subject to a maximum of Rs 500 crore.
- Also, insurers can issue contract bonds, which assure the public entity, developers, subcontractors, and suppliers that the contractor will fulfil its contractual obligation while undertaking the project.
- Bonds that surety insurance covers include contract bonds, bid bonds, performance bonds, advance payment bonds, custom and court bonds and retention money.
- The limit of the guarantee should not exceed 30% of the contract value. Finally, surety insurance contracts should be issued only to specific projects and not clubbed for multiple projects.

Possible risk factors

- A few of the possible risk factors could be **a lapse in bond coverage**, which can invalidate a licence or contract. In addition, required bond renewals could add to ongoing costs and hassle.
- Considering that surety bonds are a relatively new concept in India, they are a risky product as insurance companies are yet to achieve the expertise in risk assessment in such a business.
- Moreover, there is **no clarity on pricing,** the recourse available against defaulting contractors, and reinsurance options.

Final Thought

- The above-mentioned issues need to be addressed in consultation with all the stakeholders.
- Apart from this product launch is in line with the government's vision to up-scale the infrastructure development in the country to increase the pace of development of upcoming projects.
- The government of India is making concerted efforts to implement measures that will accelerate the development of

infrastructure in India and Surety Bond Insurance is a decisive step in this direction.

GLOBAL MINIMUM TAX

GS-III ECONOMY

Context

- Members of the European Union **agreed in principle to implement a minimum tax of 15% on big businesses**.

CORPORATE TAX

A corporate tax is **a levy which the government imposes on the income of a company**. The money collected from corporate taxes is used as the source of revenue for a country.

Global Minimum Corporate Tax Rate

- The global minimum corporate tax rate, or simply the global minimum tax, is a **minimum rate of tax on corporate income internationally agreed upon and accepted by individual jurisdictions**. Each country would be eligible for a share of revenue generated by the tax. The aim is to reduce tax competition between countries and discourage multinational corporations (MNCs) from profit shifting to achieve tax avoidance.
- 136 countries had agreed on a plan to redistribute tax rights across jurisdictions and enforce a minimum tax rate of 15% on large multinational corporations. It is estimated that the minimum tax rate would boost global tax revenues by $150 billion annually.

PROFIT SHIFTING

Tax is levied on the multinational company by the Government as a percentage of the profit or income of the multinational company. **Using the loopholes, the multinational company shifts its income or profit to another country which could be a tax haven**.

Note: A **tax haven** is a jurisdiction with very low "effective" rates of taxation for foreign investors.

Background

- European Union members have agreed to implement a minimum tax rate of 15% on big businesses in accordance with Pillar 2 of the global tax agreement framed by the Organisation for Economic Cooperation and Development (OECD) in 2021.
- Under the OECD'S plan, governments will be equipped to impose additional taxes in case companies are found to be paying taxes that are considered too low. **This is to ensure that big businesses with global operations do not benefit by domiciling themselves in tax havens** in order to save on taxes.
- Pillar 1 of the OECD's tax plan, on the other hand, tries to address the question of taxing rights. Large multinational companies have traditionally paid taxes in their home countries even though they did most of their business in foreign countries.
- The OECD plan tries to give more taxing rights to the governments of countries where large businesses conduct a substantial amount of their business. As a result, large U.S. tech companies may have to pay more taxes to the governments of developing countries.

What is the need for a global minimum tax?

- Corporate tax rates across the world have been dropping over the last few decades as a result of competition between governments to spur economic growth through greater private investments.
- Global corporate tax rates have fallen from over 40% in the 1980s to under 25% in 2020, due to global tax competition that was kick-started by former U.S. President Ronald Reagan and former British Prime Minister Margaret Thatcher in the 1980s.
- The OECD's tax plan tries to **put an end to this "race to the bottom"** which has made it harder for governments to shore up the revenues required to fund their rising spending budgets. The minimum tax proposal is particularly relevant at a time when the fiscal state of governments across the world has deteriorated as seen in the worsening of public debt metrics.
- The global minimum tax is expected to generate around $150 billion in new global tax revenues annually. The cumulative impact is that **tax havens would no longer exist since taxes avoided in the haven would be collected at home.**
- This means that if a company's earnings go untaxed or lightly taxed in one of the tax havens, their home country would impose a top-up tax that would bring the effective rate to 15%.

Implications

- The plan **will help counter rising global inequality by making it tougher for large businesses to pay low taxes by availing the services of tax havens**.
- Critics of the OECD's proposal, however, see the global minimum tax as a threat. They argue that without tax competition between governments, the world would be taxed a lot more than it is today, thus adversely affecting global economic growth.
- In other words, these critics believe that it is the threat of tax competition that keeps a check on governments that would

otherwise tax their citizens heavily to fund profligate spending programs.

Global Minimum Tax: The India Impact

- India loses about $10 billion to tax abuse through profit shifting every year — the second-largest tax revenue loss in Asia. India had already taken measures like **equalisation levy, and the latest digital services tax** to minimise tax evasion by foreign corporates.
- India had also gotten into **Tax Information Exchange Agreements (TIEAs)** with tax havens for access to information on tax enforcement. The enactment of Global Minimum Corporate Tax requires India to take down these policies and switch to the proposed two-pillar international norms.
- Norms to put an end to tax evasion by corporates have been sought out by governments across the world. The GMCT has now given fresh hopes of fighting tax evasion globally.

Wrapping it up

- Countries must remain vigilant against corporate lobbying that may jeopardize the tax treaty. Importantly, its success is more of a **political will or skill than economics** since it depends on how much pressure major countries exert on the tax havens.
- Thus, **active and sincere cooperation among the countries is necessary** for its success. Finally, a global treaty born out of democratic participation and discussion can make tax havens a thing of the past.

INDIAN RUPEE TRADE SETTLEMENT MECHANISM / GS-III ECONOMY

Context

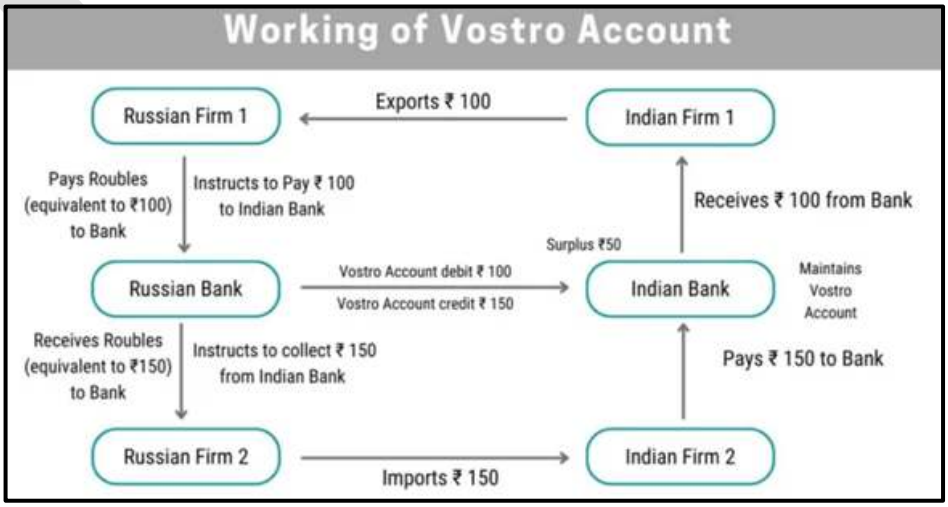
- Sri Lanka has agreed to use the Indian rupee (INR) for foreign trade after the Indian government said that it is looking for ways to bring countries into the ambit of the Indian rupee trade settlement mechanism that has a shortage of dollars.

What is International Trade Settlement in rupees?

- When countries import and export goods and services, they have to settle payments in a foreign currency. Since the US Dollar is the world's reserve currency, most of the trade occurs in US dollars.
- For example, if an Indian buyer enters into a transaction with a seller from Germany, the Indian buyer has to first convert his rupees into US dollars. The seller will receive those dollars, which is then converted into euro.
- Here, both the parties involved have to incur the conversion expenses and bear the risk of foreign exchange rate fluctuations. With the help of a Vostro account now, instead of paying and receiving US dollars, the invoice will be made in Indian rupees if the counterparty has a Rupee Vostro account. This is known as **International Trade Settlement in rupees.**

Vostro account

- Rupee Vostro Accounts keep a foreign entity's holdings in the Indian bank, in Indian rupees. When an Indian importer wants to make a payment to a foreign trader in rupees, the amount will be credited to this Vostro account, and when an Indian exporter needs to be paid for supplying goods or services, this Vostro account will be deducted, and the amount will be credited to the exporter's account.



- The bank of a partner country; e.g. German banks may approach an AD bank in India for the opening of Special Rupee Vostro account. The AD bank then will seek approval from the RBI with details of the arrangement and subsequent to the approval granted by the RBI, the Special Rupee Vostro account in the Indian AD bank by a German bank shall be opened.
- The trade settlement shall then start between the parties in INR. The exchange rate between the currencies of two trading partner countries may be market determined. The RBI allowed nine such accounts, including IndusInd Bank and UCO Bank.

Indian Rupee Trade Settlement: Background, Mechanism and Benefits

- The Reserve Bank of India (RBI) in July 2022 had announced an international trade settlement mechanism in the Indian Rupee

(INR). The mechanism will enable the invoicing of exports and imports in the INR. It will involve setting up the INR Vostro accounts by authorised Indian banks and their corresponding banks in partner countries. Indian importers will pay for imports in the INR which will then be credited into these accounts. Indian exporters, on the other hand, will receive payments from these accounts.

- The core objective of the mechanism is to reduce the invoicing of trade in United States (US) dollar by shifting to the INR. Such shifting will make it much **easier for Indian exporters and importers to trade with countries facing difficulties in invoicing trade in the US dollar.** These include countries like Russia and Iran. Due to prevailing Western sanctions, traders from these countries find it tough to mobilize the US dollar for invoicing exports and imports. An arrangement enabling the pricing of trade in the INR will overcome these difficulties and accelerate their trade with India.
- Difficulties in mobilizing the US dollar are affecting the trade prospects of several countries which face acute foreign exchange shortages. Traders from several parts of Africa, South America and Asia are unable to mobilize the US dollar for invoicing. The problem of mobilizing the US dollar affects trade between these countries and the rest of the world. **If these countries are willing to invoice exports and imports trade in the INR, it will brighten the prospects of their bilateral trade with India.**

Closing Thoughts

- Indian rupee trade settlement **could marginally narrow India's widening trade deficit** by reducing the price of commodity imports. This move will help **reduce India's dependency on US dollars**. While this decision won't have a considerable short-term impact, it **will benefit the country in the long-term.**
- But India would move cautiously on internationalizing the local currency given associated risks for the economy, such as high exposure to global shocks, asset bubbles and exchange rate volatility.

GREEN HYDROGEN ELECTROLYZER — GS-III ECONOMY

Context

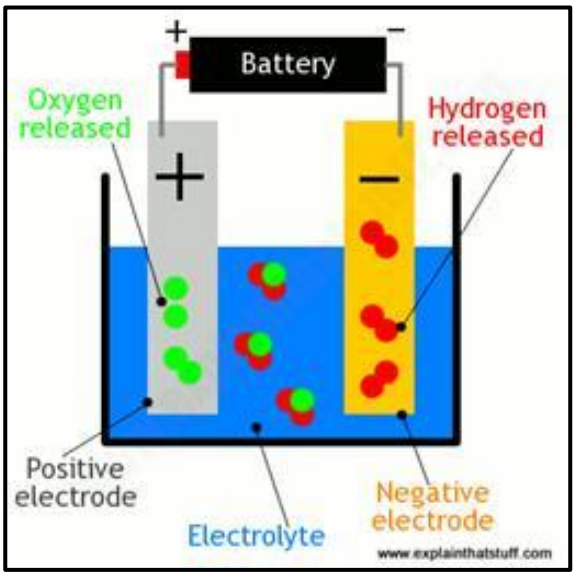
- India can transform and become the global leader, exporter, producer of electrolyzer and global champion of green hydrogen, but for that, multilateral institutions must also finance our entrepreneurs said India's G20 Sherpa Amitabh Kant.

Electrolyzer

- The **electrolyser is an apparatus** that produces hydrogen through a chemical process (electrolysis) capable of separating the hydrogen and oxygen molecules of which water is composed using electricity.
- One of the world's largest electrolysers is located in Fukushima, Japan, at the site of the well-known nuclear disaster, **symbolising a paradigm shift in energy production** as it is powered by solar panels.

How does an Electrolyzer work?

- **Electrolysis was first discovered in 1800.**After the invention of the electric battery by Alessandro Volta in the same year, other chemists tried connecting their poles in a container of water. They discovered that the current flowed through the water and that hydrogen and oxygen were separated at the electrodes.
- An electrolyser consists of a conductive electrode stack separated by a membrane to which a high voltage and current is applied. This causes **an electric current in the water which causes it to break down into its components: hydrogen and oxygen.** The complete system also includes pumps, power electronics, gas separator and other auxiliary components such as storage tanks.
- The oxygen generated in parallel is released into the atmosphere or can be stored for later use as a medical or industrial gas in some cases. **The hydrogen is stored as a compressed gas or liquefied for use in industry or in hydrogen fuel cells,** which can power transport vehicles such as trains, ships and even aircraft.



India and Electrolysers

- India is emerging as one of the world's most important electrolyser manufacturing centres, **with 8GW of factories due to come on line by 2025**, according to analysis from Norwegian research house Rystad Energy.
- **Green hydrogen is fast emerging as the next mega-industry in the clean energy space.** Hydrogen, both a feedstock and an energy carrier, is considered a critical factor in the decarbonization of the hard-to-abate sectors. Apart from decarbonization, hydrogen can play an integral role in increasing India's energy self-reliance and reducing oil and gas import bills. Thus, over

50 countries have announced or are working on a national hydrogen policy roadmap.

- Under the first phase of its hydrogen policy, India plans to manufacture 5 million tonnes (Mt) of green hydrogen per annum by 2030, **translating to an electrolyzer demand of 50GW–60GW.**Electrolyzers being the key component in the green hydrogen value chain, their market is expected to grow exponentially in the next 3-5 years.

Present Scenario

- Currently, there are only a few electrolyzer OEMs with extensive production facilities and advanced technologies, presenting a significant opportunity for India to become a global electrolyzer manufacturing hub that caters to domestic as well as international demands.
- However, keeping a sharp eye on emerging technologies and the upcoming demand trends is necessary for electrolyzer OEMs to scale up domestic manufacturing and make the most of this million-billion-dollar opportunity.

Untapping the opportunity: Key Steps

- The industry needs to focus on two key pillars to make the most of this opportunity. **One is the scale-up of domestic manufacturing capabilities**, and the **other is the R&D of technology.** Scaling up the production of available technologies will help ensure the supply of critical components and bring down the cost of electrolyzers.
- Currently, the cost to produce and operate electrolyzers is high due to the inefficiency of technology and the end-to-end support systems. Increasing the overall efficiency will provide a significant opportunity for OEMs. For instance, the efficiency of PEM electrolyzers can be boosted by 60-70 per cent just by improving the materials used in the stack.
- Electrolyzers have three key subsections – **power electronics, stack, and balance of stack**. Stack and power electronics determine the electrolyzers' performance and contribute to their cost as they consist of high-value components. **Manufacturing and supply of these components are confined to a few geographies and are practically non-existent in India,** adding to the cost factor.
- Thus, **India must consider end-to-end manufacturing to truly bring down costs and create value in the manufacturing space.** The policy incentives should facilitate the creation of an end-to-end electrolyzer manufacturing ecosystem and domestic supply chain of critical high-value subcomponents.
- While scaling up the **production of advanced technology should be the first step, research to improvise other technologies, such as alkaline and PEM, to boost efficiency, increase reliability and reduce costs is equally important.**
- In addition, research to develop disruptive technologies is paramount for India to emerge as a global leader in the green hydrogen industry.
- As the demand for electrolyzers is expected to increase in the next few years, the players must consider partnerships with energy and utility players as renewable power hubs are better suited for green hydrogen production due to access to renewable electricity. These partnerships will play an integral role in supporting the development of a green hydrogen ecosystem.

Significance of Electrolysers

- Hydrogen produced in this sustainable way, i.e. without emitting carbon dioxide into the atmosphere, can be the basis for a decarbonised economy.
- Apart from decarbonization, **hydrogen can play an integral role in increasing India's energy self-reliance and reducing oil and gas import bills.**

The way forward

- India has a huge opportunity to become the global hub for electrolyzers' design, technology, and manufacturing.
- However, the country must learn from the lessons of the semiconductor and solar boom periods and seize this emerging opportunity with innovation, the right push from the government and a synchronized response from the industry players.

GREEN HYDROGEN

A **colourless, odourless, tasteless, non-toxic and highly combustible gaseous substance**, hydrogen is the lightest, simplest and most abundant member of the family of chemical elements in the universe. But a colour — green — prefixed to it makes hydrogen the **"fuel of the future".** The 'green' depends on how the electricity is generated to obtain the hydrogen, which does not emit greenhouse gas when burned. Green hydrogen is **produced through electrolysis using renewable sources of energy such as solar, wind or hydel power.** Hydrogen gas **can be used as a fuel in transportation, power generation and industrial activities**. It doesn't cause greenhouse gas emissions such as carbon dioxide.

Green hydrogen, which has the potential to replace fossil fuels, is the name given to hydrogen gas produced using renewable energy such as wind or solar power that do not entail greenhouse gas emissions.

Context

- The Parliamentary Standing Committee on Commerce has recommended setting up a RoDTEP (Remission of Duties and Taxes on Exported Products) Council, on similar lines to GST (Goods and Services Tax) Council. This would define a road map for short- and medium-term changes in rate structure by ensuring periodic review of rates under the scheme.

RoDTEP Scheme

- **About:** RoDTEP (Refund of Duties and Taxes on Exported Products) is a **flagship export promotion scheme** of the Commerce Ministry of India.
- **Aim**: The scheme aims to refund to the exporters the embedded central, state and local duties and taxes paid on inputs that were so far not refunded or rebated. It had the aim to boost the domestic exports and replace the export incentive scheme Merchandise Exports from India (MEIS) scheme.
- **Applicability:** The government decided to **extend the benefit of the RoDTEP scheme to all goods,** with effect from January 1, 2021. This came after a World Trade Organization (WTO) ruling stated that the MEIS scheme violated provisions of the trade agency as it was providing export subsidies for several ranges of goods.

Features of the RoDTEP Scheme

Refund of the previously non-refundable duties and taxes

- Mandi tax, VAT, Coal cess, Central Excise duty on fuel etc. will now be refunded under this particular scheme. All the items under the MEIS and the RoSTCL (Rebate of State and Central Taxes and Levies) are now under the purview of the RoDTEP Scheme.

The automated system of credit

- The refund will be issued in the form of transferable electronic scrips. These duty credits will be maintained and tracked through an electronic ledger.

Quick verification through digitisation

- Through the introduction of the digital platform, the clearance happens at a much faster rate. Verification of the records of the exporters will be done with the help of an IT-based risk management system to ensure speed and accuracy of transaction processing.

Multi-sector scheme

- Under RoDTEP, all sectors, including the textiles sector, are covered, so as to ensure uniformity across all areas. Additionally, a dedicated committee will be set up to decide regarding the sequence of introduction of the scheme across the various sectors, what degree of benefit is to be extended to each sector, and such related matters.

Eligibility to obtain benefits of the RoDTEP Scheme

- All sectors, including the textiles sector, may enjoy the benefits of the RoDTEP Scheme. Labor-intensive sectors that enjoy benefits under the MEIS Scheme will be given a priority.
- Manufacturer exporters and merchant exporters (traders) are both eligible for the benefits of this scheme.
- There is no particular turnover threshold to claim the RoDTEP.
- Re-exported products are not eligible under this scheme.
- To be eligible to avail the benefits of this scheme, the exported products need to have the country of origin as India.
- Special Economic Zone Units and Export Oriented Units are also eligible to claim the benefits under this scheme.
- Where goods have been exported via courier through e-commerce platforms, RoDTEP scheme applies to them as well.

Significance

- The scheme is set to give India a huge boost in terms of revenue and exports. The scheme extends the government's plans for expanding international trade and increasing export revenue, as was exemplified during the six months of tax-free exports.
- The RoDTEP scheme can help exporters create better solutions for their customers by lowering costs and increasing efficiency because they don't have to worry about paying taxes or duties on imported capital goods.
- Additionally, exporters will no longer have to pay taxes or duties on imported capital goods. This helps avoid situations where the company has to face issues due to compliance-related questions.

Context

- The net direct tax collection grew 24 percent to ₹ 8.77 lakh crore in the April-November of the current fiscal, the Finance Ministry said.

What is a Direct Tax?

- Direct taxes, usually **levied on a person's income and wealth,** are paid directly by people or an organization to the Government.
- The person or the organization in question cannot transfer this type of tax to another person or entity for payment. Some of the examples of direct tax include income tax and wealth tax.

Types of Direct Taxes in India

- The various types of direct taxes levied on the citizens by the Government Of India are discussed as follows:

Corporate Tax

- Under the Indian Income Tax Act, 1961, **both Indian as well as foreign organizations are liable to pay taxes to the government.**
- The corporate tax is **levied on the profit of domestic firms that are different from the shareholders.**
- Also, foreign corporations whose profits appear or are deemed to emerge in India are also liable to pay taxes to the Government of India.
- The income of a company, be it in the form of dividends, interest and royalties, is taxable. Corporate tax also includes the following :

Minimum Alternative Tax (MAT)

- The MAT is imposed by the Government on Zero Tax companies. The accounts of these companies are made according to the Companies Act.

Minimum Alternate Tax is applied **when the taxable income calculated according to the I-T Act provisions is found to be less than 15.5 per cent** (plus surcharge and cess as applicable) of the book profit under the Companies Act, 2013.
For example, a company with Rs 100 crore book profit is required to pay a minimum tax of Rs 15 crore (assuming 15 per cent MAT rate). If its normal tax liability after claiming deductions is Rs 10 crore (less than MAT), it is required to pay the remainder Rs 5 crore as MAT and use MAT credit equivalent to Rs 5 crore to pay tax in the future.
In September 2019, the government reduced the MAT tax rate from 18.5 per cent to 15 per cent while also slashing the corporation tax rate to 22 per cent from 30 per cent. MAT is levied on book profit, unlike normal corporation tax, which is levied on taxable profit.
Book profits refer to the profit earned by the business entity from its operations and activities and is calculated by deducting all the business expenses incurred within a financial year from all the sales revenue and other income generated from the selling of goods & services within that same financial year.
Taxable income is the base income upon which tax is levied. It includes some or all items of income and is reduced by expenses and other deductions.

Fringe Benefits Tax (FBT)

- Fringe benefit tax (FBT) was a form of tax that companies paid in lieu of benefits they offered their employees in addition to the compensation paid to them (examples, gym, drivers and maids). It was **included by the Finance Act 2005 with effect from April 1, 2006.**

Dividend Distribution Tax (DDT)

- An amount that is declared, distributed or paid as a dividend to the shareholders by a domestic company is taxed under the Dividend Distribution Tax. It is applicable to domestic companies only; **foreign companies are exempted from this tax rule**.

Securities Transaction Tax (STT)

- The SST is imposed on the income which the companies get through taxable securities transactions. This tax is free of any surcharge. It is **similar to tax collected at source (TCS).** STT is a direct tax levied on every purchase and sale of securities that are listed on the recognized stock exchanges in India.

2) Wealth Tax

- The wealth tax is **imposed on property owners**. It does not matter if the property is generating an income or not.
- If owning a property, one is liable to pay wealth tax yearly to the Government of India on the basis of the current market value of the property.
- Not everything is taxable under the wealth tax law.
- The working assets are exempted from the wealth tax law. Some of the examples of working assets are as follows:

1. Gold Deposit Bonds
2. Stock Holdings
3. Commercial Complex Properties
4. House property (rented for more than 300 days yearly)
5. House property owned for business or professional requirement
6. House property held for business or profession

3) Capital Gains Tax

- The capital assets of an individual refer to anything owned for personal use or to make an investment.
- For businesses, the **capital asset is anything that can be used for more than a year**and is not intended to be sold or liquidated during the course of business operation.
- Machinery, cars, homes, shares, bonds, art, businesses and farms are some of the examples of capital assets.
- The capital gains tax is imposed on the income derived from the sale of investments or assets.
- On the basis of the holding period, **capital tax is categorized under short-term gains and long-term gains**. The formula to calculate the capital gains is:

$$\textit{Capital Gains} = \textit{Sale Value} - \textit{Purchase Value}$$

- **Only those capital assets are liable to short-term gain, which are sold within 3 years of acquisition**.
- The exception to this rule is securities. The capital assets sold after being held for more than 3 years fall under long-term gains

Benefits of Direct Tax

- The direct taxation has its share of benefits. Some of them are listed as follows:

Economic

- The direct tax such as the income tax is **collected annually and is mostly deducted at the source**.
- For example, the income tax is deducted from an employee's salary every month.
- This **saves a great number of administrative costs** as here the employer acts as the tax collector.
- This system makes direct tax more economical than other types of taxes where a lot of administrative costs are involved.

Productive

- The direct taxes are also very productive. The revenue generated from direct tax is directly proportional to the changes in the national wealth of the country.
- In simple words, the **increase in a country's population and/or prosperity will consequently increase the returns on direct tax.**

Certain

- In case of direct tax, a taxpayer is certain about the amount of tax to be paid.
- In addition, the tax authorities can also precisely estimate the revenue they can expect from the direct tax.
- There is **no ambiguity in the tax amount** as it is decided before the tax submission date.
- This certainty on the tax amount from both the sides **helps in eliminating corruption from the tax collection system.**

Equitable

- The direct taxes are **imposed on the basis of a taxpayer's income.**
- The taxpayers with high income need to pay more taxes compared to the taxpayers with lesser income. In other words, the rich pay more taxes than the poor.
- This is, however, applicable to all the sections of the society.
- People belonging to similar economic conditions are taxed under the same rate.
- The equitable trait of the direct tax serves the purpose of equality and justice across all sections of the population.

Progressive

- The direct taxes **play an important role in reducing the gap of financial inequalities across the country.**
- These taxes are progressive **as the government imposes tax on people according to their income**.
- The money collected from these taxes helps implement policies and rules for the uplift of the poor in the society, helping achieve the aim of social and economic equality.

Anti-inflationary

- Direct taxes can be used as an anti-inflationary tool to **stabilize the price level in the market**.
- It can be **used to control the use and demand of products.**
- The increase in demand of the product and services during **inflation can be decreased by increasing the direct tax.**
- Doing this will force people at large to spend less money to purchase the products and services, thus, reducing their demand and consequently the inflation rate.

APTI PLUS

Direct vs Indirect Tax: Key Differences

Basis	Direct Taxes	Indirect Taxes
1. Meaning	If a tax levied on the income or wealth of a person is paid by that person (or his office) directly to the Government, it is called direct tax.	If tax is levied on the goods or services of a person is collected from the buyers by another person (seller) and paid by him to the Government it is called Indirect tax.
2. Incidence and Impact	Falls on the same person. Imposed on the income of a person and paid hr the same person.	Falls on different persons. Imposed on the sellers but collected from the consumers and paid by sellers.
3. Burden	More income attracts more Income tax. Tax burden Is progressive on People.	Rate of tax is flat on all individuals. Therefore more income individuals pay less and lesser portion of their income as tax. Tax burden is regressive.
4. Evasion	Tax evasion is possible.	Tax evasion is more difficult.
5. Inflation	Direct tax helps in reducing the inflation.	Indirect tax contributes to inflation.
6. Shifiability	Cannot be shifted to others	Can be shifted to others
7. Examples	Income Tax, Wealth Tax. Capital Gains Tax. Securities Transaction Tax. Perquisites Tax.	GST, Excise Duty.

AVGC SECTOR / GS-III ECONOMY

Context

- The Animation, Visual Effects, Gaming and Comic (AVGC) Task Force has called for a National AVGC-XR Mission for integrated promotion & growth of the AVGC sector.

AVGC Sector

Growth

- The **animation, visual effects, gaming and comic (AVGC)** is one of the fastest emerging sectors in India that has witnessed phenomenal growth in recent years. India today **contributes about $2.5-3 billion out of the estimated $260-275 billion worldwide AVGC market.**
- Govt. of India has prioritized this sector by mentioning its potential to become the **torch bearer of 'Create in India' and 'Brand India'.**

Potential

- The global AVGC industry amounts to $800 billion, and the Indian AVGC sector is brimming with the **potential to bag up to 5 percent of the global share ($40 billion), by 2025** given that it has an annual growth rate of over 25-30 percent.

Digitization and AVGC

- While rapid digitisation was more or less a panacea to the disruptions caused by the pandemic, the metaverse is guaranteed to take social connections, virtual collaborations, and digital mobility to the next level.
- The workforce worldwide, including in India, has long begun leveraging the benefits of the metaverse.
- If it gets the correct atmosphere to grow in - the Indian AVGC sector has the capacity to become the zenith of Digital India and the hallmark of the 'Brand India' dream.

Employment

- AVGC Sector creates an abundance of employment opportunities for several skilled sectors, with over 160,000 jobs that it could provide yearly.
- Currently, there are 1.85 lakh professionals employed in the AVGC sector, with another 30,000 employed indirectly. The industry would employ approximately another 20 lakh individuals by 2030 to sustain its growth.

Conclusion

- Because of the wide range of sub-sectors that amass under AVGC's wide umbrella, there is **a need for a broad vision to help further incubate this industry.**
- The proposed AVGC Mission ought to have a broad enough vision that it facilitates and caters to the needs of every player under AVGC's wing, from platforms and developers to distributors and hardware/software.
- There is thus a **requirement for not only financing and resource allocation for the sector**, but also education and talent development.
- In the same vein, curriculum planning that extends toward **AVGC related courses would go a long way in upskilling the youth**, gearing them on to veer this industry in the right direction.

- To further proliferate this trend, India could also take a few pages out of the books of other countries with thriving AVGC industries. **Gaming, VFX, and animation markets in the likes of the US or South Korea,** for instance, have been heavily incubated, and are thus at the crest of the wave on a global scale today.
- While India's technology and design sectors are flourishing, **the country can still apply and absorb globally recognized best practices in the fields of data science, design, animation, etc.**

Way Ahead

- The main recommendations of the Task Force categorized broadly under 4 categories are as under

Domestic Industry Development for Global Access

1. A National AVGC-XR Mission with a budget outlay to be created for integrated promotion & growth of the AVGC sector.
2. Launch of a 'Create in India' campaign with exclusive focus on content creation, In India, For India & for World!
3. With a goal to make India the global hub for AVGC, institute an International AVGC Platform, along with a Gaming Expo) with focus on FDI, Co-production treaties and Innovation.
4. Establish a National Centre of Excellence (COE) for the AVGC sector to become an international reference point across Skilling, Education, Industry Development and Research & Innovation for the AVGC sector. Regional COEs will be instituted in collaboration with the State Governments to provide access to local industries and to promote local talent and content.

Developing Talent ecosystem to realize Demographic Dividends

1. Leverage NEP to develop creative thinking with dedicated AVGC course content at school levels, to build foundational skills and to create awareness about AVGC as a career choice.
2. Launch AVGC focused UG/ PG courses with standard curriculum and globally recognized degrees. Standardize admission tests for AVGC related courses.
3. With an eye on the demand of 20 Lakh skilled professionals in AVGC sector in this decade, augment skilling initiatives for AVGC sector under MESC. Enhance Industry participation to ensure employment opportunities and absorption for students from non-metro cities and NE states.
4. Establish AVGC Accelerators and Innovation hubs in academic institutions, on lines of Atal Tinkering Labs.

Enhancing Technology & Financial Viability for Indian AVGC Industry

1. Democratize AVGC technologies by promoting subscription-based pricing models for MSME, Start-Ups and institutions.
2. Made in India for AVGC technologies through incentive schemes for R&D and IP creation. Evaluate PLI scheme to incentivize AVGC hardware manufacturers.
3. Enhanced Ease of Doing Business in AVGC sector i.e tax benefits, import duties, curbing piracy, etc.
4. Leverage Start-Up India to provide technical, financial and market access assistance to AVGC entrepreneurs to promote culture of R&D and local IP Creation.

Raising India's soft power through an Inclusive growth

1. Establish a dedicated Production Fund for domestic content creation from across India to promote Indian culture & heritage globally. Evaluate Reservation for high-quality indigenous content by broadcasters.
2. For an Inclusive India, target skilling and industry outreach for youth in Tier 2 & 3 towns and villages in India. Establish Special incentives for women entrepreneurs in AVGC sector.
3. Promote local Children's channels for raising awareness on rich culture and history of India among children and youth.
4. Establish framework to ensure Child Rights Protection in the digital world.

GREENWASHING / GS-III ECONOMY

Context

- Reserve Bank Deputy Governor called for a taxonomy on green finance to avoid the risk of "greenwashing".

What is 'greenwashing'?

- Greenwashing refers to misleading the general public into believing that companies, sovereigns or civic administrators are doing more for the environment than they actually are. This may involve making a product or policy seem more environmentally friendly or less damaging than it is in reality.
- The term was **coined by environmentalist Jay Westerveld in 1986.**
- The phenomenon came into practice as consumers and regulators, owing to greater awareness and environmental consciousness, increasingly sought to explore planet-friendly, recyclable and sustainable 'green' products. By 2015, 66% of consumers were willing to shell out more for a product that was environmentally sustainable.

How is it done?

- Although several companies, cities, states and regions have committed to reaching net-zero, in the absence of regulation, a lot of these pledges are not aligned with the science to achieving the same and do not have enough detail to be credible.

- Additionally, the inconsistent use of terms 'net-zero', 'net-zero aligned', 'eco-friendly', 'green' and 'ecological' among others are not accompanied with satisfactory evidence to substantiate their claims.
- In April, the U.S. Federal Trade Commission penalised retailers Kohl and Walmart $5.5 million for misleading customers about their home furnishing products being made of bamboo. In reality, they were made of rayon — a fibre made from cellulose whose manufacturing entails the use of harmful chemicals such as sodium hydroxide that are hazardous to the environment.

Why does greenwashing happen?

- It is done **primarily for a company to either present itself as an 'environment-friendly' entity or for profit maximisation.**
- The latter could be achieved by either introducing a product, catering to the inherent demand for environment-friendly products, or, in certain instances, using the larger idea as a premise to cut down on certain operational logistics and providing consumer essentials.

Implications

- If greenwash premised upon low-quality net zero pledges is not addressed, it will undermine the efforts of genuine leaders, creating both confusion, cynicism and a failure to deliver urgent climate action.
- It is thus necessary to establish a level-playing field and measures where actions correspond with stated ambitions.

Challenges

- The processes and products that can potentially cut emissions are so many that it is practically impossible to monitor and verify all.
- There is lack of regulation and standardisation in most of these spaces.
- The processes, methodologies and institutions to measure, report, create standards, verify claims and grant certifications are still being set up.
- In the meanwhile, large number of organisations has sprung up claiming expertise in these areas and offering their services for a fee. Many of these organisations lack integrity and robustness, but their services are still availed by corporations because it makes them look good.

Combating 'Greenwashing'

- Coal, oil and gas account for 75% of global greenhouse gas emissions, thus, net zero pledges are entirely incompatible with continued investment in fossil fuels. Firstly, that companies must work towards reducing emissions across their entire value chain and not limit the endeavour to only one part of the chain. Secondly, the companies must not invest, through any means, in harnessing fossil fuels or engage in deforestation and other environmentally destructive activities.
- Verification and enforcement in a voluntary space can be particularly challenging. To this effect, **a regulatory mechanism would ensure that non-state actors also put forth their net-zero commitments in case they have not**. This, in turn, would also induce competitiveness in the space — made possible by standardized norms and regulations.
- Financial institutions need to immediately discontinue all lending, underwriting and investments in companies wanting to strengthen or expand their coal-related infrastructure such as power plants and mines. As for oil and gas, it recommends the discontinuation of all investments that would involve exploration of new oil and gas fields, expansion of existing reserves and further production.
- Corporations pursuing net zero targets must not be allowed to make fresh investments in fossil fuels, must be asked to present short-term emission reduction goals on the path to achieving net zero, and must bring an end to all activities that lead to deforestation.
- There is a need for the **creation of regulatory structures and standards as soon as possible.**
- A **formal definition of green finance along with a taxonomy "is the need of hour"** and added that it will enable more precise tracking of finance flows to green sectors in India. A green taxonomy is **a framework for defining what can be called environmentally sustainable investments**.
- A taxonomy would also help banks and financial institutions in better assessing the climate risk in their loan portfolio, scaling up green and sustainable finance and mitigating the risk of greenwashing.

NATIONAL RETAIL TRADE POLICY

GS-III ECONOMY

Context

- The Department for Promotion of Industry and Internal Trade (DPIIT) has sought the views of departments and ministries on its draft National Retail Trade Policy.

Objectives

- The objectives of the National Retail Trade Policy are listed below:
- To promote **e-commerce** all over the country.
- To leverage retail trade as a tool for socio-economic development of the country.
- To encourage skill development and create more employment opportunities for all sections of society involved in retail trade.
- To identify and address existing infrastructure gaps affecting the retail trade industry.
- To accelerate investment flow to underdeveloped regions across the country.

Fundamentals of Retail Trade Policy

- The national retail trade policy should address the state and central level trader related aspects. This policy would address the following:

Infrastructure Development

- This Retail Trade Policy would address the issue of physical infrastructure in setting up of data centres along with power supply, connectivity etc. will be established by the relevant implementing agencies, while financing agencies would identify these as infrastructure that they would intend to support.

Foreign Direct Investment (FDI)

- This policy aims to encourage foreign investment in the marketplace and e-commerce platform, in which foreign investment has been made. Apart from facilitating foreign investment in e-commerce marketplaces, the FDI also takes into account the interests of traders, sellers, domestic manufacturers, MSMEs, start-ups and seeks to create a sustainable level in the retail industry.

Strategies Relating to e-Commerce Marketplaces

- The below following would apply to all e-commerce websites or applications:
- The product shipments from other countries to India should be channelised through the customs route.
- An integrated system that connects Customs and India Post to be developed with better track imports.
- Any non-compliant e-commerce website will not be allowed to operate in India.
- All e-commerce apps or website in India should have a registered business entity in India as the importer on record through which sales in India are accomplished.
- All e-Commerce apps or website available to Indian consumers displaying prices in INR should have MRPs on all packaged products, physical products and invoices. Department of Consumer Affairs would evaluate violations and decide corrective actions for such apps or website.
- Business or Consumer payments from Indian banks and payment gateways to unauthorised and unregistered **GST** non-compliant apps should be excluded.
- E-commerce entities would be mandated to make full disclosure to the consumer regarding the purpose and use of data collection upfront, in a simplified and an easily understandable form on their websites or application interfaces.

Anti-Counterfeiting Measures

E-Commerce business would be required to undertake the following activities:

- The details of the seller should be made available on the marketplace app or website for all products, including the name of the seller, address and contact details.
- Sellers would provide an undertaking to the platform about the products they are selling, and the same must be made accessible to consumers.
- Trademark owners would be allowed to register themselves with e-commerce platforms. Whenever a trademarked product is uploaded for sale on the platform, and that would be intimated the owners.
- In the case of high-value goods, it is required to seek authorisation from the trademark owner before listing the product.
- In case of complaint received about a product is fake, then the same will be conveyed to the trademark owner within 12 hours. If the trademark owner informs about the product being sold on its platform and the seller would be notified regarding the same.
- The seller of this platform would agree to provide guarantee and genuineness of the products sold by the seller.
- The delivery of goods to the customers and customer satisfaction would be the responsibility of the seller.
- In case a customer makes a complaint about the product, then the marketplaces would have the liability to return the amount paid by the customer.

Authentic Ratings and Reviews

- There should be non-discrimination and transparency in the publishing of reviews and ratings. All reviews and ratings for

verified purchases should be published as registered by the customer.

Consumer-Oriented Customer Service

- The publication of email address and phone number for consumer grievances is compulsory for all e-Commerce app and websites.
- An acknowledgement of consumer complaints to be placed as well as clear cut timelines for their disposal has to be performed. These timelines are to be displayed on the application or website.

Prevention of Sale of Prohibited Items

- The application or website where sale and purchase of products take place should display the product list, which is prohibited as specified by the DGFT or any other authority concerned.
- Sellers is required to provide an undertaking to the application or website that they are not involved in selling such products on the platform.
- If the case of selling prohibited products or the complaint is received, then the platform should immediately remove the prohibited product from the application or website within the prescribed time limit of 24 hours. In addition to the above, such sellers will be blacklisted from the platform if notified by the concerned authority.

Small Enterprises and Start-ups

- The start-ups and small enterprises entering into the digital sector would be given with infant-industry status. The benefits to access the data could be provided to such enterprise and start-ups to ease the process and to provide the best practices and platforms.

Consumer Protection

- The electronic system for redressal of grievances, including compensation available to the consumer electronically. Any transaction completed online must have an online system of grievances redressal to boost consumer confidence.

Payment Issues

- The issues related to payment processing and any other financial transactions which are related to e-commerce will be addressed to prevent theft, data-leaks and sensitive data and enable secure transactions.

Export Promotion through e-Commerce

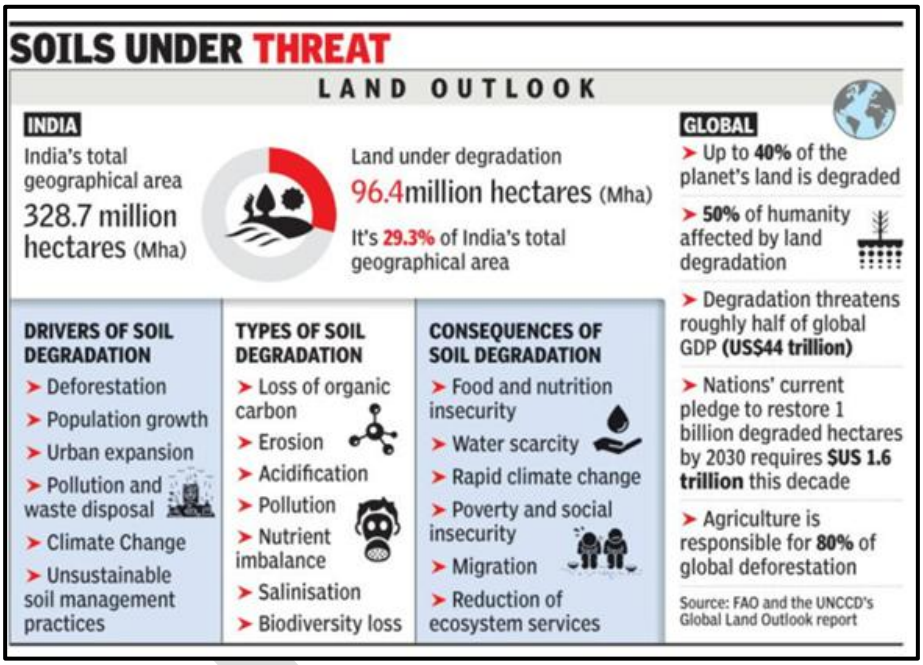
- The Government through schemes like **Services Exports from India Scheme (SEIS)**, **Merchant Exports from India Scheme (MEIS)** and policies like repatriation of remittances out of exports through online payment gateway service providers (OPGSPs) has aimed to incentivize exports.
- Therefore, the Government of India should facilitate and promote exports through e-commerce but not only incentivizing exports, but also by reducing administrative requirements and costs along with simplifying procedures related to compliance.

Context

- Soil degradation can have irreparable consequences on human and ecosystem health and food security which cannot be ignored.

Background

- Healthy soils are essential for our survival. They support healthy plant growth to enhance both our nutrition and water percolation to maintain groundwater levels. Soils help to regulate the planet's climate by storing carbon and are the second largest carbon sink after the oceans. They help maintain a landscape that is more resilient to the impacts of droughts and floods. As soil is the basis of food systems, it is no surprise that soil health is critical for healthy food production.



WSD

- World Soil Day (WSD) 2022, annually observed on December 5, aligns with this. WSD 2022, with its guiding theme, **'Soils: Where food begins',** is a means to raise awareness on the importance of maintaining healthy soils, ecosystems and human well-being by addressing the growing challenges in soil management, encouraging societies to improve soil health, and advocating the sustainable management of soil.

Soil Degradation and its consequences

- Today, nutrient loss and pollution significantly threaten soils, and thereby undermine nutrition and food security globally. The main drivers contributing to soil degradation are industrial activities, **mining, waste treatment, agriculture, fossil fuel extraction and processing and transport emissions**.
- The reasons behind soil nutrient loss range from soil erosion, runoff, leaching and the burning of crop residues. Soil degradation in some form or another **affects around 29% of India's total land area.** This in turn **threatens agricultural productivity, in-situ biodiversity conservation, water quality and the socio-economic well-being of land dependent communities.**
- **Nearly 3.7 million hectares suffer from nutrient loss in soil (depletion of soil organic matter, or SOM)**. Further, **excessive use of fertilizers and pesticides,** and irrigation with contaminated wastewater are also polluting soils. Impacts of soil degradation are far reaching and can have irreparable consequences on human and ecosystem health.

India's conservation strategy

- The Government of India is implementing a **multi-pronged strategy for soil conservation.** This includes making soil chemical-free, saving soil biodiversity, enhancing SOM, maintaining soil moisture, mitigating soil degradation and preventing soil erosion.

Soil Health Card (SHC) scheme

- Earlier, farmers lacked information relating to soil type, soil deficiency and soil moisture content. To address these issues, the Government of India launched the **Soil Health Card (SHC) scheme in 2015.** The SHC is used to assess the current status of soil health, and when used over time, to determine changes in soil health. The SHC displays soil health indicators and associated descriptive terms, which guide farmers to make necessary soil amendments.

Pradhan MantriKrishiSinchayeeYojana,

- **Pradhan MantriKrishiSinchayeeYojana,** to prevent soil erosion, regeneration of natural vegetation, rainwater harvesting and recharging of the groundwater table.

National Mission for Sustainable Agriculture (NMSA)

- In addition, the **National Mission for Sustainable Agriculture (NMSA)** has schemes promoting traditional indigenous practices such as organic farming and natural farming, thereby reducing dependency on chemicals and other agri-inputs, and decreasing the monetary burden on smallholder farmers.

FAO forecasting tools

- The Food and Agriculture Organization of the United Nations (FAO) undertakes multiple activities to support the Government of India's efforts in soil conservation towards fostering sustainable agrifood systems. The FAO is collaborating with the National Rainfed Area Authority and the Ministry of Agriculture and Farmers' Welfare (MoA&FW) to develop **forecasting tools using data analytics that will aid vulnerable farmers in making informed decisions on crop choices, particularly in rainfed areas.**

ZBNF

- Restoring soil fertility by regenerating organic content and microorganism is one of the key components of the whole land restoration exercises. India's current pitch for fertilizers/pesticides-free **'zero budget natural farming' (ZBNF) is also part of this massive exercise.**
- The ZBNF guides the farmers towards sustainable farming practices. It helps in not only retaining soil fertility but also ensuring low cost of production (zero cost) and thereby enhancing the farmers' income.

Integrated Watershed Management Programme

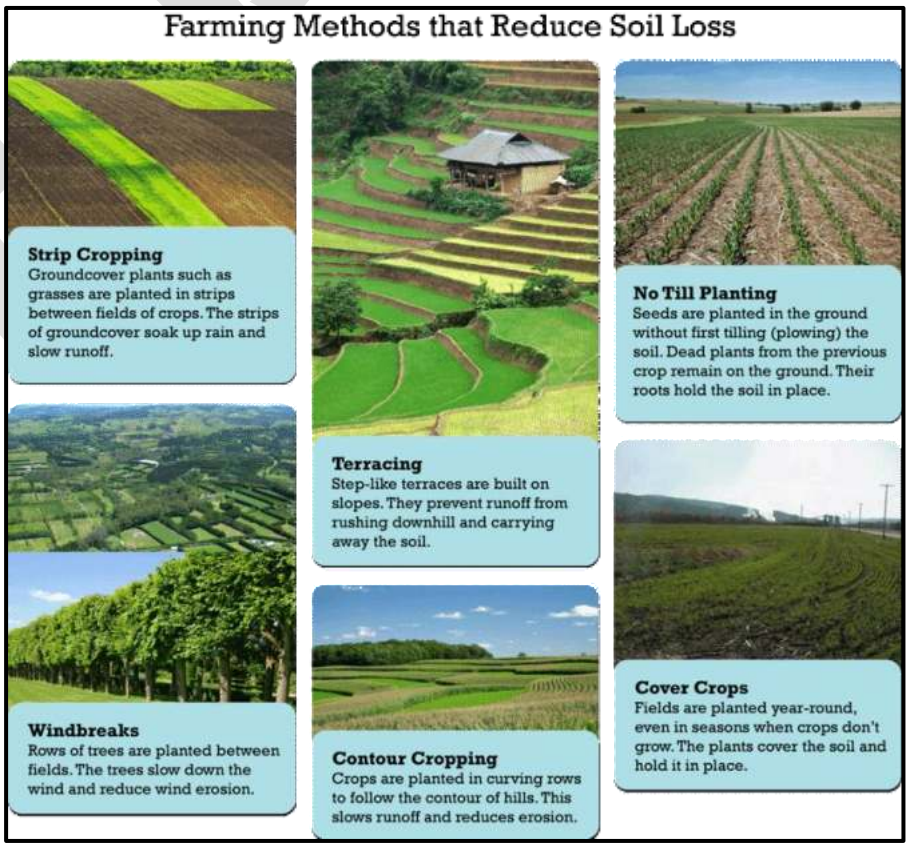
- Integrated Watershed Management Programme (IWMP) is implemented by Department of Land Resources of Ministry of Rural Development. The main objective of IWMP is to restore ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water.

National Afforestation Programme (NAP)

- Launched in 2000, the overall objective of the **National Afforestation Programme (NAP)** scheme is ecological restoration of degraded forests and to develop the forest resources with peoples' participation, with focus on improvement in livelihoods of the forest-fringe communities, especially the poor.

Way Ahead

- There is a need to strengthen communication channels between academia, policymakers and society for the identification, management and restoration of degraded soils, as well as in the adoption of anticipatory measures.
- These will facilitate the dissemination of timely and evidence-based information to all relevant stakeholders.
- Greater cooperation and partnerships are central to ensure the availability of knowledge, sharing of successful practices, and universal access to clean and sustainable technologies, leaving no one behind.
    - **Prevent overgrazing.** Frequently move animals from field to field. This gives the grass a chance to recover.
    - **Avoid logging steep hillsides.** Cut only a few trees in any given place. Plant new trees to replace those that are cut down.
    - **Reclaim mine lands.** Save the stripped topsoil and return it to the land. Once the soil is in place, plant trees and other plants to protect the bare soil.
    - **Use barriers to prevent runoff and soil erosion** at construction sites. **Plant grass** to hold the soil in place.
    - **Develop paving materials** that absorb water and reduce runoff.
    - **Buffer Strips:** These are trees and bushes on the banks of water bodies to prevent sediment, water wash offs. Their roots fix the soil to avoid slumping and erosion, canopies protect from excessive sunlight to water inhabitants and falling leaves are a source of organic matter and food of minor aquatic animals.



- As consumers and citizens, we can contribute by **planting trees to protect topsoil, developing and maintaining home/kitchen gardens, and consuming foods that are mainly locally sourced and seasonal.**

GI TAG

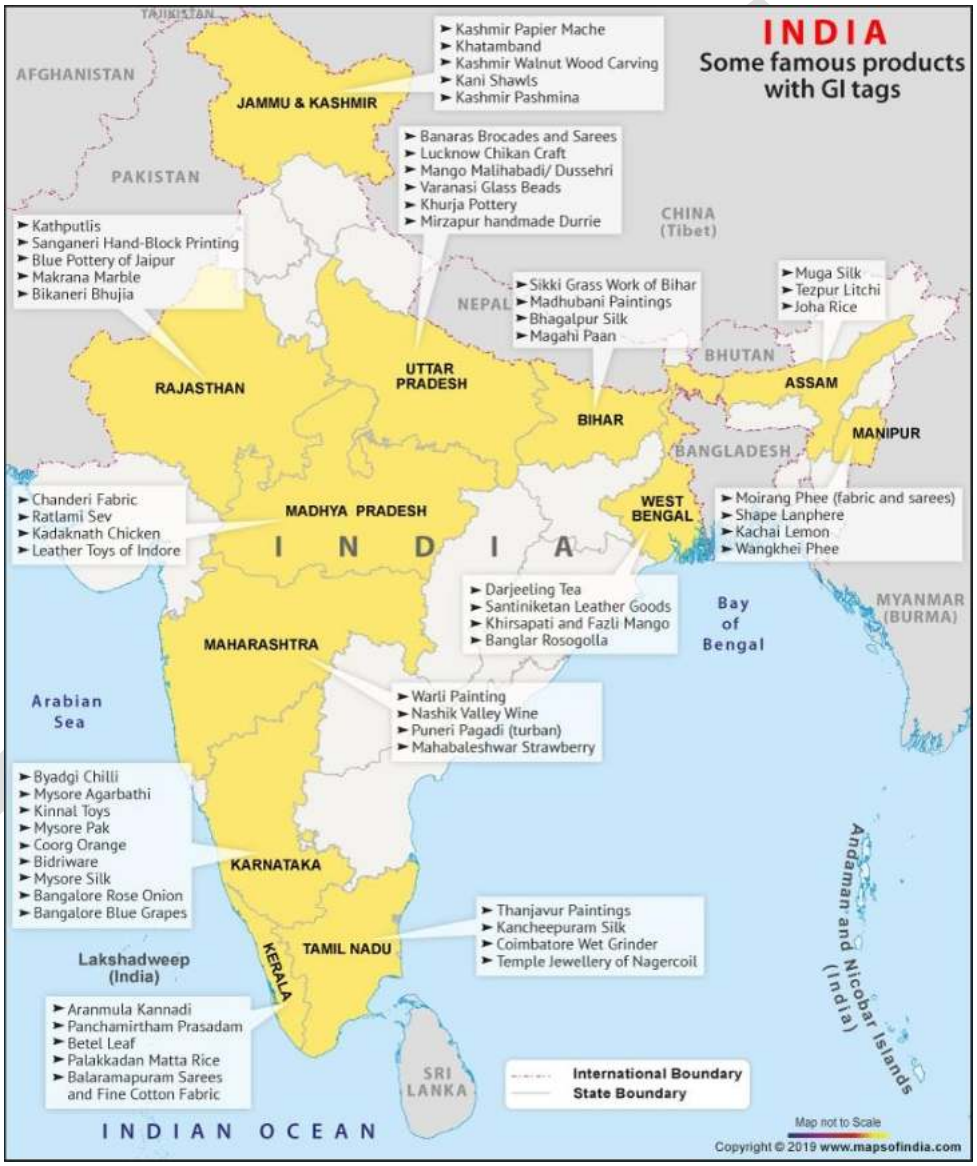
GS-III AGRICULTURE

Context

- The Union government has granted the Geographical Indication (GI) tag to 9 products from across the country.
- With this, the total number of GI Tags in India comes to **432.**

GI Tag

- A geographical indication or GI is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.
- Geographical Indications are part of the intellectual property rights that come **under the Paris Convention for the Protection of Industrial Property.**
- In India, Geographical Indications registration is administered by the **Geographical Indications of Goods (Registration and Protection) Act of 1999.**
- This tag **is valid for a period of 10 years** following which it can be renewed.
- GI tags are **covered under World Trade Organization.**
- Geographical indications are typically used for agricultural products, foodstuffs, wine and spirit drinks, handicrafts, and industrial products.
- It is basically an assurance that the product is coming from that specific area. It's a kind of trademark in the international market.
- The top 5 states holding the maximum number of GIs are **Karnataka, Tamil Nadu, Uttar Pradesh, Karnataka and Kerala.**



Benefits of registration of Geographical Indications

- It confers legal protection to Geographical Indications in India
- Prevents unauthorized use of a Registered Geographical Indication by others
- It provides legal protection to Indian Geographical Indications which in turn boosts exports.
- It promotes the economic prosperity of producers of goods produced in a geographical territory.

Nine Products that have got the GI Tag recently

Assamese Gamocha

- Gamocha is **a handwoven rectangular piece of cloth with red border in different designs and motifs** often offered to elders and guests as a mark of respect and honour by Assamese people.

Alibag White Onion (Maharashtra)

- The soil of Alibaug taluka, has **low sulphur content**. Alibag White Onion has low pungency, sweet taste, 'no tear' factor, low pyruvic acid, high protein, fat and fibre content, besides high antioxidant compounds (quercetin).

Tandur red gram (Telangana)

- Tandur red gram is a local variety of pigeon pea which is mainly grown in the rainfed tract of the Tandur and the nearby region of Telangana.
- The **fertile deep black soil** with huge deposits of Attapulgite clay mineral specifically in the Tandur region along with huge limestone deposits can be attributed to the specific quality traits of Tandur red gram. It **contains about 22-24% protein,** which is almost **three times that of the protein content in cereals.**

RaksteyKarpo apricots (Ladakh)

- **RaksteyKarpo apricots have a white seed coat which is not reported from anywhere else in the world except Ladakh.** It is most preferred by consumers for fresh consumption. Also, RaksteyKarpo **contains significantly higher sorbitol than fruits with a brown coat.**

AttappadyAttukombuAvara (Kerala)

- AttappadyAttukombuAvara, cultivated in the Attappady region of Palakkad, is **curved like a goat's horn.** Its **higher anthocyanin content** compared to other dolichos beans imparts violet colour in the stem and fruits.
- Anthocyanin is helpful against cardiovascular diseases along with its antidiabetic properties. Other than this, calcium, protein, and fibre content are also high. The higher phenolic content of AttappadyAttukombuAvara imparts resistance against pest and diseases, making the crop suitable for organic cultivation.

AttappadyThuvara(Kerala)

- It is having seeds with white coat. Compared to other red grams, AttappadyThuvara seeds are bigger and have higher seed weight. This delicious red gram, which is used as vegetable and dal, is rich in protein, carbohydrate, fibre, calcium and magnesium.

Kanthalloor-Vattavada Garlic (Kerala)

- It contains **higher amount of sulphides**, flavonoids, and proteins. It is rich in allicin, which is effective against microbial infections, blood sugar, cancer, cholesterol, heart diseases, and damages to blood vessels. The garlic cultivated in this area is also rich in essential oil.

OnattukaraEllu (Kerala)

- OnattukaraEllu and its oil are famous for its unique health benefits. Relatively higher antioxidant content in OnattukaraEllu helps in fighting the free radicals, which destroy the body cells. Also, the high content of unsaturated fat makes it beneficial for heart patients.

KodungalloorPottuvellari (Kerala)

- KodungalloorPottuvellari cultivated in Kodungalloor and parts of Ernakulam is consumed as juice and in other forms. This snap melon, which is harvested in summer, is excellent for quenching thirst. It contains a high amount of Vitamin C.
- Compared to other cucurbits, nutrients such as calcium, magnesium, fibre, and fat content are also high in KodungalloorPottuvellari.

Must Read: *https://www.iasgyan.in/blogs/complete-list-of-geographical-indications-gi-tags-in-india-as-of-2021*

GLYPHOSATE

GS-III AGRICULTURE

Context

- The government has not banned the sale, distribution and use of Glyphosate or any other pesticide that contain glyphosate. This information was given by the Union Minister of Agriculture & Farmers Welfare, in Rajya Sabha.

Glyphosate

- Glyphosate is a widely used **herbicide that controls broadleaf weeds and grasses.** Glyphosate works by blocking an enzyme essential for plant growth. The product is **used primarily in agriculture, but also in forestry and lawn and garden care**.

Concern

- Glyphosate health hazards for humans and animals. Some **35 countries have banned or restricted the use of glyphosate**. These include Sri Lanka, Netherlands, France, Colombia, Canada, Israel, and Argentina.
- Health impacts of glyphosate range from **cancer, and reproductive and developmental toxicity to neurotoxicity and immunotoxicity**. Symptoms include **irritation, swelling, burning of the skin, oral and nasal discomfort, unpleasant taste and blurred vision**.

Approval in India

- In India, glyphosate has been **approved for use only in tea plantations and non-plantation areas** accompanying the tea crop.

- Use of the substance anywhere else is illegal.

Illegal Usage

- A 2020 study by PAN India on the state of glyphosate use in the country had worrying findings. Field studies were conducted in Andhra Pradesh, Himachal Pradesh, Jharkhand, Karnataka, Tamilnadu, Telangana and West Bengal.
- Glyphosate was being used in more than 20 crop fields. The majority of those using the weedicide were not trained for doing so and did not have the appropriate safety precautions.

Consequence

- The rampant use of glyphosate in non-designated areas has severe consequences. Use of all weedicides including glyphosate is **destroying uncultivated food resources and thereby destroying indigenous nutrition habits as well**, making rural people and agricultural communities deprived of adequate nutrition, in addition to polluting ecosystems.

Government's Recent Notification

- The Government has issued a **notice restricting the use of glyphosate.**
- The new notification mandates that existing registration certification be put through a further process. Failure to do so will result in appropriate action being taken under the **Insecticides Act of 1968.**

Wrapping up

- The government needs to come forward to ban glyphosate urgently.
- The government's current move, to restrict the use of glyphosate, may not necessarily work as the **presence of pest control operators is "almost non-existent" on the ground**- PAN India Report.
- Allowing continued use of glyphosate in India will contribute to the widespread use of illegal herbicide-tolerant crops. This will endanger the agroecological nature of Indian farms, apart from spreading the toxic effects to people, animals and the environment.
- A **blanket ban on Glyphosate and its strict implementation is the way forward.**

REGENERATIVE AGRICULTURE / CSJM AGRICULTURE

Context

- The current intensive agriculture system has led to soil degradation and constant losses. There may not be enough soil to feed the world in next 50 years, according to international scientists.
- Regenerative agriculture has recently received much attention from all stakeholders, including producers, policymakers, scientists and consumers.

Regenerative agriculture

- **Regenerative agriculture** is a conservation and rehabilitation approach to food and farming systems. It focuses on topsoil regeneration, increasing biodiversity, improving the water cycle, enhancing ecosystem services, supporting biosequestration, increasing resilience to climate change, and strengthening the health and vitality of farm soil.
- Reducing the use of chemical fertilisers and pesticides, reducing tillage, integrating livestock and using cover crops are the common threads used to define regenerative agriculture.
- **Regenerative agriculture adheres to the following principles:**
  - Minimise soil distribution through conservation tillage
  - Diversify crops to replenish nutrients and disrupt pest and disease lifecycles
  - Retain soil cover using cover crops
  - Integrate livestock, which adds manure to the soil and serves as a source of carbon sinks.
- Permanent pastures can trap large amounts of carbon and water, reducing farm emissions and polluted runoff. Healthy soil protects land from floods and drought and provides crops with higher nutrient density.

Regenerative agriculture can be practised under many names and is often also referred to as – agroecological farming, alternative agriculture, biodynamic agriculture, carbon farming, inclusive nature farming, conservation agriculture, green agriculture, organic regenerative agriculture and sustainable agriculture.

Importance of Regenerative Agriculture

- Overall, regenerative agriculture improves the ecosystem's health, beginning with soil fertility, through a holistic systems approach that includes the health of the animals, farmers and community. It builds resilience and mitigates the effects of extreme weather caused by a changing climate.

- The importance of regenerative agriculture was also emphasized in the Intergovernmental Panel on Climate Change (IPCC) report on "Climate Change and Land." The report listed it as a 'sustainable land management practice' focused on ecological functions that "can be effective in building resilience of agroecosystems."
- Regenerative Agriculture works on the premise that healthy soils are the foundation of regenerative agriculture, which in turn enables the symbiotic relationship between plants and soil microorganisms living in the soil.
- Plants, through photosynthesis, provide liquid carbon that feeds the soil microbes. And microbes provide plants with nutrients like potassium, iron, calcium, and others that help them grow and stay healthy, ultimately providing nutrient-rich food for animals and humans. Thus, it's imperative to support and upscale regenerative agriculture.

CHATGPT
GS-III SCIENCE & TECHNOLOGY

Context
- Open AI's ChatGPT, the artificial intelligence-powered chatbot that has gone viral, has crossed one million users in less than a week since it was officially made available to the public.

What is ChatGPT?
- ChatGPT is a natural language processing tool driven by AI technology that allows one to have human-like conversations and much more with a chatbot.
- The language model can answer questions, assist with tasks such as composing emails, essays and code. Usage is currently open to public free of charge because ChatGPT is in its research and feedback-collection phase.
- Basically, ChatGPT is a conversational dialogue model, a chatting robot, trained by artificial intelligence (AI) and machine learning. It understands and responds to natural human language and answers questions, and talks like you were to talk to humans.
- It gets its name from **GPT or Generative Pre-Trained Transformer.** It is **a deep-learning language model** that specializes in generating human-like written text. Deep Learning which is a machine learning method with three or more layers of a neural network attempts to simulate the behavior of a human brain, which then allows it to learn like humans.

Who made ChatGPT?
- ChatGPT was created by OpenAI, an AI and research company. The company launched ChatGPT on November 30, 2022. If the name of the company seems familiar, it is because OpenAI is also responsible for creating DALLE•2, a popular AI art generator, and Whisper, an automatic speech recognition system.

How is ChatGPT different than any other AI models that are already available?
- Well, it's different because ChatGPT will remember your earlier conversations for context, it will even admit its mistakes, challenge premises, and sometimes even decline to answer.

How does ChatGPT work?
- A user can start by going to OpenAI's website, click on the Try ChatGPT button, and start using.
- OpenAI has trained ChatGPT using a training method known as Reinforcement Learning from Human Feedback OR RLHF. It uses a reward AND punishment system to train AI. So, whenever it takes an action, it is classified into two categories - desirable or punishable. The desired action is rewarded whereas an undesired one is punished. With this trial-and-error method, AI then learns what works and what wouldn't.
- OpenAI has also used humans as trainers of this AI. It is through conversations that these trainers played both the roles of a user and of an AI assistant. But this training method can be a bit problematic, as it can often mislead the model.
- An ideal answer would depend on what the model knows, rather than what the human demonstrator knows.. and this could be a limitation to this exciting new thing on the internet.
- So, if a user asks a complex question or does not phrase the question well, then the bot can decline to answer. It will also decline to answer if it's not an appropriate question.

For now, ChatGPT is free to use for the research period only.

SURFACE WATER AND OCEAN TOPOGRAPHY MISSION
GS-III SCIENCE & TECHNOLOGY

Context
- Recently, a NASA-led satellite was launched using Falcon 9 rocket as a part of - Surface Water and Ocean Topography Mission.

SWOT Mission
About:
- The **Surface Water and Ocean Topography** (**SWOT**) mission is a satellite altimeter jointly developed and operated by NASA and CNES, the French space agency, in partnership with the Canadian Space Agency (CSA) and UK Space Agency (UKSA).

An altimeter is **a device that measures altitude, the distance of a point above sea level**. Altimeters are important navigation instruments for aircraft and spacecraft pilots who monitor their height above Earth's surface.

- The SWOT incorporates **advanced microwave radar technology** that will collect height-surface measurements of oceans, lakes, reservoirs and rivers in high-definition detail over 90% of the globe.
- The primary instrument on SWOT is the **Ka-band Radar Interferometer** (**KaRIn**), which uses synthetic-aperture radar (SAR) technology.
- The satellite **will overfly Earth from 78° S to 78° N, covering at least 86% of the globe.**

A synthetic aperture radar (SAR) is an active sensor that first transmits microwave signals and then receives back the signals that are returned, or back-scattered, from the Earth's surface. The instrument measures the distance between the sensor and the point on the Earth's surface where the signal is backscattered.

Aim

- The objectives of the mission are to make the first global survey of the Earth's surface water, to observe the fine details of the ocean surface topography, and to measure how terrestrial surface water bodies change over time.

Working

- SWOT will provide the first truly global observations of changing water levels, stream slopes, and inundation extents in rivers, lakes, and floodplains.
- SWOT will observe ocean circulation at unprecedented scales of 15–25 km an order of magnitude finer than current satellites.
- One major thrust of the mission is to explore how oceans absorb atmospheric heat and carbon dioxide in a natural process that moderates global temperatures and climate change.
- Because it uses **wide-swath altimetry technology**, SWOT will almost completely observe the world's oceans and freshwater bodies with repeated high-resolution elevation measurements, allowing observations of variations.

Significance

- **Management of water sharing issues**
  - The sharing of river water often causes friction between neighboring states, especially when there is no common technology for verification. SWOT will provide global information as input for systems monitoring transboundary river basins, including measurements of variations in reservoir water storage and estimates of river discharge.
- **More accurate weather and climate forecasting**
  - SWOT will enable more accurate weather and climate forecasting, especially seasonally. The quality of weather and climate forecasting largely depends on numerical modeling that uses the state of the ocean surface and the hydrological conditions of catchment areas.
- **Managing freshwater for urban, industrial and agricultural consumption**
  - Accurate knowledge of sources of available water is a key factor in decision-making for organizations involved in the distribution of water for agricultural, urban and industrial needs.
  - Data from SWOT will contribute at a global level by providing water supply services and distribution companies with information about major reservoirs & the largest rivers and catchment areas, thus enabling them to plan the management of water stocks further into the future.
- **Improved flood modeling**
  - Flooding, whether from rivers overflowing their banks or in coastal regions, is among the costliest natural disasters. Altimetry data from the SWOT mission will make it possible to measure the 3-dimensional shape of flood waves, track floodwater levels, and improve measurements of local topographic details in floodplains. All of these will improve prediction capabilities for future floods.
- **Coastal ocean dynamics**
  - Coastal ocean dynamics are important for many societal applications. They have smaller spatial and temporal scales than the dynamics of the open ocean and require finer-scale monitoring. SWOT will provide global, high-resolution observations in coastal regions for observing coastal currents and storm surges. While SWOT is not designed to monitor the fast temporal changes of the coastal processes, the swath coverage will allow us to characterize the spatial structure of their dynamics when they occur within the swath.
- **Reducing environmental risk and contributing to public policy-making**
  - More generally, SWOT will help improve our knowledge of Earth's water cycle and ocean circulation, enhance our observation capacity by collecting unique data on water storage and fluxes and making them freely available, and help us better understand the physics that drives surface water and ocean dynamics.
  - Water resources, natural risks (floods, climate change, hurricane forecasting, etc.), biodiversity, health (preventing the propagation of water-borne diseases), the agricultural sector, energy (including the management of electricity production and offshore gas and oil rigs), territorial development; all these areas and more stand to benefit from this new satellite mission.

Context

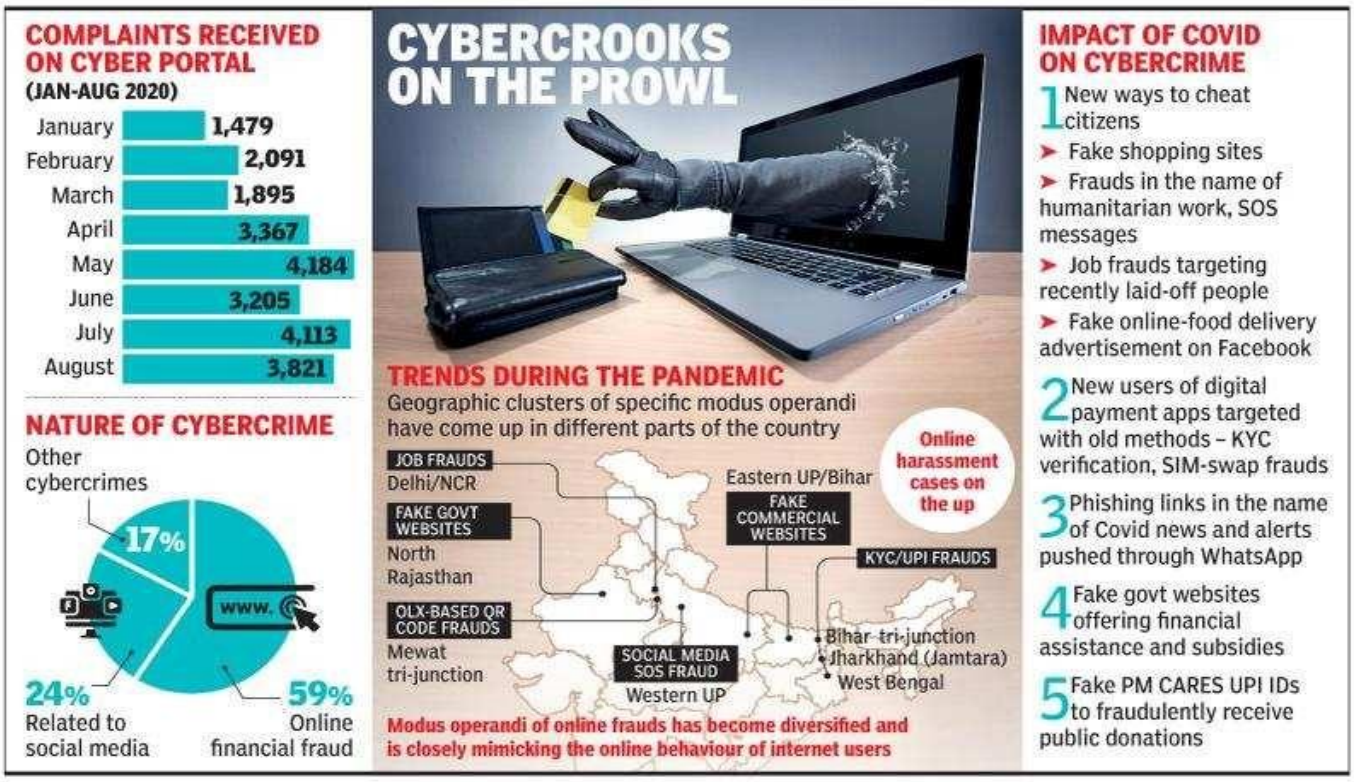
- The National Security Council Secretariat (NSCS) has formulated a draft National Cyber Security Strategy. The Strategy holistically looks at addressing the issue of security of national cyberspace. '

Details

- Minister of Electronics and Information Technology AshwiniVaishnaw said in Lok Sabha that the NSCS had formulated a draft strategy. However, the timeline for its implementation and other details were not mentioned.

Why does India need a cybersecurity strategy?

- As per American cybersecurity firm Palo Alto Networks' 2021 report, **Maharashtra was the most targeted state in India — facing 42% of all ransomware attacks**.
- The report stated that **India is among the more economically profitable regions for hacker groups** and hence these hackers ask Indian firms to pay a ransom, usually using cryptocurrencies, in order to regain access to the data.
- **One in four Indian organisations suffered a ransomware attack in 2021 — higher than the global average of 21%.**
- Software and services (26%), capital goods (14%) and the public sector (9%) were among the most targeted sectors. An increase in such attacks has brought to light the urgent need for strengthening India's cybersecurity.



National Cyber Security Strategy by DSCI

- It was conceptualised by the Data Security Council of India (DSCI), headed by Lt **General Rajesh Pant** report that focuses on 21 areas **to ensure a safe, secure, trusted, resilient, and vibrant cyberspace for India.**

The main sectors of focus of the report are:

- **Large scale digitisation of public services** that focus on security in the early stages of design in all digitisation initiatives, developing institutional capability for assessment, evaluation, certification, and rating of the core devices and timely reporting of vulnerabilities and incidents.
- **Supply chain security**: Monitoring and mapping of the supply chain of the Integrated circuits (ICT) and electronics products, scaling up product testing and certification.
- **Critical information infrastructure protection**: Integrating Supervisory control and data acquisition (SCADA) security with enterprise security, monitoring digitisation of devices, evaluating security devices, maintaining a repository of vulnerabilities
- **Digital payments**: Mapping and modeling of devices and platform deployed, supply chain, transacting entities, payment flows, interfaces and data exchange, timely disclosure of vulnerabilities

- **State-level cyber security**: Developing state-level cybersecurity policies, allocation of dedicated funds, critical scrutiny of digitization plans, guidelines for security architecture, operations, and governance
- **Security of small and medium businesses**: Policy intervention in cybersecurity granting incentives for higher level of cybersecurity preparedness, developing security standards, frameworks, and architectures for the adoption of Internet of Things (IoT) and industrialisation

Steps Recommended by Data Security Council of India (DSCI)

- **Budgetary provisions:** A minimum allocation of 0.25% of the annual budget, which can be raised upto 1% has been recommended to be set aside for cyber security. Setting up a **Fund of Funds for cybersecurity** and provide Central funding to States to build capabilities in the same field.
- **Research, innovation, skill-building and technology development:** The report suggests investing in modernisation and digitisation of Integrated Circuits (ICT), set up a short and long term agenda for cyber security via outcome-based programs and provide investments deep-tech cyber security innovation.
- **A national framework** should be set in collaboration with institutions like National Skill Development Corporation (NSDC) and ISEA (Information Security Education and Awareness) to provide global professional certifications in security.
- **Crisis management**: For adequate preparation to handle crisis, holding cybersecurity drills which include real-life scenarios with their ramifications. To identify possible weakness and exploitations in systems, DSCI recommend sharing of threat information between government departments.
- **Cyber insurance**: To address cybersecurity risks in business and technology scenarios as well as calculate threat exposures DSCI recommends developing cyber insurance products for critical information infrastructure and quantify the risks involving them.
- **Cyber diplomacy:** Cyber diplomacy plays a huge role in shaping India's global relations. Hence cyber security preparedness of key regional blocks like BIMSTEC and SCO must be ensured via programs, exchanges and industrial support.
- **Cybercrime investigation**: With the increase in cybercrime across the world, the report recommends unburdening the judicial system by creating laws to resolve spamming and fake news.
- DSCI suggests **advanced forensic training for agencies** to keep up in the age of AI/ML, Blockchain, IoT, Cloud, Automation. The report also suggests creating a special cadre of Cybercrime investigators.

National Security Council (NSC)

The **National Security Council** (**NSC**) of India is an executive government agency tasked with advising the Prime Minister's Office on matters of national security and strategic interest. It was established by the former Prime Minister of India Atal Bihari Vajpayee in 1998, with Brajesh Mishra as the first National Security Advisor. The NSC is the apex body of the three-tiered structure of the national security management system in India. The three tiers are the Strategic Policy Group, the National Security Advisory Board and a secretariat from the Joint Intelligence Committee.

Besides the National Security Advisor (NSA), Chief of Defence Staff (CDS), the Deputy National Security Advisors, the Ministers of Defence, External Affairs, Home, Finance of the Government of India, and the Vice Chairman of the NITI Aayog are members of the National Security Council. PM can chair the meeting of NSC. Other members may be invited to attend its monthly meetings, as and when it is required.

Data Security Council of India (DSCI)

Data Security Council of India (DSCI) is a premier industry body on data protection in India, setup by NASSCOM®, committed to making cyberspace safe, secure and trusted by establishing best practices, standards and initiatives in cyber security and privacy. DSCI engages with governments, regulators, industry associations and think tanks on policy matters. To strengthen thought leadership in cyber security and privacy, DSCI develops best practices and frameworks, publishes studies, surveys and papers.

NAVIGATION WITH THE INDIAN CONSTELLATION (NAVIC) / GS-III SCIENCE & TECHNOLOGY

Context

- To promote the use of 'NAVigation with the Indian Constellation' (NavIC), the Indian version of GPS, the Indian Space Research Organisation (ISRO) will introduce the L1 frequency in all its future satellites.

Details

- The seven satellites in the NavIC constellation so far use two frequencies for providing positioning data — the L5 and S bands. The new satellites NVS-01 onwards, meant to replace these satellites, will also have L1 frequency.
- The L1 is the oldest and most established GPS signals, which even the less sophisticated, civilian-use devices such as smartwatches are capable of receiving. Thus, with this band, the use of NavIC in civilian-use gadgets can go up.

NaviC

- NavIC (Navigation with Indian Constellation) is an **autonomous regional satellite navigation system** established and maintained by ISRO.

Coverage

- It covers India and a region extending up to **1,500 km beyond Indian mainland (primary coverage area) with plans of extension.**
- An extended service area lies between the primary service area and a rectangle area enclosed by the 30th parallel south to the 50th parallel north and the 30th meridian east to the 130th meridian east.

Satellites

- The system currently consists of a **constellation of eight satellites**.
- Three satellites in constellation are located in **geostationary orbit (GEO)** and four in inclined **geosynchronous orbit (IGSO).**

Accuracy

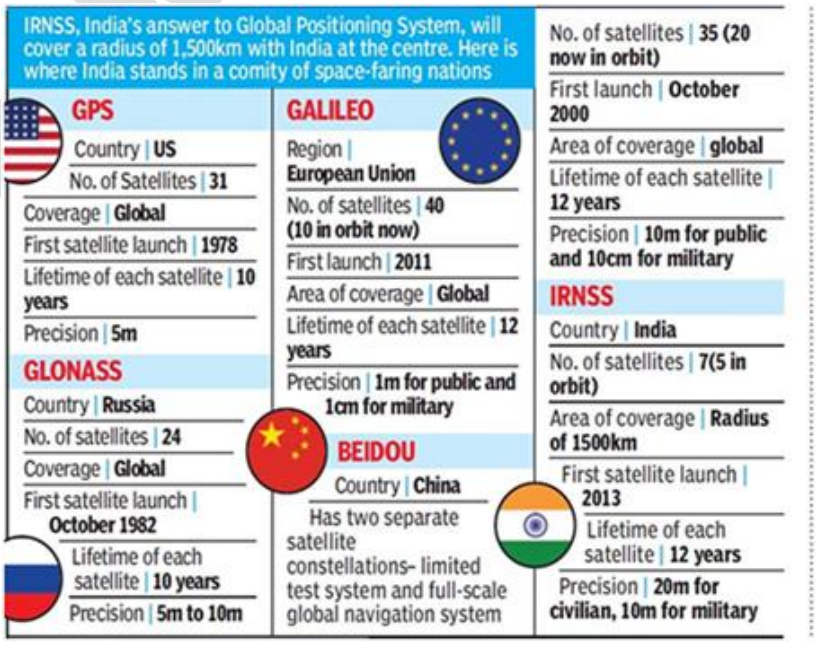
- The system is intended to provide an absolute position accuracy of better than 10 metres throughout Indian landmass and better than 20 metres in the Indian Ocean.
- In short, it provides position **accuracy better than 20 m and timing accuracy better than 50 nanoseconds (20).**

Applications

- NavIC will provide two levels of service, the **"standard positioning service",** which will be open for civilian use, and a **"restricted service"** (an encrypted one) for authorised users (including the military).
- NavIC based applications are being used in various **civilian sectors, including, transport, map applications, and timekeeping.**
- NavIC based trackers are **compulsory on commercial vehicles in India.**
- Today major mobile chipset manufacturers like Qualcomm, MediaTek and Broadcom already support NavIC across various chipset platforms.
- A few mobile handsets have been released which can be enabled to receive NavIC.

GPS VS NAVIC

- The GPS, has a position accuracy of 20–30 m.
- Unlike **GPS which is dependent only on L-band, NavIC has dual frequency (S and L band frequencies).**
- When low frequency signal travels through atmosphere, its velocity changes due to atmospheric disturbances.
- US banks on atmospheric model to assess frequency error and it has to update this model from time to time to assess the exact error.
- In India's case, the actual delay is assessed by measuring the difference in delay of dual frequency (S and L bands).
- Therefore, NavIC is not dependent on any model to find the frequency error and is more accurate than GPS.
- The main difference is the serviceable area covered by these systems. GPS caters to users across the globe and its satellites circle the earth twice a day, while NavIC is currently for use in India and adjacent areas.



- Like GPS, there are three more navigation systems that have global coverage - Galileo from the European Union, Russia-owned GLONASS and China's Beidou. QZSS, operated by Japan, is another regional navigation system covering Asia-Oceania region, with a focus on Japan.

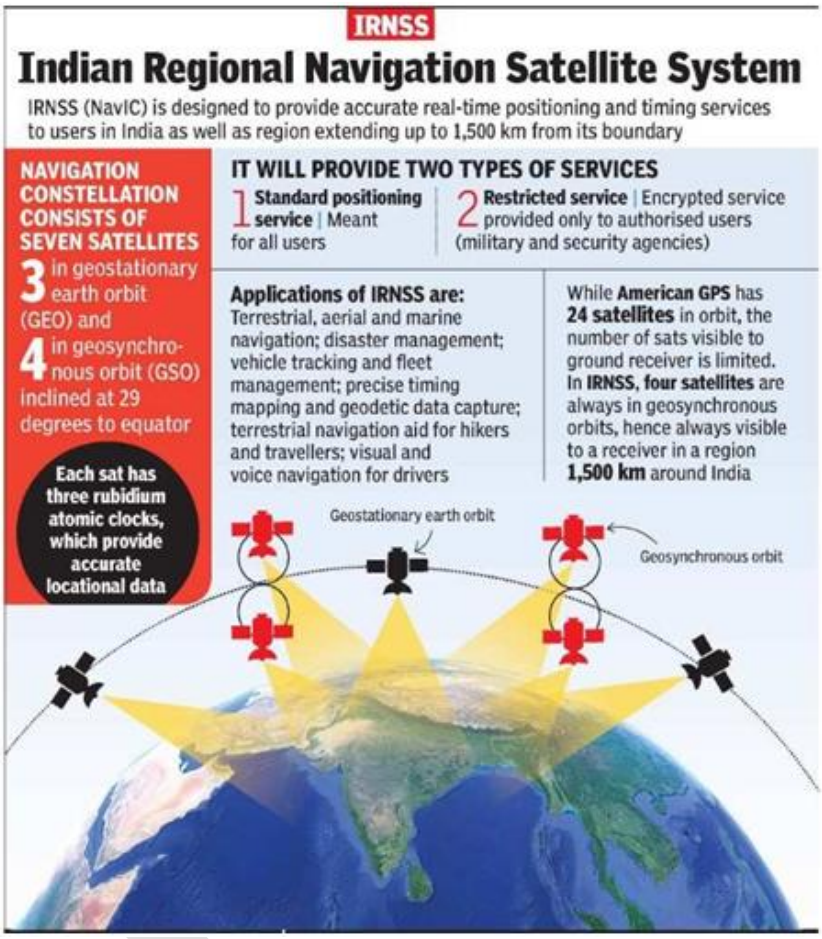
About Frequency Bands

L Band

- The L band is the Institute of Electrical and Electronics Engineers (IEEE) designation for the range of frequencies in the radio spectrum from 1 to 2 gigahertz (GHz).
- **Applications**
  - Mobile service
  - Satellite navigation

- Telecommunications use
- Aircraft surveillance
- Amateur radio
- Digital audio, Video, multimedia broadcasting
- Astronomy

- **Advantages of L Band Frequency over other frequency bands**:
  - This frequency band faces less interference from heavy rain fading
  - The low frequency range makes it easier to design and source components
  - The components for this band are less expensive than those for higher frequency bands



S band

- The S band is a designation by the Institute of Electrical and Electronics Engineers (IEEE) for a part of the microwave band of the electromagnetic spectrum covering frequencies from 2 to 4 gigahertz (GHz).
- **Applications**
  - The S band is used by airport surveillance **radar for air traffic control, weather radar, surface ship radar, and some communications satellites,** especially those used **by NASA to communicate with the Space Shuttle and the International Space Station.**
  - **The largest use of this band is by WiFi networks.**
  - The S band can also be used for issuing distress signals in accident situations and for delivering real-time data and status for traffic and weather conditions.
  - In some countries, S band is used for Direct-to-Home satellite television.
- IndoStar-1 was the world's first commercial communications satellite to use S-band frequencies for broadcast.
- **L1**
  - The L1 signal is the oldest GPS signal. It has two parts: the Coarse/Acquisition Code (C/A) and the Precision Code (P-code).
  - The P-code is reserved for military use, while the C/A is open to the public. The L1 signal uses the frequency 1575.42 MHz.
  - Since the L1 is the oldest and most established signal, even the cheapest GPS units are capable of receiving it. However, because its **frequency is relatively slow** it is not very effective at traveling through obstacles.

Where is NavIC being used right now?

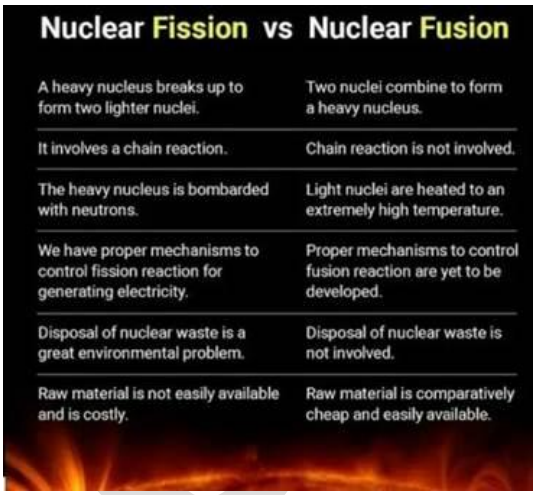
- NavIC is mainly being used in **public vehicle tracking, to provide emergency warning alerts to fishermen venturing into the deep sea, and for tracking data related to natural disasters.**
- The government is also pushing for its increased use in smartphones.

Significance of NaVIC

- Currently, NavIC's use is limited. It is being used in public vehicle tracking in India, for providing emergency warning alerts to fishermen venturing into the deep sea where there is no terrestrial network connectivity, and for tracking and providing information related to natural disasters. Enabling it in smartphones is the next step India is pushing for. NavIC is conceived with the aim of removing dependence on foreign satellite systems for navigation service requirements, **particularly for "strategic sectors."**

Context

- Scientists in the United States have, for the first time, **achieved a net gain in energy from a nuclear fusion reaction**, seen as a big step forward in the decades-old endeavour to master a technology that is considered the most dependable source of energy in future.

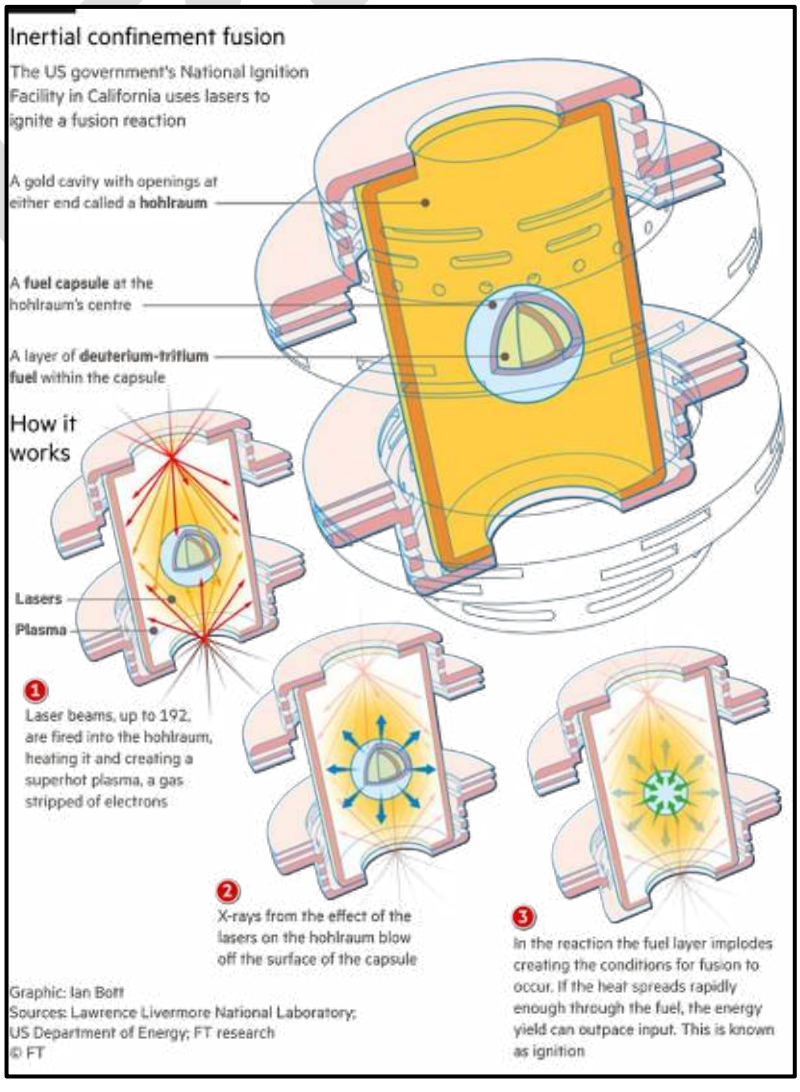


Nuclear Fusion

- Nuclear fusion is defined as the combining of several small nuclei into one large nucleus with the subsequent release of huge amounts of energy.
- The reaction happens when two light nuclei merge to form a single heavier nucleus. Because the total mass of that single nucleus is less than the mass of the two original nuclei, the leftover mass is energy that is released in the process.
- Nuclear fusion powers our sun and harnessing this fusion energy could provide an unlimited amount of renewable energy.
- In the case of the sun, its intense heat — millions of degrees Celsius — and the pressure exerted by its gravity allow atoms that would otherwise repel each other to fuse.
- Fusion reactions emit no carbon, produce no long-lived radioactive waste and a small cup of the hydrogen fuel could theoretically power a house for hundreds of years.

Net Energy Gain in Fusion Energy

- Physicists have since the 1950s sought to harness the fusion reaction that powers the sun, but no group had been able to produce more energy from the reaction than it consumes — a milestone known as net energy gain or target gain, which would help prove the process could provide a reliable, abundant alternative to fossil fuels and conventional nuclear energy.
- But now researchers at the Lawrence Livermore National Laboratory in California for the first time have produced more energy in a fusion reaction than was used to ignite it, something called net energy gain.
- The fusion reaction at the US government facility produced about 2.5 megajoules of energy, which was about 120 per cent of the 2.1 megajoules of energy in the lasers.

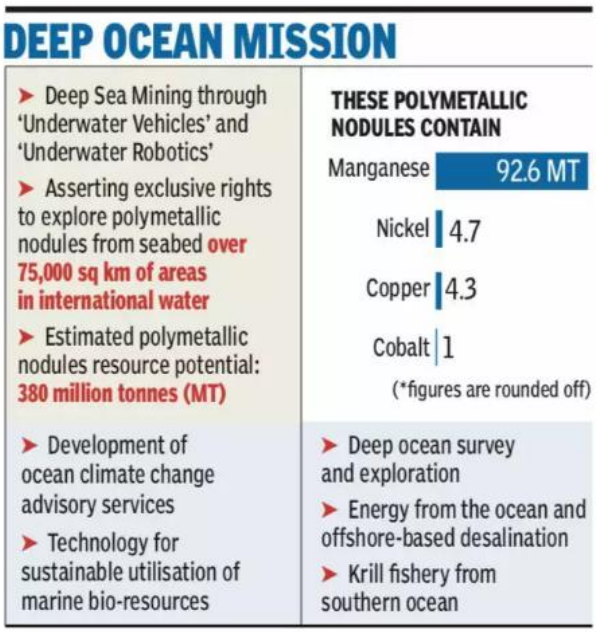


Significance

- The US breakthrough comes as the world wrestles with high energy prices and the need to rapidly move away from burning fossil fuels to stop average global temperatures reaching dangerous levels.
- The achievement **will pave the way for advancements in national defence and the future of clean power.**

Context

- The National Institute of Ocean Technology (NIOT), is in the process of developing **a manned submersible vehicle called 'Matsya 6000'.**
- It is part of the **programme 'Samudrayaan' under the Deep Ocean Mission.**



Background: About Deep Ocean Mission

- Deep Ocean mission is an initiative to undertake deep ocean exploration focused on India's exclusive economic zones and continental shelf. It is under the **Ministry of Earth Sciences (MoES).**

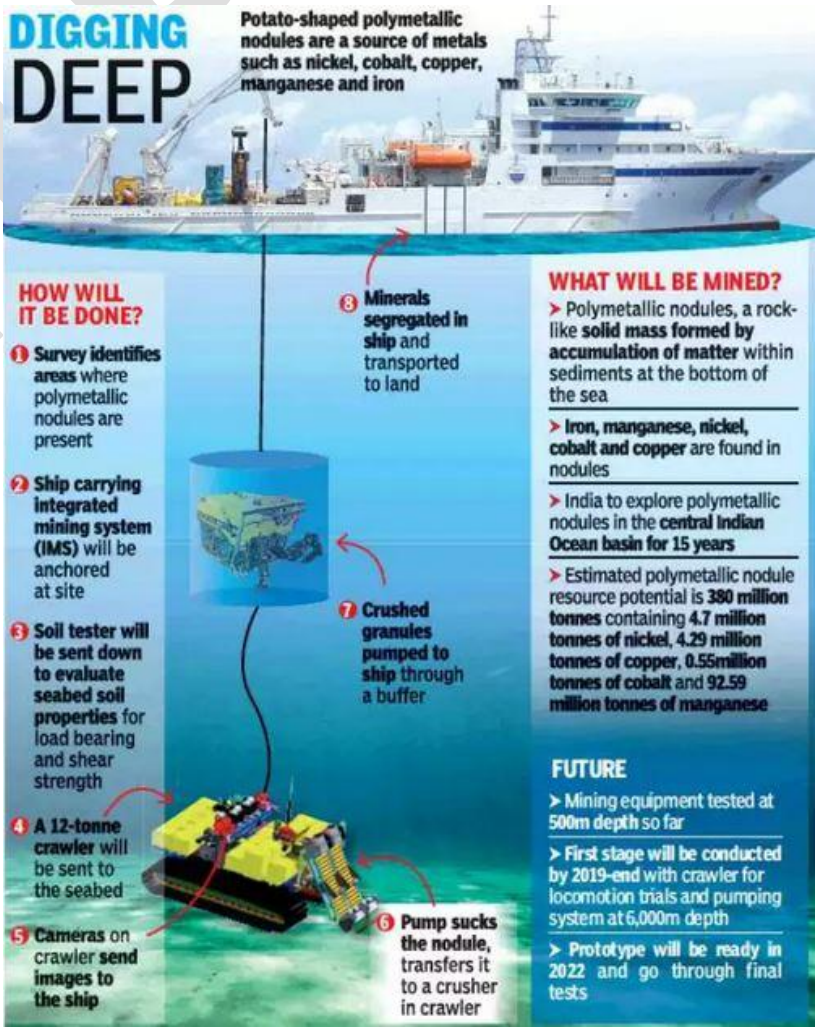
Objective

- It aims to search for deep-sea resources and minerals, flora and fauna, including microbes, and studying ways to sustainably utilise them.

Components

- There are six components to the programme.

1. **Development of Technologies for Deep Sea Mining, and Manned Submersibles:**
   - A manned submersible will be developed to carry three people to a depth of 6000 metres in the ocean with suite of scientific sensors and tools for mining Polymetallic Nodules.
2. **Development of Ocean Climate Change Advisory Services:**
   - It entails developing a suite of observations and models to understand and provide future projections of important climate variables on seasonal to decadal time scales.
3. **Technological innovations for exploration and conservation of deep-sea biodiversity**
   - Bio-prospecting of deep-sea flora and fauna including microbes and studies on sustainable utilization of deep-sea bio-resources will be the main focus.
   - This component will support the Blue Economy priority area of Marine Fisheries and allied services.
4. **Deep Ocean Survey and Exploration**
   - To explore and identify potential sources of hydrothermal minerals that are sources of precious metals formed from the earth's crust along the Indian Ocean mid-oceanic ridges.
5. **Energy and freshwater from the Ocean**
   - Involves studying and preparing detailed engineering design for offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plants.
6. **Advanced Marine Station for Ocean Biology**
   - Aimed at development of human capacity and enterprise in ocean biology and engineering.



Importance

- India's Exclusive Economic Zone spreads over 2.2 million square kilometres.
- India has been allotted a site of 75,000 square kilometres in the Central Indian Ocean Basin (CIOB) by the **UN International Sea Bed Authority** for the exploitation of polymetallic nodules (PMN). These are rocks scattered on the seabed containing iron, manganese, nickel and cobalt. 380 million metric tonnes of polymetallic nodules are available at the bottom of the seas in the Central Indian Ocean.
- A fraction of that reserve can meet the energy requirement of India for the next 100 years.

Samudrayaan Project under the Deep Ocean Mission

- Under the Deep Ocean Mission, The Samudrayaan Project's manned submersible vehicle MATSYA 6000 will help conduct deep-ocean exploration for resources such as gas hydrates, polymetallic manganese nodules, hydro-thermal sulphides, and cobalt crusts, which are found at depths of 1000 to 5500 metres.
- Matsya 6000, will be **capable of taking three humans to a depth of 6 km**.
- The manned submersible **facilitates the direct observation by human in the deep ocean** in **exploring mineral resources** rich in Nickel, Cobalt, rare earth, manganese and other resources which can be used for scientific analysis.
- MATSAY-6000 vehicle, **has an endurance of 12 hours in case of emergency for human safety.**

Significance

- The mission will give a boost to the government's effort of making positive changes in the 'Blue Economy' as one of the ten core dimensions of growth.
- Mission 'Samundrayaan' **has immediate spin-offs in the form of underwater engineering innovations in asset inspection, tourism and promotion of ocean literacy**.

GREEN METHANOL / GS-III SCIENCE & TECHNOLOGY

Context

- National Thermal Power Corporation has signed a Memorandum of Understanding (MOU) with Tecnimont, the Indian Subsidiary of MaireTecnimont Group, Italy. The partners will jointly evaluate and explore the possibility to develop a commercial-scale Green Methanol Production facility in India.

Methanol

- **Methanol (CH_3OH), also known as methyl alcohol,** is a chemical compound in great demand due to its **many industrial applications:** as a solvent, antifreeze, in building materials and in the production of synthetic fuels, among others.
- To date, the vast majority of methanol produced is generated from natural gas, which **links it directly to greenhouse gas emissions.**
- The advent of green methanol from clean energy sources is intended to give a major boost to this compound, making it a promising alternative to fossil fuels in reducing the carbon footprint of high-emitting industries such as maritime transport.

GREY, BLUE AND GREEN METHANOL

- Like other compounds or materials, methanol is nowadays **classified according to the degree of sustainability of its production process**, making it a more or less environmentally friendly raw material, and therefore more or less useful for contributing to decarbonisation.

Grey methanol

- It is obtained by synthesis reaction from methane present in natural gas (or in some cases, as in China, still from coal). It is therefore not clean energy.

Blue Methanol

- It is also obtained by synthesis **derived from natural gas,** but includes as part of the process the capture and storage of the carbon generated during its production, converting it into a less polluting product.

Green methanol

- It is produced using only renewable energy sources in the process and ensuring that no harmful gases are emitted into the atmosphere.
- Green methanol is a **low-carbon fuel** that can be **made from either biomass gasification or renewable electricity and captured carbon dioxide (CO2).**
- **Biomethanol:** produced from the **gasification of sustainable biomass sources** such as livestock, agricultural and forestry residues and municipal waste.
- **e-methanol:** produced from hydrogen produced from renewable electricity (what we call green hydrogen) and captured carbon dioxide.

Green methanol is defined as
"Methanol produced via a process that emits zero or a minimal amount of GHGs, usually measured as an equivalent amount of CO2."

Applications

- Green methanol has a wide range of applications, including serving as a **base material for the chemical industry, storing renewable electricity, and even as a transportation fuel.** It is also considered as a substitute fuel for maritime fuel applications.
- For the automotive industry, Methanol can be blended with gasoline. The key benefits for using methanol as a fuel include – low-emission fuel, can be made from variety of sources thus help reduce import, is high octane, economical, is accessible globally and is used in the automotive industry.

The recent Project

- The green methanol project involves capturing carbon from NTPC power plants and converting it into Green Fuel.

Significance

- Green methanol has **an impressive potential to help decarbonise the transport sector**. It can cut CO2 emissions by up to 95%, reduce nitrogen oxide (NOx) emissions by up to 80% and completely eliminate sulphur oxide (SOx) and particulate matter emissions.
- Green methanol could be **an efficient alternative to conventional fossil fuel production.**
- Commitment to Green Technologies and Sustainable Energies is essential to **promote more planet-friendly logistics and industrial processes**.
- Global energy demands are increasing and so too is the need for **more renewable and sustainable sources of energy to help transition us to a post-fossil-fuel-powered world**.

GALLIUM NITRIDE NANOSTRUCTURES / GS-III SCIENCE & TECHNOLOGY

Context

- A new method to confine and absorb infrared (IR) light with GaN nanostructures can help develop highly efficient infrared absorbers, emitters, and modulators that are useful in defence technologies, energy technologies, imaging, sensing, and so on.

What is GaN-on-silicon?

- GaN, is a **widely used material for blue light emission, is one of the most advanced semiconductors.**
- Gallium nitride(GaN) is a very **hard, mechanically stable wide bandgap semiconductor**. With higher breakdown strength, faster switching speed, higher thermal conductivity and lower on-resistance, power devices based on GaN significantly outperform silicon-based devices.
- GaN is used in the production of semiconductor power devices as well as RF components and light-emitting diodes (LEDs).
- GaN has demonstrated the capability to be the displacement technology for silicon semiconductors in power conversion, RF, and analog applications.

Advantages of GaN

- Lower on-resistance giving lower conductance losses.
- Faster devices yield fewer switching losses.
- Less capacitance resulting in fewer losses when charging and discharging devices.
- Less power is needed to drive the circuit.
- Smaller devices take up less space on the printed circuit board.
- Lower cost.

Concern

- Though visible and ultraviolet light applications of GaN have already been realized, with LEDs and laser diodes commercially

available, **utilization of GaN for IR light harvesting or development of GaN-based IR optical elements is lacking.**

Recent Research

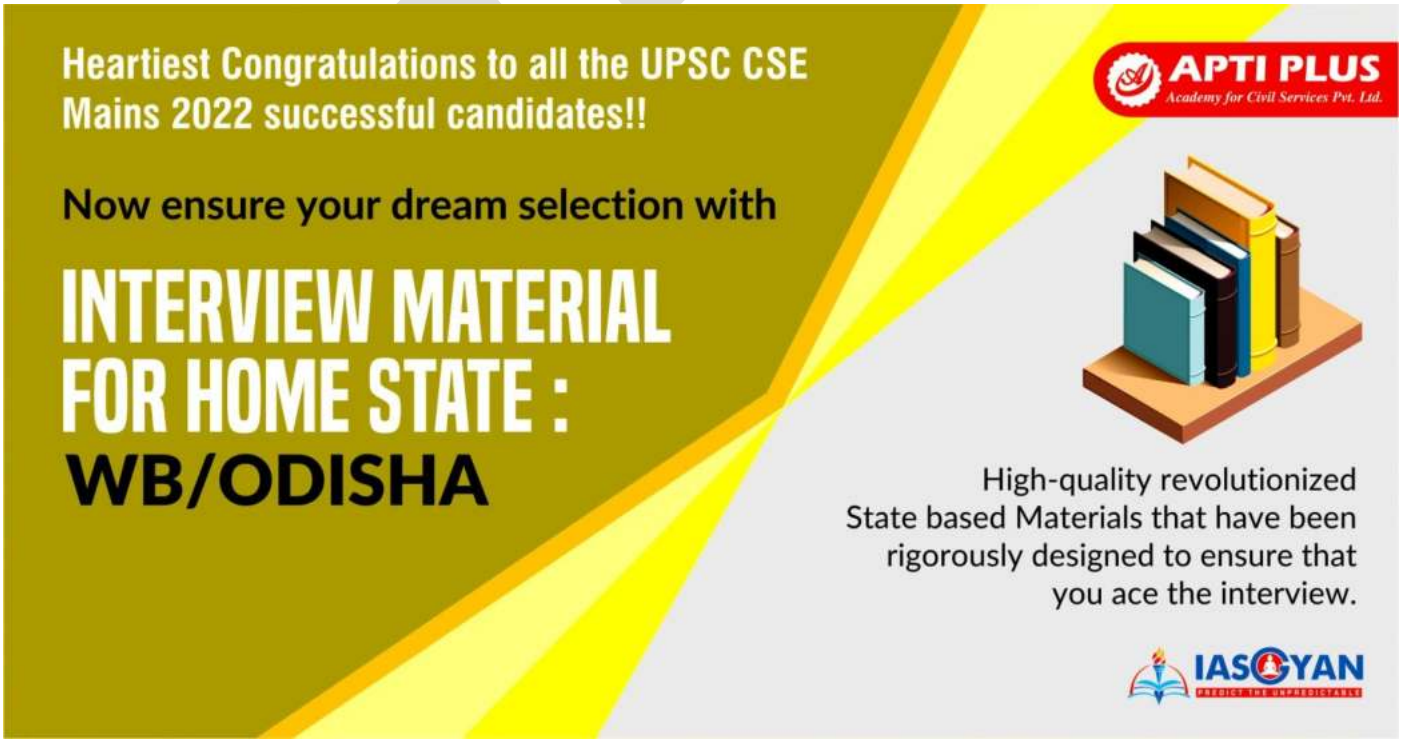
- Researchers in Bengaluru's Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), an autonomous institute of the Department of Science and Technology, have shown for the first **time infrared light emission and absorption with GaN nanostructures**.
- Though blue light emission from GaN has been known for some time, and it is used in LEDs, this is the first time that infrared light-matter interactions are demonstrated in GaN. For this demonstration, they have utilized a scientific phenomenon called **surface polariton excitations in GaN nanostructures** that lead to light-matter interactions at IR spectral range.
- ***Surface polaritons are special modes of electromagnetic waves traveling at the interface of a conductor and an insulator such as air.*** By altering the morphology and shape of the nanostructures, they are also able to excite plasmonpolaritons in GaN, which results in extending the light-matter coupling to further reaches of the electromagnetic spectrum. These polaritons are **quasi-particles which have both light and matter characteristics.**

Instrument and Technology used in the study

- To grow these GaN nanostructures, the researchers utilized a specialized material deposition instrument called **molecular beam epitaxy**. This instrument uses ultra-high vacuum, similar to the conditions of outer space, to grow high-quality material nanostructures with dimensions about 100000 times smaller than the width of a human hair.
- Such cutting-edge materials allow the creation of polariton-based devices, which offer several advantages to conventional electronic devices.
- Polaritonic technologies have attracted a wide range of applications, such as secure high-speed light-based communication (LiFi), next-generation light sources, solar energy converters, quantum computers, and waste-heat converters.

Wrapping it up

- In the last 25 years, blue LED with GaN has changed our world significantly. While the blue light emission from GaN is well-understood, utilizing GaN for infrared optics is not well-established. The recent research demonstrates a novel pathway for utilizing GaN in infrared nanophotonic applications.
- Importantly, the scientists said that the infrared surface polariton excitations demonstrated can be translated to many other semiconductors as well.
- This work will greatly benefit in addressing the demand for IR sources and detectors for energy, security, imaging, and other applications.



INS MORMUGAO

GS-III SECURITY & DEFENSE

Context

- Indian Naval Ship (INS) Mormugao (D67), second warship of the P15B class of stealth guided-missile destroyers, was commissioned in the august presence of RakshaMantri Shri Rajnath Singh at Naval Dockyard, Mumbai

Details

- INS Mormugao is one of the world's most technologically-advanced missile carriers.
- With over 75% indigenous content, it is a testimony to India's excellence in design and development of warships and a shining example of our growing indigenous defence production capabilities. The warship will meet the present and future needs of our country as well as of our friendly countries across the globe
- The commissioning of INS Mormugao is indicative of the large strides India has taken in warship design and building capability over the last decade. He added that the warship is a true illustration of 'Aatmanirbhar Bharat' and 'Make in India' initiative and it reinforces the Navy's commitment to supporting India's transformation into a global ship-building hub. The warship, with her multi-dimensional combat capability, will form part of the Western Fleet - the sword arm of the Indian Navy.
- **Measuring 163m in length and 17m in breadth with a displacement of 7,400 tonnes, INS Mormugao is packed with sophisticated state-of-the-art weapons and sensors such as Surface-to-Surface Missile and Surface-to-Air Missiles.**
- **The ship is fitted with a modern Surveillance Radar which provides target data to the gunnery weapon systems. Its Anti-Submarine Warfare capabilities are provided by the indigenously-developed Rocket Launchers, Torpedo Launchers and the ASW helicopters.**
- Named after the historic port city of Goa on the west coast, the ship is equipped to fight under Nuclear, Biological and Chemical warfare conditions.
- It is propelled by four powerful Gas Turbines, in a Combined Gas and Gas configuration, capable of achieving speeds in excess of 30 knots.

P15B destroyers

- P15B destroyers incorporate new design concepts for improved survivability, seakeeping and manoeuvrability. Enhanced stealth has also been achieved, making the ships difficult to detect. With a significantly increased indigenous content, P15B destroyers are a hallmark of self-reliance in warship design and building and a shining example of 'Aatmanirbhar Bharat'.

Vision & aim

- With power dynamics in the Indian Ocean Region constantly changing, the ship's all-domain capability will augment the Indian Navy's mobility, reach and flexibility to accomplish any mission or task. Induction of the ship into the Navy also reflects India's growing ability to remain First Responder and Preferred Security Partner in the region.

History

- The ship was launched on September 17, 2016 and commenced sea trials on December 19, 2021, coinciding with 60 years of Goa Liberation. The commissioning on 18 December is significant as it was the same date in 1961 when Operation Vijay was launched to liberate Goa from Portuguese rule.

NORTH-EAST INSURGENCY

GS-III SECURITY & DEFENSE

Context

- Information and Broadcasting Minister Anurag Thakur said that consistent efforts by the Central government had "weakened the ecosystem of terror" and has seen a "pronounced" reduction of violence in Jammu and Kashmir. It has also resulted in a sharp 80% decline in insurgency related violence in Northeast India, he added.

Details

- Government had worked on the legal front by strengthening the Unlawful Activities Prevention Act (UAPA) and also taken steps at the enforcement level by giving the National Investigation Agency (NIA) a truly federal structure through amendments to the relevant law.
- An era of peace has dawned on the northeastern region since 2014 as insurgency violence has seen a sharp decline of 80% and civilian deaths have seen an 89% drop. This has been achieved following the surrender of 6,000 militants since 2014.
- Probe agencies have achieved a conviction rate of 94% in cases of terror financing.
- The government has worked to create an atmosphere of lasting peace across the northeastern region through a series of peace pacts such as the Bodo Accord, Bru-Reang Agreement, NLFT-Tripura Agreement, KarbiAnglong Agreement and the Assam-Meghalaya Inter State Boundary Agreement.

- Armed Forces Special Powers Act (AFSPA) too has been rolled back from large parts of the northeast, including the whole of Tripura and Meghalaya, and 60% of Assam.

History of insurgency in North-East India

- North-East India has been witnessing insurgency since 1950s.
- The British had generally followed a policy of non-interference in the NEI.
- However, the newly independent India in 1947 had the formidable task of uniting various princely states not only of NEI but of the country as a whole. The integration of these distinct cultures of NEI into the "mainstream" was generally met with resentment.
- The insurgencies started with Naga Hills. Under the leadership of Phizo, the Naga National Council (NNC) declared independence from India on 14 Aug 1947.
- Despite efforts at political settlement by various leaders of that time, the unrest did not die.
- As a result, Indian Army (IA) was ordered to undertake Counter-Insurgency (CI) operations in Jan 1956, after the Government of India (GoI) declared Naga Hills as a disturbed area. Thereafter, various regions proactively voiced their demands for freedom/independence, and initiating insurgencies in the region.
- The Mizo National Front led by leader Laldenga, demanded independence for Mizoram in 1966.
- A movement that started demanding the deportation of the illegal migrants also witnessed the birth of the militant outfit the United Liberation Front of Assam (U.L.F.A.) in 1979.
- National Democratic Front of Bodoland are demanding separate Bodoland out of Assam.

Nagaland Insurgency

- The **British annexed Assam in 1826, and in 1881, the Naga Hills also became part of British India.**
- The first sign of Naga opposition was seen in the formation of the Naga Club in 1918, which opposed the Simon Commission in 1929 and demanded autonomy for the area.
- In 1946, the **Naga National Council (NNC)** declared Nagaland an independent state on August 14, 1947.
    - They were determined to establish a "sovereign Naga state" and they also conducted a "referendum" in 1951, in which **"99%" population supported the demand for an "independent" Nagaland.**
    - They formed the underground Naga Federal Government (NFG) and the Naga Federal Army (NFA).
- The Government of India sent in the Army to crush the insurgency and, in 1958, enacted the Armed Forces (Special Powers) Act.
- The Naga Hills, a district of Assam, was upgraded to a state in 1963.
- In 1964, a Peace Mission was signed between the government and NNC to suspend the activities, but even after that the NNC continued to indulge in violence, and then Peace Mission was abandoned in 1967, and a massive counter-insurgency operation was launched.
- In 1975, a section of NNC leaders signed the **Shillong Accord**, under which they agreed to give up arms.
    - Another group refused to accept the Shillong Accord and formed the National Socialist Council of Nagaland (NSCN) in 1980.
    - With time, the NSCN became the "mother of all insurgencies" in the region.
- **Their main demand is the creation of a "Greater Nagalim"** that comprises "all bordering Naga-inhabited areas", along with Nagaland.
    - That included several districts of Assam, Arunachal and Manipur, as also a large tract of Myanmar.
    - The map of "Greater Nagalim" has about 1,20,000 sq km, while the state of Nagaland consists of 16,527 sq km.
    - The Nagaland Assembly has also advocated the 'Greater Nagalim' demand — "Integration of all Naga-inhabited bordering areas under one administrative umbrella".
- In 1997, The Government of India signed a ceasefire agreement with NSCN.
- **Framework Agreement 2015**
    - The 2015 Framework Agreement **between the Centre and the National Socialist Council of Nagalim (Isak-Muivah)** to finalise the Naga Peace Accord is now turning out to be the key **stumbling block in reaching an agreement** between the two sides and finding a permanent solution to the longstanding Naga issue.
    - The **vague wording of the Framework Agreement** and the **Centre's belligerent stand on issues of separate constitution and flag** for any region in the country after August 5, 2019 decisions on J&K have pushed the Naga Peace process into a stalemate. Even an apparent effort to mollify NSCN(IM) by removing former Naga interlocutor R N Ravi does not seem to have worked for the government.

Other Major Agreements of the Northeast

NLFT Tripura Agreement

- The agreement was signed on 10 August 2019 in the presence of the Home Minister.

- **As per the MoU, for the overall development of the tribes of Tripura, the Government of Tripura will be provided with a Special Economic Development Package (SEDP) of Rs. 100 crores by the Government of India during a period of five years.**
    - Out of this amount of Rs. 100 crores, an amount of Rs. 40 crore has already been released to Tripura during the financial year 2020-21.

Bru Agreement

- A historic agreement was signed in the presence of the Home Minister on 16.01.2020 by the Government of India, Government of Tripura, and Government of Mizoram along with representatives of Bru migrants for the permanent settlement of 6959 Bru families in Tripura with a financial package of about Rs. 661 crore.
- **As per the agreement, each resettled Bru family would be given financial assistance** in the form of a fixed deposit of Rs.4 lakh, free ration, five thousand rupees per month for two years, housing assistance at the rate of Rs.1.5 lakh, and a land plot of 30x40 square feet.

Bodo Peace Accord

- In the presence of Home Minister Shri Amit Shah, a Memorandum of Understanding (MoU) was signed on 27.01.2020 by the Government of India, the Government of Assam, and representatives of Bodo groups to resolve the long-pending Bodo issue.
- Most of the demands of the Bodo groups have been met and the remaining demands would be met when as per the MoU, the committees constituted for this purpose would give their recommendations.
- **As per the agreement, a special development package of Rs 1,500 crore (750 crores by the Central Government and 750 crores by the Assam government) will be provided** over a period of three years for the all-around development of the Bodo region in Assam.

Karbi Anglong Agreement

- To end the decades-old crisis in the Karbi Anglong region of Assam, a Memorandum of Understanding (MoU) was signed on 04.09.2021 in the presence of the Home Minister between the Government of India, the Government of Assam and representatives of Karbi groups.
- As a result of this historic agreement, more than 1000 armed cadres renounced violence and joined the mainstream of society.
- **As per the agreement, a special development package of Rs 1,000 crore will be given over five years by the central government and the Assam government to take up special development projects in the Karbi areas.**
- This agreement will ensure the protection of the culture, identity, language, etc. of the Karbi people and the all-round development of the region.

Reason for insurgency in North-East India

- **Multi-Ethnic Region:** North east India is the most ethnically diverse region in India. It is home to around 40million people including 213 of the 635 tribal groups listed by the Anthropological Survey of India. Each of these tribes is having its own distinct culture. Thus, each tribal sect resents being integrated into the mainstream India as it means losing their own distinct identity.
- **Underdeveloped Region:** Due to the difficult terrain configuration of jungles and mountains, infrastructural development in NEI has generally been slow, often at a snail's pace. This has widened the schism between the NEI and mainstream India, and further increased a sense of disenchantment with the GoI.
- **Lack of Economic Development:** GoI's economic policies have also fuelled resentment and insecurity amongst the people. Due to various factors, the development of NEI has lagged behind thereby resulting in lack of employment opportunities. Thus the youth are easily lured by various insurgent groups in order to earn easy money.
- **Sense of Isolation, Deprivation and Exploitation:** Distance from New Delhi and meagre representation in the Lok Sabha has further reduced the voxpopuli being heard in the corridors of powers, leading to more disillusionment in the dialogue process, thereby making call of the gun more attractive.
- **Demographic Changes:** The influx of refugees from former East Pakistan (now Bangladesh) into Assam led to a dramatic change in the demographic landscape of the region. This led to discontent amongst the people of the region, thereby giving rise to insurgency in Assam with the United National Liberation Front (ULFA), formed on 7Apr1979, leading the mass anti-immigrant agitation.
- **Internal Displacement:** From the 1990s to the start of 2011, over 800,000 people were forced to flee their homes in episodes of inter-ethnic violence in western Assam, along the border between Assam and Meghalaya, and in Tripura. According to conservative estimates, some 76,000 people remain in internal displacement in NEI due to the prolonged armedviolence.4
- **External Support:** The insurgencies in the NEI have been supported by erstwhile East Pakistan in the late 1950s;and in early 1960s, in the form of training of personnel of Naga Army and giving them weapons. Later, China also provided weapons and moral support.
- **Perceived Excesses by Indian Army:** The promulgation of Armed Forces Special Powers Act (AFSPA) in most of the NEI has further alienated the local populace. Though imperative for strengthening the hand of IA for CI operations, it is often portrayed as draconian by various Human Rights (HR) organisations and thus has been vilified by various insurgent groups.

Reason for decline in North-East insurgency

- Marked improvement in security relation with Myanmar and Bangladesh.
- Increased talks between government and insurgent for peace.
- Decline in popularity of insurgent group among people and they know that most likely it will go on declining.

What are the challenges faced by government?

- Lack of infrastructural development due to obstruction created by insurgents.
- Poverty, unemployment, feeling of discrimination and neglect has also fuelled insurgency.
- Support provided by neighbouring country such as China to insurgents.
- Porous border due to which insurgents keep moving in and out of country thus remaining out of reach of security forces.
- Extortion and violence is deterring the private investment in the north east thus hindering development activity in the region.
- Nexus between politician, bureaucracy and militants which only harms the general innocent public while benefitting the affluent.
- Ethnic complexity due to which government find it difficult to pacify each community and result is the one or more community keep feeling neglected.

Steps taken by Government to tackle North east insurgencies

- **Dialogue and Negotiation:** The Indian government has always given preference to dialogue and negotiations over armed conflicts in the Northeast. Mizo Accord, Naga Peace Mission of 1964, the Shillong Accord of 1975 and the ongoing peace negotiations with the NSCN (IM) and the NSCN (K).
- **Greater Statehood**: The government has given considerable attention to reduce the conflicts by conferring greater statehoods in the north east. Such as formation of Mizoram, Nagaland, Meghalaya etc.
- **Autonomous Administrative Areas:** Such as Bodoland council, Autonomous district council in Meghalaya.
- **Special Treatment to Nagaland** to pacify the Nagas.
- Creation of separate ministry for development of north eastern region (**MoDONER)** to fuel development in the region.
- **Look East and Act East policy** for economic development and trade routes to South East Asia via land and sea to bring about prosperity to the North-eastern states.
- **Civic Action Programme in the North Eastern States** for trust building between people and security forces.
- **Advertisement and Publicity** of government measures to bring development and peace in the region.
- **Counter Insurgency in North East:** Use of AFSPA, Modernization of Police, counter insurgency movement by India in Myanmar to eliminate insurgents.
- **North East Special Infrastructure Development Scheme (NESIDS)**: Under this scheme, which is entirely funded by the central government, money would be provided to the north-eastern states for infrastructure projects on water supply, power and connectivity enhancing tourism, primary and secondary education and health. It also seeks to promote industrialization in the region, with emphasis on boosting employment and income generation in the manufacturing and service sectors.

What can be done to solve the issue in North-East India?

- Meaningful negotiations on priority basis with insurgent group who are willing to come on table.
- The Autonomous District Councils should be given more power and empowerment to pacify the local demands.
- Improvement in governance to reduce corruption and discrimination with communities based on their ethnic identity.
- **Full-fill the aspiration of younger generation:** Focus should be on creating enough employment opportunities for the local youth as they will be very useful in bringing normalcy to the region. Youth engaged in meaningful employment will not only help in development of north-east region but also development of whole country and at the same time bring peace in the region.
- **Development**
  - focus should be on tapping the natural resources abundant in this region such as bamboo and rubber and setting up of industry in this sector such as biofuel industry, furniture industry etc.
  - The North east should become a single economic unit without disturbing the political boundaries of the states.
  - Tourism should be promoted.
- **Relation with Bangladesh:** When we talk about the North-east region, we cannot ignore Bangladesh. Better relations with Bangladesh in terms of foreign policy, cultural exchange, social linkage, etc. will have better economic impact on the region.
- **Bring private investment in north-east:**
  - There is a need to identify possible areas in which investment can be made in the north-east and we need to step-up the investment.
  - Government should assure the private sector of the security to their business and installations.
  - Tax-break, cheap land, cheap credit etc. need to be provided by government to incentivise the private sector to invest in north-eastern region.
  - Focus on infrastructure development such as rail, road connectivity, adequate and continuous power supply etc. to make the industry feasible.

FROZEN CORAL

Context

- Scientists working on Australia's Great Barrier Reef have successfully trialled a new method for freezing and storing coral larvae they say could eventually help rewild reefs threatened by climate change.

Details

- **Cryogenically frozen coral can be stored and later reintroduced to the wild but the current process requires sophisticated equipment including lasers. Scientists say a new lightweight "cryomesh" can be manufactured cheaply and better preserves coral.**
- In a December lab trial, the world's first with Great Barrier Reef coral, scientists used the cryomesh to freeze coral larvae at the Australian Institute of Marine Sciences (AIMS). The coral had been collected from the reef for the trial, which coincided with the brief annual spawning window.
- The cryomesh was previously trialled on smaller and larger varities of Hawaiian corals. A trial on the larger variety failed.
- The mesh technology will help store coral larvae at -196C (-320.8°F).
- This new technology that we've got will allow us to do that at a scale that can actually help to support some of the aquaculture and restoration interventions

What are coral reefs?

- Corals are marine invertebrates or animals which do not possess a spine. They are the largest living structures on the planet.
- Each coral is called a polyp and thousands of such polyps live together to form a colony, which grow when polyps multiply to make copies of themselves.
- Corals are of two types — hard corals and soft corals.
- Hard corals extract calcium carbonate from seawater to build hard, white coral exoskeletons. Hard corals are in a way the engineers of reef ecosystems and measuring the extent of hard coral is a widely-accepted metric for measuring the condition of coral reefs.
- Soft corals attach themselves to such skeletons and older skeletons built by their ancestors. Soft corals also add their own skeletons to the hard structure over the years. These growing multiplying structures gradually form coral reefs.
- Australia's Great Barrier Reef is the world's largest reef system stretching across 2,300 km and having nearly 3,000 individual reefs. It hosts 400 different types of coral, gives shelter to 1,500 species of fish and 4,000 types of mollusc.
- Coral reefs support over 25% of marine biodiversity even as they take up only 1% of the seafloor. The marine life supported by reefs further fuels global fishing industries.
- Besides, coral reef systems generate $2.7 trillion in annual economic value through goods and service trade and tourism.
- In Australia, the Barrier Reef, in pre-COVID times, generated $4.6 billion annually through tourism and employed over 60,000 people including divers and guides.

Why are coral reefs important?

- Coral reefs are like underwater cities that **support marine life**.
- According to the UN Environment programme, they provide at least half a billion people around the world with **food security and livelihoods.**
- Coral reefs also act as **'wave breaks'** between the sea and the coastline and **minimise the impact of sea erosion**.
- In India, they are protected in the same way as the tiger or elephant, under **Schedule I of the Wildlife Protection Act (WPA), 1972.**

What poses a threat to coral reefs?

- **Climate change** remains one of the biggest threats to corals.
- This threat has been visible in the "**bleaching" of corals.**
  - Bleaching is a process during which corals, under stress from warm weather, expel the algae that give corals their brilliant colours and live in their tissues and produce their food.
- The **Great Barrier Reef** off the coast of Australia, a **UNESCO World Heritage site** and home to one of the largest collections of coral reefs on the planet, has suffered six mass bleaching events due to warmer than normal ocean temperatures: in 1998, 2002, 2006, 2016, 2017, and now 2020.

SIXTH MASS EXTINCTION

Context

- The planet's sixth mass extinction is underway, courtesy humans. Report after report has attested to this fact. This marks the beginning of the Anthropocene Epoch.

Details

- **A Brief History of Earth:**
- Early life forms began to flourish during the Cambrian Explosion, 540 million years ago. Mass extinctions—when at least half of all species die out in a relatively short time—have occurred only a handful of times over the course of our planet's history. The largest mass extinction event happened around 250 million years ago, when perhaps 95 percent of all species went extinct.

Top Five Extinctions

Ordovician-silurian Extinction: 440 million years ago

- Small marine organisms died out.

Devonian Extinction: 365 million years ago

- Many tropical marine species went extinct.

Permian-triassic Extinction: 250 million years ago

- The largest mass extinction event in Earth's history affected a range of species, including many vertebrates.

Triassic-jurassic Extinction: 210 million years ago

- The extinction of other vertebrate species on land allowed dinosaurs to flourish.

Cretaceous-tertiary Extinction: 65 Million Years Ago

What to Call It?

- Scientists refer to the major extinction that wiped out nonavian dinosaurs as the K-T extinction, because it happened at the end of the Cretaceous period and the beginning of the Tertiary period. Why not C-T? Geologists use "K" as a shorthand for Cretaceous. "C" is shorthand for an earlier period, the Cambrian.
- *Dawn of a New Age*
- The extinction that occurred 65 million years ago wiped out some 50 percent of plants and animals. The event is so striking that it signals a major turning point in Earth's history, marking the end of the geologic period known as the Cretaceous and the beginning of the Tertiary period.

6th Mass Extinction

- The Holocene extinction, otherwise referred to as the sixth mass extinction or Anthropocene extinction, is an ongoing extinction event of species during the present Holocene epoch (with the more recent time sometimes called Anthropocene) as a result of human activity.
- The included extinctions span numerous families of bacteria, fungi, plants and animals, including mammals, birds, reptiles, amphibians, fish and invertebrates. With widespread degradation of highly biodiverse habitats such as coral reefs and rainforests, as well as other areas, the vast majority of these extinctions are thought to be undocumented, as the species are undiscovered at the time of their extinction, or no one has yet discovered their extinction.
- The current rate of extinction of species is estimated at 100 to 1,000 times higher than natural background extinction rates.
- The Holocene extinction includes the disappearance of large land animals known as megafauna, starting at the end of the last glacial period.
- The most popular theory is that human overhunting of species added to existing stress conditions as the extinction coincides with human emergence.
- Ecologically, humanity has been noted as an unprecedented "global superpredator" that consistently preys on the adults of other apex predators, and has worldwide effects on food webs. There have been extinctions of species on every land mass and in every ocean: there are many famous examples within Africa, Asia, Europe, Australia, North and South America, and on smaller islands.
- Overall, the Holocene extinction can be linked to the human impact on the environment.
- The Holocene extinction continues into the 21st century, with meat consumption being a primary driver of the mass extinction, and deforestation, overfishing, ocean acidification, the destruction of wetlands, and the decline in amphibian populations being a few broader examples of global biodiversity loss. Human population growth and increasing per capita consumption are considered to be the primary drivers of this decline.

APTI PLUS

PROJECT LION

GS-III ENVIRONMENT & ECOLOGY

Context

- The Minister of State for Environment, Forest and Climate Change, Shri Ashwini Kumar Choubey made comments on the Project Lion document titled **"Lion @ 47: Vision for Amrutkal".**

Details

- **It has been prepared with the following objectives:**
  - to secure & restore lions' habitats for managing its growing population;
  - scale up livelihood generation and participation of local communities;
  - become a global hub of knowledge on big cat disease diagnostics and treatment and
  - create inclusive biodiversity conservation through project lion initiative.
- **Project Lion envisages landscape ecology based conservation of the Asiatic Lion in Gujarat by integrating conservation and eco-development. The Project is being implemented in the Gir landscape in Gujarat which is the last home of the Asiatic lion.**
- Project Lion is being implemented by the State Government of Gujarat and other stakeholders like Central Zoo Authority.
- **Financial assistance of Rs. 124.58lakhs have been provided to State of Gujarat for conservation of wildlife including Asiatic Lions under the Centrally Sponsored Scheme (CSS)- 'Development of Wildlife Habitats' during last three years. Further, revalidation of Rs 1641.42 lakhs of grants released during 2018-19 under the Asiatic Lion Conservation project has also been done during the period. The State Government of Gujarat has submitted the Utilization Certificate for the funds released as Central share under Asiatic Lion Conservation project**
- "**Asiatic Lion Conservation Project**" was launched by **Ministry of Environment, Forest and Climate Change (MoEFCC) for three financial years from 2018 to 2021** with an aim to protect and conserve the world's last ranging free population of Asiatic Lion and its associated ecosystem.
- The project will be funded from **the Centrally Sponsored Scheme- Development of Wildlife Habitat (CSS-DWH)** with the contributing ratio being **60:40 of Central and State share**.
- The Ministry in the past has supported Asiatic Lion in Gujarat by including it in list of 21 critically endangered species under the species recovery component of **CSS-DWH.**

About Asiatic lions

- **Habitat:** They are confined to **Gir National Park and its surrounding environs** in Gujarat's Saurashtra.
  - Five protected areas currently exist to protect the Asiatic lion: **Gir Sanctuary, Gir National Park, Pania Sanctuary, Mitiyala Sanctuary, and Girnar Sanctuary.**
  - In the surrounding sanctuary **only Maldharis** have the right to take their livestock for grazing.
- **Population:** As per the 14th Asiatic Lion Census 2005, the lion population was estimated at 523 individuals. In August 2017, surveyors counted 650 wild lions. The 15th Asiatic Lion Census could not be conducted in 2020, as scheduled, because of the COVID-19 pandemic. In June 2020, an estimation exercise counted 674 Asiatic lions in the Gir forest region, an increase of 29 per cent over the 2015 census figure.
- **Threats:** The Asiatic lion currently exists as a single subpopulation, and is thus vulnerable to extinction from unpredictable events, such as an **epidemic or large forest fire.** There are indications of **poaching incidents** in recent years. There have also been a number of **drowning incidents after lions fell into wells**.
  - Nearly 85 lions in the vicinity of Gir Forest were found dead in October 2018, they had died because of **canine distemper virus**, the same virus that had killed several Serengeti lions earlier.
  - The Asiatic lion is confined only to the Gir protected area and its surrounding environs and thus faces the additional **threat of genetic homogeneity**, which makes the species susceptible to diseases. "It is thus in the interest of long term Asiatic lion conservation that the species be reintroduced to other places in and outside Gujarat
- **Expert suggestions**: Experts have called for the reintroduced of the species outside Gujarat for the long term conversation of the Asiatics lions. **KunoPalpur Sanctuary in MP** is being considered by the ministry for reintroduction of lions.
- **Conservation status:** It is categorised as **endangered** on the International Union for the Conservation of Nature Red List.

SACRED GROVES

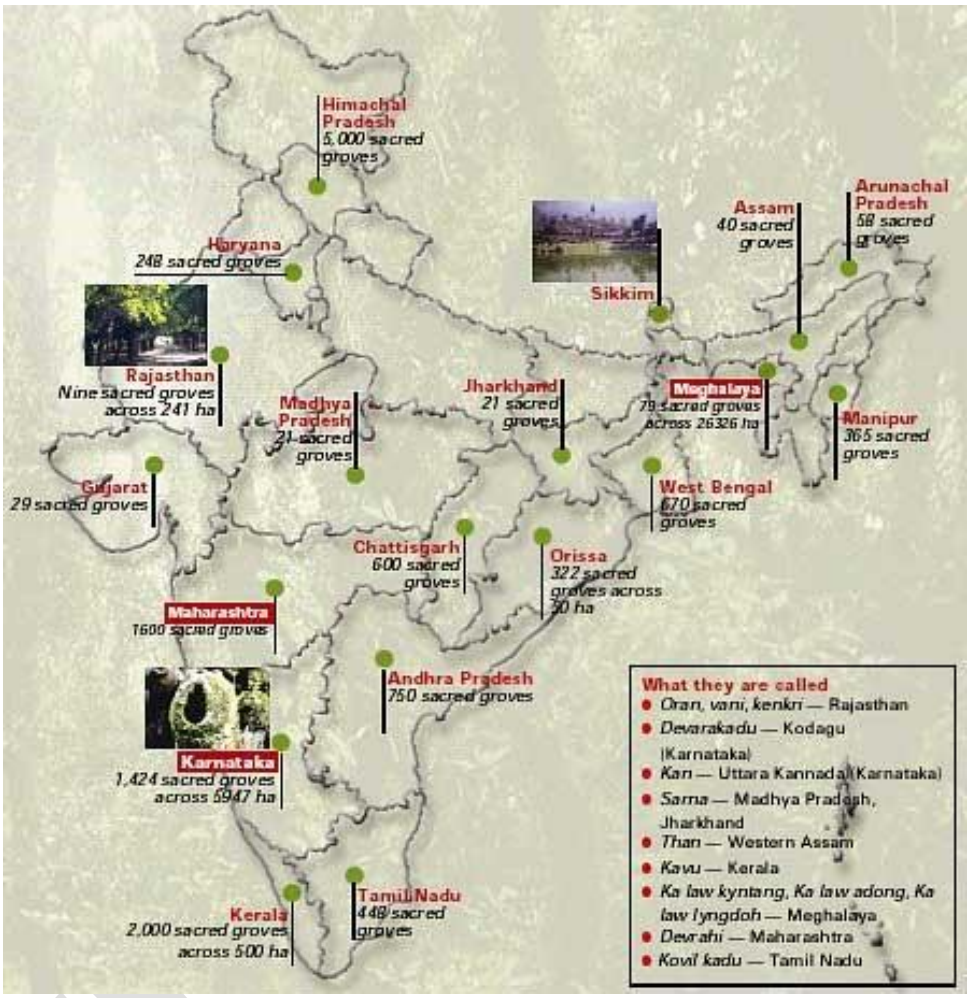
GS-III ENVIRONMENT & ECOLOGY

Context

- A unique 225-km-long *yatra* taken out through remote villages and hamlets in western Rajasthan, which culminated at the Jaisalmer district headquarters, added a powerful voice to the demand for protection of *orans* or sacred groves facing the threat of destruction with their land being allotted for renewable energy infrastructure and high-tension power lines.

Details

- Orans also form the natural habitat for India's most critically endangered bird, the Great Indian Bustard (GIB), a protected species under the Wildlife Protection Act, which is also the State bird of Rajasthan.
- GIBs have died during the last few years because of collision with power lines, making this the most significant threat to the majestic birds.



What are sacred groves?

- Sacred groves refer to a **piece of natural vegetation that is protected by a certain community due to religious reasons**.
- The area is usually dedicated to a local deity. As a result, local communities tend to take responsibility to protect and nurture the area.
- According to these protections, hunting and deforestation in these areas are banned but other activities with a more sustainable process such as honey and deadwood collection are allowed.
- The introduction of **Wild Life (Protection) Amendment Act, 2002, provides government protection to these lands.**

Distribution of Sacred groves in India

- India contains many sacred groves.
- A strong concentration of these groves is found in **Himachal Pradesh and Kerala**. Other places where one can find sacred groves are **Rajasthan, Bihar, Meghalaya and Maharashtra.**
- **Himachal Pradesh:** The state with the highest number of sacred groves, Himachal Pradesh is meticulous and extremely careful about these natural settings**. Shipin is believed to be the largest deodar grove** and contains trees that are thousands of years old.
- **Maharashtra:** The groves in Maharashtra are called deorais or devrais and are concentrated in Pune, Ratnagiri, Raigad and Kolhapur.
- **Bihar:** Known as **sarnas**, the groves in Bihar are fairly small and only consist of 2 to 20 trees.
- **Rajasthan:** The largest area is covered by oraans that provide a different set of biodiversity in distinctive areas.
- **Meghalaya:** Home to some of the richest groves in the country, Khasi hills in Meghalaya have one grove called law **kyntangs** in almost every village.
- These rare and endangered plant species found in sacred groves harbour rich biodiversity and are rich repositories of valuable medicinal plants. The groves also support a wide variety of birds and small mammals.

Economic and Ecological benefits

Traditional uses:

- One of the most important traditional uses of sacred groves was that it acted as a repository for various **Ayurvedic medicines**.
- Other uses involved a source of replenishable resources like fruits and honey. However, in most sacred groves it was taboo to hunt or chop wood.
- The vegetation cover helps reduce soil erosion and prevents desertification, as in Rajasthan.
- The groves are often associated with ponds and streams, and meet water requirements of local communities.
- They sometimes help in **recharging aquifers** as well.

Modern uses:

- In modern times, sacred groves have become biodiversity hotspots, as various species seek refuge in the areas due to progressive habitat destruction, and hunting.
- Sacred groves often contain plant and animal species that have become extinct in neighboring areas.
- They harbor **great genetic diversity**. Besides this, **sacred groves in urban landscapes act as "lungs"** to the city as well, providing much needed vegetation cover.

Threats to the grove:

- **Urbanization, over-exploitation of resources** (like overgrazing and excessive firewood collection), and **environmental destruction** due to religious practices.
- Other threats to the sacred groves include **invasion by invasive species**, like the invasive weeds Chromolaenaodorata, Lantana camara and Prosopisjuliflora.

PLASTIC WASTE MANAGEMENT / GS-III ENVIRONMENT & ECOLOGY

Context

- The **Union Ministry of Environment, Forest & Climate Change (MoEF&CC) has mechanisms to assess the generation of plastic waste, but none for its collection and safe disposal**, found a compliance audit by the Comptroller and Auditor General (CAG) of India.

Details

- Plastic Waste Management (PWM) Rules, 2016, could not be implemented effectively and efficiently due to a lack of an action plan by the MoEF&CC, the report further said.
- The ministry is also lacking in effective coordination with pollution control boards, it said.
- The ministry was also silent about the existence of a policy for plastic waste reduction, reuse and recycling, CAG observed in its audit.
- The MoEF&CC stated to have adopted a three-pronged strategy for effective implementation of the rules, which include behavioural change; strengthening of the institutional system for the collection, segregation and recycling of plastic waste; and engagement with producers, importers and brand owners through Extended Producer's Responsibility.
- But the ministry did not have an action plan for the effective implementation of the said strategy for 2015-20, it found.
- Waste collection, recycling, co-processing and its ultimate disposal in scientific and environment friendly manner are essential elements of plastic waste management system, the report added.

Background

- **Around 3.46 million tonnes per annum (TPA) of plastic wastes were generated during 2019-20**, Ashwini Kumar Choubey, minister of state in the ministry of environment, forest and climate change, told the Lok Sabha.
- **Approximately 1.58 million TPA of the plastic waste was recycled and 0.16 million TPA was co-processed in cement kilns, he added.**
- The minister was referring to the annual report by the central pollution control board for 2019-20.
- The plastic litter collected from beaches varies from 40 per cent to 96 per cent, he said after referring to another study by National Center for Coastal Research.
- Recently, representatives from 175 countries at fifth session of the United Nations Environment Assembly (UNEA-5.2) agreed **to end plastic pollution and formulate an internationally binding treaty by 2024.**

What is Plastic Pollution?

- Plastic pollution occurs when **plastic has gathered in an area and has begun to negatively impact the natural environment** and create problems for plants, wildlife, and even the human population.
- This includes killing plant life and posing dangers to local animals.
- Plastic is an incredibly useful material, but it is not biodegradable.

Various Causes of Plastic Pollution

- As plastic is **less expensive**, it is one of the most widely available and overused items in the world today.
- **Rapid urbanization and population growth** increase the demand of cheap plastics.
- Since it is an **affordable and durable material**, it is utilized in every other way possible, from packaging materials to plastic bottles and containers, straws to plastic carry bags.
- Plastic takes **400 years and even more to Decompose**. The decomposition rate of plastic typically ranges from 500 to 600 years, depending on the type.
- **Abandoned Fishing Nets**

- Disposal of plastic is often **mismanaged**; it ends up in landfills.
- **Burning plastic is incredibly toxic** and can lead to harmful atmospheric conditions and deadly illnesses.

Serious Effects of Plastic Pollution:

- **Negative Effects on Human Health:** Microplastics entering the human body via direct exposures through ingestion or inhalation can lead to an array of health impacts, including inflammation, genotoxicity, oxidative stress, apoptosis, and necrosis, which are linked to an array of negative health outcomes including cancer, cardiovascular diseases.
- **Plastic-contaminated seafood**: Scientists have found micro plastics in 114 marine species, and around one-third of these end up on our plates.
- **Upsets the Food Chain**: Because it comes in sizes large and small, polluting plastics even affect the world's tiniest organisms, such as plankton.
- **Groundwater Pollution:** Most of the litter and pollution affecting the world's oceans and groundwater comes from plastics.
- **Land Pollution:** When plastic is dumped in landfills, it interacts with water and forms hazardous chemicals. When these chemicals seep underground, they degrade the water quality. The wind carries and deposits plastic from one place to another, increasing the land litter.
- **Air Pollution:** Burning of plastic in the open air leads to environmental pollution due to the release of poisonous chemicals.
- **Economic impacts:** Plastic pollution costs **$13 billion in economic damage** to marine ecosystems per year. This includes losses to the **fishing industry and tourism, as well as the cost to clean up beaches.** Economic costs include those linked to **clean-up operations, litter removal, the repair and replacement of damaged vessels and gear, reduced fishing catches, and a decline in coastal tourism and impact on related industries.**
- **Marine life:** The most visible and disturbing impacts of marine plastics are the **ingestion, suffocation and entanglement** of hundreds of marine species. Marine wildlife such as seabirds, whales, fishes and turtles, **mistake plastic waste for prey, and most die of starvation as their stomachs are filled with plastic debris.**

Plastic Waste Management Rules, 2016

- It aims to **increase minimum thickness of plastic carry bags from 40 to 50 microns**.
- Expand the jurisdiction of applicability from the municipal area **to rural areas**, because plastic has reached rural areas also.
- **Extended Producer Responsibility**: To bring in the responsibilities of producers and generators, both in plastic waste management system and to introduce collect back system of plastic waste by the producers/brand owners, as per extended producers responsibility
- **Introduced collection of plastic waste management fee** through pre-registration of the producers, importers of plastic carry bags/multilayered packaging and vendors selling the same for establishing the waste management system
- Promote **use of plastic waste for road construction** as per Indian Road Congress guidelines or energy recovery, or waste to oil etc. for gainful utilization of waste and also address the waste disposal issue.

Way Forward

- **The 3R's +E Strategy:**
  - **Reduce:** To efficiently reduce plastic pollution, there is an evident need of reducing our usage of plastic.
  - **Reuse:** Many plastic items can be reused or used for different purposes. Before throwing plastic items, it is important to consider how they can be reused.
  - **Recycle:** Plastic recycling consists of collecting plastic waste and reprocessing it into new products, to reduce the amount of plastic in the waste stream.
- **Educate:** Another crucial solution is education in order to increase awareness and behavioral change.
- **Law can be framed** and used to tackle plastic pollution and support a circular plastics economy.
- **Policy shifts** can reduce plastic pollution by incentivizing changes in both business and consumer behavior, as well as in plastic design, alternatives and recycling.
- Governments can also **impose taxes** to deter the production or use of single-use plastics, or **offer tax breaks, subsidies and other fiscal incentives to encourage alternatives to single-use plastic products**.
- **Product standards, certifications and labeling requirements can be designed to educate the public on the environmental impacts of plastic**, and on the health and safety hazards involved in their production and use.
- **Extended Producer Responsibility (EPR) programs** can ensure that manufacturers maintain responsibility for single-use plastic products throughout the whole life cycles of those products.

Conclusion

- There is no silver bullet to solving the world's plastic problem. It will require governments at both the national and sub-national levels to tackle the regulation of single-use plastic products, determining what policy approaches they want to use and what type of legislation will support their objectives.

Context

- Renewable energy will comprise 90 per cent of global electricity capacity expansion in the next five years and much of it will be in India, according to a new study by the autonomous intergovernmental organisation, International Energy Agency (IEA).

Details

- China, the European Union and the United States will be three other geographies contributing majorly to this upward trend besides India. This is primarily owing to the favourable policies and market reforms in all four.
- Renewable energy's installed power capacity addition will grow to 2,400 gigawatts (GW) between 2022 and 2027, according to the study.
- The forecast said this expansion was 85 per cent faster than the previous five years and will be equal to the entire installed power capacity of China today.
- **With the addition of 145 gigawatt (GW), India is forecast to almost double its renewable power capacity over 2022-2027. Solar photovoltaic (PV) accounts for three-quarters of this growth, followed by onshore wind with 15 per cent and hydropower providing almost all the rest.**
- The report said consistent policy support from the Indian government may enable this transition, particularly by promoting local manufacturing of solar modules. This is because there are bottlenecks in the supply chain from China.
- **Two such policies came to effect in 2022:**
    - The duty on imports was increased to 40 per cent for PV modules from 15 per cent and to 25 per cent for solar cells in April 2022. This was done to reduce dependence on China and increase domestic manufacturing. The report said this is expected to add 16 GW of PV capacity, 60 per cent higher than last year.
    - The Production Linked Incentive (PLI) scheme sanctioned 9 GW of PV manufacturing capacity to provide an ecosystem of local manufacturing. This programme aims to expand India's solar PV cell and module manufacturing capacity to over 70 GW in this decade, including 29 GW of manufacturing capacity fully integrated across the whole supply chain, the report said.

Achievements of India

- India was ranked fourth in wind power, fifth in solar power and fourth in renewable power installed capacity, as of 2020.
- Installed renewable power generation capacity has gained pace over the past few years, posting a CAGR of 17.33% between FY16-20. With the increased support of Government and improved economics, the sector has become attractive from an investors perspective.
- The **renewable energy capacity addition stood at 8.2 GW for the first eight months of FY22** against 3.4 GW for the first eight months of FY21.
- According to the data released by Department for Promotion of Industry and Internal Trade (DPIIT), **FDI inflow in the Indian non-conventional energy sector stood at US$ 11.21 billion between April 2000-December 2021.**
- More than Rs. 5.2 lakh crore has been invested in India's renewable energy sector since 2014.
- According to the analytics firm British Business Energy, **India ranked 3rd globally in terms of its renewable energy investments and plans in 2020.**
- India ranked **third on the EY Renewable Energy Country Attractive Index 2021.**

Targets

Paris Agreement Targets

- In the Paris Agreement India has committed to an Intended Nationally Determined Contributions target of achieving 40% of its total electricity generation from non-fossil fuel sources by 2030.

Central Electricity Authority's strategy blueprint

- We are also aiming for a more ambitious target of 57% of the total electricity capacity from renewable sources by 2027 in Central Electricity Authority's strategy blueprint.
- According to 2027 blueprint, India aims to have 275 GW from renewable energy, 72 GW of hydroelectricity, 15 GW of nuclear energy and nearly 100 GW from "other zero emission" sources.
- There is also a target for installation of Rooftop Solar Projects(RTP) of 40 GW by 2022 including installation on rooftop of houses.

UN Climate Summit

- In 2019 at UN climate summit, India announced that it will be more than doubling its renewable energy target from 175GW by 2022 to 450GW of renewable energy by the same year.

- These targets would place India among the world leaders in renewable energy use and place India at the centre of its "Sunshine Countries" International Solar Alliance project promoting the growth and development of solar power internationally to over 120 countries.

Some Government's Initiatives for generating Renewable Energy

Grid Connected Solar Rooftop Programme

- **Objective**: For achieving cumulative capacity of 40,000 MW from Rooftop Solar (RTS) Projects by the year 2022.

Solar Park Scheme

- MNRE has come up with a scheme to set up a number of solar parks across several states, each with a capacity of almost 500 MW. The scheme proposes to offer financial support by the Government of India to establish solar parks to facilitate the creation of infrastructure required for setting up new solar power projects in terms of allocation of land, transmission, access to roads, availability of water, etc.

International Solar Alliance

- The International Solar Alliance (ISA) is an alliance of 121 countries initiated by India, most of them being sunshine countries, which lie either completely or partly between the Tropic of Cancer and the Tropic of Capricorn. The primary objective of the alliance is to work for efficient consumption of solar energy to reduce dependence on fossil fuels.
- The initiative was launched by Prime Minister Narendra Modi at the **India Africa Summit,** and a meeting of member countries ahead of the 2015 United Nations Climate Change Conference (COP 21) in Paris in November 2015. The framework agreement of the International Solar Alliance opened for signatures in Marrakech, Morocco in November 2016, and 200 countries have joined. **HQ-** Gurugram, Haryana

PM KUSUM

- Pradhan MantriKisanUrja Suraksha evemUtthanMahabhiyan (PM KUSUM) Scheme for farmers aims for installation of solar pumps and grid connected solar and other renewable power plants in the country.
- The scheme aims to add solar and other renewable capacity of 25,750 MW by 2022.

National Green Corridor Project

- The green energy corridor is grid connected network for the transmission of renewable energy produced from various renewable energy projects.

India's Focus Areas

Methanol and Biomass

- Utilizing other alternatives like methanol-based economy and biomass.
- Bio-CNG vehicles with 20% blending in petrol is also a target for the government.
- Generating energy from Biomass is a better option since it will clean the cities and also decrease our energy dependence. Fuels created from biomass have a high calorific value and are cleaner than traditional biomass.

The Twin Challenge

- India has a twin challenge of providing more as well as cleaner energy to the population in India.
- It should focus on getting into the manufacturing of solar panels under the AtmaNirbhar Bharat initiative because the demand is to generate jobs and supply decentralised energy to all the households in India.
- Developing the whole supply chain of all the components besides the manufacturing sector.

Hydrogen based FCV

- It is likely to change the landscape of renewables and moving towards Hydrogen Based Fuel Cells Vehicles (FCV) is another area of focus.
- **Grid Integration**
- It is the practice of developing effective ways to provide variable renewable energy (RE) to the grid.

Conclusion

- India's clean-energy initiatives have the wind at their back thanks to global advances in green technology—especially solar power, wind power, and energy storage.
- These technologies are progressing exponentially and have entered a virtuous cycle: As prices for these technologies fall, demand for them rises, and as production is expanded to meet demand, prices fall some more, all of which contributes to accelerating adoption.

Context

- The Rajya Sabha passed the Wild Life (Protection) Amendment Bill, 2022, which has invited scrutiny on two major issues: the exemption made to allow the transfer of captive elephants, and the sweeping powers given to the Centre to declare species as vermin. Lok Sabha had cleared the Bill in August during the monsoon session.

Details:

The elephant question

- In 1927, the Indian Forest Act listed the elephant as cattle.
- When WLPA was enacted in 1972, it identified the elephant, along with bullock, camel, donkey, horse and mule, as a "vehicle". Given the highest legal protection in 1977, the elephant is the only animal in WLPA's Schedule-I that can still be owned legally — by means of inheritance or gift.
- Since 2003, Section 3 of the WLPA prohibited trade in all captive wildlife and any (non-commercial) transfer across state boundaries without the permission of the respective chief wildlife warden. This made the live elephant trade go underground as traders switched to dressing up commercial deals as fake gift deeds to bypass the amendment.
- The WLPA amendment Bill 2021 proposed an exception to Section 43: **"This section shall not apply to the transfer or transport of any live elephant by a person having a certificate of ownership, where such person has obtained prior permission from the State Government on fulfilment of such conditions as may be prescribed by the Central Government."**
- Along with conservation and animal welfare groups, the Parliamentary Standing Committee headed by Congress leader Jairam Ramesh objected to the blanket exemption, recommending to limit it only to temple elephants kept for religious purposes.
- Under pressure, the government modified the exemption but worded the amended clause vaguely to allow the "transfer or transport of a captive elephant for a religious *or any other purpose* by a person having a valid certificate of ownership shall be subject to such terms and conditions as may be prescribed by the Central Government" (emphasis added).
- Critics point out that the sweeping ambit of "any other purpose" will empower elephant traders, put wild populations at greater risk of capture, and defeat the very purpose of WLPA.

The vermin conflict

- The damage to the national economy due to crop depredation by wild animals has never been computed. But for lakhs of farmers around India's many protected forests, it is the biggest challenge to livelihood (not to mention the occasional threat to life).
- **Since 1972, the WLPA has identified a few species — fruit bats, common crows and rats — as vermin.**
- Killing animals outside this list was allowed under two circumstances:
  - **Under Section 62 of WLPA, given sufficient reasons, any species other than those accorded the highest legal protection (such as tigers and elephants but not wild boars or nilgais) can be declared vermin at a certain place for a certain time.**
  - Under Section 11 of WLPA, the chief wildlife warden of a state can allow the killing of an animal, irrespective of its status in the Schedules, if it becomes "dangerous to human life".
- **The state governments took the decisions under Section 62 until 1991 when an amendment handed over the powers to the Centre.**
- The purpose was apparently to restrict the possibility of eliminating a large number of animals at a species level as vermin. Under Section 11, the states could issue culling permits only locally and for a few animals.
- **In recent years, however, the Centre has started using its powers under Section 62 to issue sweeping orders declaring species as vermin at even state levels, often without any credible scientific assessment.**
- For example, nilgais were declared as vermin across 20 districts in Bihar for a year in 2015. The Centre cited "large-scale destruction of agriculture" as the ground for declaring monkeys (Rhesus macaque) vermin in Shimla municipality in 2019.
- The issue has since entered the realm of centre-state politics. Since last year, Kerala's requests for declaring wild boars as vermin have been turned down repeatedly by the Environment ministry.
- That is why the House was divided on the issue, with members from Kerala highlighting the growing number of wild boar attacks in the state, and others seeking a more tempered and scientific approach in declaring a species as vermin.

Context

- Nearly 150 experts from 11 nations compiled this year's assessment of Arctic conditions, the Arctic Report Card, which NOAA has produced since 2006. This year's report card was issued in Chicago at a conference of the American Geophysical Union, the society of earth, atmospheric and oceanic scientists.

Details

- In the Arctic, the freedom to travel, hunt and make day-to-day decisions is profoundly tied to cold and frozen conditions for much of the year. These conditions are rapidly changing as the Arctic warms.
- The Arctic is now seeing more rainfall when historically it would be snowing. Sea ice that once protected coastlines from erosion during fall storms is forming later.
- And thinner river and lake ice is making travel by snowmobile increasingly life-threatening.
- Ship traffic in the Arctic is also increasing, bringing new risks to fragile ecosystems, and the Greenland ice sheet is continuing to send freshwater and ice into the ocean, raising global sea level.

The Arctic is getting wetter and rainier

- **We found that Arctic precipitation is on the rise across all seasons, and these seasons are shifting.**
- Much of this new precipitation is now falling as rain, sometimes during winter and traditionally frozen times of the year. This disrupts daily life for humans, wildlife and plants.
- Roads become dangerously icy more often, and communities face greater risk of river flooding events. For Indigenous reindeer herding communities, winter rain can create an impenetrable ice layer that prevents their reindeer from accessing vegetation beneath the snow.
- Arctic-wide, this shift toward wetter conditions can disrupt the lives of animals and plants that have evolved for dry and cold conditions, potentially altering Arctic peoples' local foods.
- There are multiple reasons for this increase in Arctic precipitation. As sea ice rapidly declines, more open water is exposed, which feeds increased moisture into the atmosphere. The entire Arctic region has seen a more than 40% loss in summer sea ice extent over the 44-year satellite record. The Arctic atmosphere is also warming more than twice as fast as the rest of the globe, and this warmer air can hold more moisture.
- Under the ground, the wetter, rainier Arctic is accelerating the thaw of permafrost, upon which most Arctic communities and infrastructure are built. The result is crumbling buildings, sagging and cracked roads, the emergence of sinkholes and the collapse of community coastlines along rivers and ocean.
- Wetter weather also disrupts the building of a reliable winter snowpack and safe, reliable river ice, and often challenges Indigenous communities' efforts to harvest and secure their food.

Arctic snow season is shrinking

- Snow plays critical roles in the Arctic, and the snow season is shrinking.
- **Snow helps to keep the Arctic cool by reflecting incoming solar radiation back to space, rather than allowing it to be absorbed by the darker snow-free ground. Its presence helps lake ice last longer into spring and helps the land to retain moisture longer into summer, preventing overly dry conditions that are ripe for devastating wildfires.**
- Snow is also a travel platform for hunters and a habitat for many animals that rely on it for nesting and protection from predators.
- A shrinking snow season is disrupting these critical functions.
- Even in the depth of winter, warmer temperatures are breaking through.
- Fatal falls through thin sea, lake and river ice are on the rise across Alaska, resulting in immediate tragedies as well as adding to the cumulative human cost of climate change that Arctic Indigenous peoples are now experiencing on a generational scale.

Greenland ice melt means global problems

- The impacts of Arctic warming are not limited to the Arctic.
- In 2022, the Greenland ice sheet lost ice for the 25th consecutive year. This adds to rising seas, which escalates the danger coastal communities around the world must plan for to mitigate flooding and storm surge.

Human-caused change is reshaping the Arctic

- **We are living in a new geological age — the Anthropocene — in which human activity is the dominant influence on our climate and environments.**

- In the warming Arctic, this requires decision-makers to better anticipate the interplay between a changing climate and human activity. For example, satellite-based ship data since 2009 clearly show that maritime ship traffic has increased within all Arctic high seas and national exclusive economic zones as the region has warmed.

CARBON MARKETS / GS-III ENVIRONMENT & ECOLOGY

Context

- The Parliament passed the Energy Conservation (Amendment) Bill, 2022 declining the Opposition's demands to send it for scrutiny to a parliamentary committee and amid concerns expressed by members over carbon markets. The Bill amends the Energy Conservation Act, 2001, to empower the Government to establish carbon markets in India and specify a carbon credit trading scheme.

About

Carbon Credits

- Carbon credits, also known as carbon offsets, are permits that allow the owner to emit a certain amount of carbon dioxide or other greenhouse gases. One credit permits the emission of one ton of carbon dioxide or the equivalent in other greenhouse gases.
- Carbon credits and carbon markets are a component of national and international **attempt to mitigate the growth in concentrations of greenhouse gases (GHGs).**
- Carbon credits are based on the **"cap-and-trade" model.** Companies get a fixed number of credits (permit to emit CO2/GHGs). These credits also decline over time gradually. They can choose to reduce emission further and sell any excess credit (permitted to them) to another company. Thus, Carbon credits create a monetary incentive for companies to reduce their carbon emissions. Those that cannot easily reduce emissions can still operate, at a higher financial cost.

Clean Development Mechanism

The CDM allows emission-reduction projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one tonne of CO2. These CERs can be traded and sold, and used by industrialized countries to a meet a part of their emission reduction targets under the Kyoto Protocol.

The mechanism stimulates sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction limitation targets.

The CDM is the main source of income for the UNFCCC Adaptation Fund. The Fund was established to finance adaptation projects and programmes in developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change. The Adaptation Fund is financed by a 2% levy on CERs issued by the CDM.

Importance

- Carbon credits offer a way to reward the industries and other sectors that have developed practices involving technological innovations to reduce emissions. These also help **achieve climate targets.**
- Last year, the global carbon credits market rose by 164 per cent and is expected to cross $100 billion by 2030.

Need to develop Carbon Credit Market in India

- India is planning to focus on carbon credit since the central government declared its objectives to achieve Net Zero by 2070.
- Under the updated NDCs, India is committed to reducing the emissions intensity of its gross domestic products by 45 per cent from 2005 levels by 2030. India has also pledged to achieve 50 per cent of its cumulative electric power installed capacity from non-fossil fuel sources of energy by 2030.
- The Lok Sabha rightly passed the **Energy Conservation Amendment bill in August 2022**, paving the way for the formation of a carbon credit market.
- India is on the path to establishing a carbon market at the national level beginning with the voluntary carbon market and then moving on to a compliance-based market.

Significance

- Enabling the carbon market at the domestic level will help organisations in the country trade in their carbon credits effectively. This, in turn, will speed up the energy transition objectives of the country for climate change mitigation.
- Carbon markets will open up new avenues for organisations that are engaged in developing, trading and consulting carbon credits, while stunting the growth of fossil-fuel generation capacities.
- Carbon credits will help developing countries like India carry out economic activities, while keeping the country's carbon goals in perspective.

- Carbon markets will play a key role in the **drive towards decarbonisation, encouraging the reduction of emissions through various schemes in the short term with an ultimate goal of achieving Net Zero in the long term.** The effects of climate change reduction should be favorable to sectors such as renewable energy, energy efficiency, transportation, waste, afforestation and reforestation.
- The carbon credits market favoured by appropriate regulations and policy will help in the creation of suitable opportunities.

PAT SCHEME

In India, the clean development mechanism under the Kyoto Protocol provided a primary carbon market for the players. The secondary carbon market is covered by the perform-achieve-trade scheme (which falls under the energy efficiency category) and the renewable energy certificate. The insight gained from each of the schemes will prove to be instrumental in the creation of a national carbon market.

The Perform, Achieve and Trade (PAT) Scheme is a programme **launched by the Bureau of Energy Efficiency (BEE)** to reduce energy consumption and promote enhanced energy efficiency among specific energy intensive industries in the country.

Under this scheme, reductions in specific energy saving targets are assigned to Designated Consumers (DCs) for a three-year cycle. The target reduction for each DC is based on their current levels of energy efficiency, so that energy efficient DCs will have lower target of percentage reduction, as compared to less energy efficient DCs which will have higher targets. While calculating the specific energy consumption "gate-to-gate" approach is adopted, thereby including all energy consumption against the total production.

KUNMING-MONTREAL AGREEMENT / GS-III ENVIRONMENT & ECOLOGY

Context

- The 15th Conference of Parties (COP15) to the UN Convention on Biological Diversity (CBD) adopted the Kunming-Montreal Global Biodiversity Framework (GBF). The framework has 23 targets that the world needs to achieve by 2030.

Details

- The targets are ambitious, considering that biodiversity is in a poor state. In 2020, the world had failed to meet the last set of targets, the Aichi Targets. Countries would need to ensure success this time round.
- Due to the COVID-19 pandemic, adoption of the new targets is already delayed by two years leaving lesser time for the countries to achieve the targets.
- COP15 had representatives of 188 governments on site and agreed on the framework that hopes to arrest the ongoing loss of terrestrial and marine biodiversity.
- Clear indicators to measure progress have been set to avoid the failure as seen in the Aichi Targets.
- The countries will monitor and report every five years or less on a large set of indicators related to progress.
- The CBD will combine national information submitted by late February 2026 and late June 2029 into global trend and progress reports.
- The Global Environment Facility has been requested to establish a Special Trust Fund to support the implementation of the Global Biodiversity Framework ("GBF Fund"). This is to ensure successful implementation.
- Delegates have agreed to establish within the GBF a multilateral fund for the equitable sharing of benefits between providers and users of digital sequence information on genetic resources (DSI), to be finalised at COP16 in Türkiye in 2024.
- Despite an objection from the Democratic Republic of Congo, which is home to lush tracts of rainforest, the Chinese presidency and Canadian host government declared the deal approved.

Conservation, Protection and Restoration

- Delegates committed to protecting 30% of land and 30% of coastal and marine areas by 2030, fulfilling the deal's highest-profile goal, known as 30-by-30.
- Indigenous and traditional territories will also count toward this goal, as many countries and campaigners pushed for during the talks.
- The deal also aspires to restore 30% of degraded lands and waters throughout the decade, up from an earlier aim of 20%.
- And the world will strive to prevent destroying intact landscapes and areas with a lot of species, bringing those losses "close to zero by 2030".

Money for Nature

- Signatories aim to ensure $200 billion per year is channelled to conservation initiatives, from public and private sources.
- Wealthier countries should contribute at least $20 billion of this every year by 2025, and at least $30 billion a year by 2030.
- This appeared to be the Democratic Republic of Congo's main source of objection to the package.

Big Companies Report Impacts On Biodiversity

- Companies should analyse and report how their operations affect and are affected by biodiversity issues. The parties agreed to large companies and financial institutions being subject to "requirements" to make disclosures regarding their operations, supply chains and portfolios. This reporting is intended to progressively promote biodiversity, reduce the risks posed to business by the natural world, and encourage sustainable production.

Harmful Subsidies

- Countries committed to identify subsidies that deplete biodiversity by 2025, and then eliminate, phase out or reform them. They agreed to slash those incentives by at least $500 billion a year by 2030, and increase incentives that are positive for conservation.

Pollution and Pesticides

- One of the deal's more controversial targets sought to reduce the use of pesticides by up to two-thirds.
- But the final language to emerge focuses on the risks associated with pesticides and highly hazardous chemicals instead, pledging to reduce those threats by "at least half", and instead focusing on other forms of pest management.
- Overall, the Kunming-Montreal agreement will focus on reducing the negative impacts of pollution to levels that are not considered harmful to nature, but the text provides no quantifiable target here.

Monitoring and Reporting Progress

- All the agreed aims will be supported by processes to monitor progress in the future, in a bid to prevent this agreement meeting the same fate as similar targets that were agreed in Aichi, Japan, in 2010, and never met.
- National action plans will be set and reviewed, following a similar format used for greenhouse gas emissions under U.N.-led efforts to curb climate change.
- Some observers objected to the lack of a deadline for countries to submit these plans.

MUST READ:
https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf

MOUNT SEMERU — PLACES IN NEWS

Context

- Indonesia's Mount Semeru erupted on December 4 spewing hot ash clouds a mile into the sky.

Details

- The Semeru is an **active stratovolcano located in East Java, Indonesia**.
- It is **located in a subduction zone**, where the Indo-Australian plate subducts under the Eurasia plate. It is the **highest mountain on the island of Java.**
- **Semeru** - the tallest mountain on the island of Java **contains the active Jonggring-Seloko vent at the Mahameru summit.**
- **Semeru**, also known as Mahameru, has erupted numerous times in the past 200 years.

GREAT BARRIER REEF — PLACES IN NEWS

Context

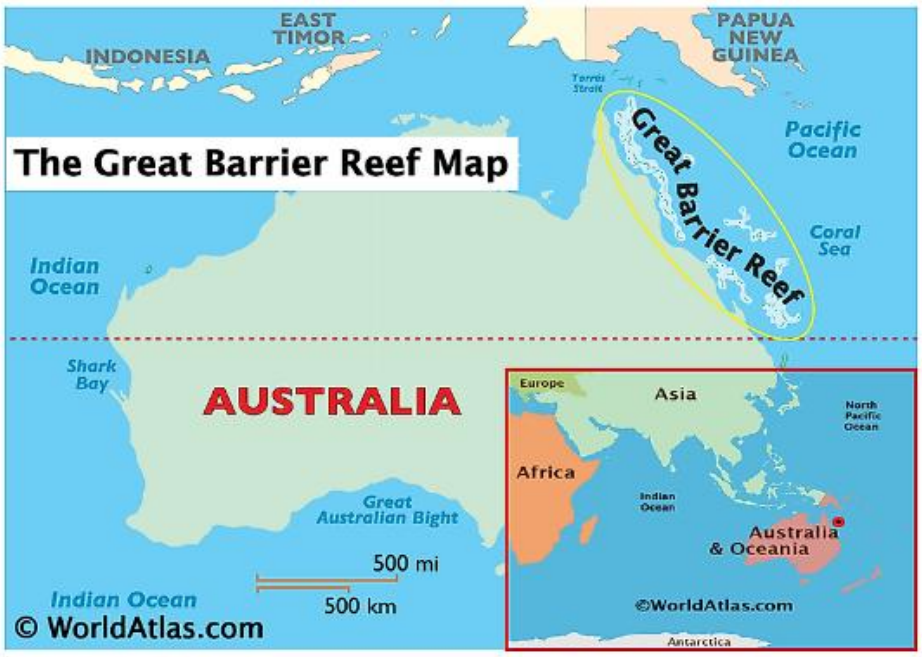
- Australia's Great Barrier Reef should be listed as a world heritage site that is "in danger", a UN panel recommended.

Findings of UN Panel

- The world's biggest coral reef ecosystem was significantly impacted by climate change and warming of oceans.
- Frequent bleaching events are threatening the reef, including four over the last seven years and the first during a La Nina phenomenon, which typically brings cooler temperatures, this year. Bleaching happens when the water warms too much, causing corals to expel the colourful algae living in their tissues and turn white.
- The resilience of the (reef) to recover from climate change impacts is substantially compromised.

About Great Barrier Reef

- The Great Barrier Reef is the **world's largest coral reef system composed of over 2,900 individual reefs and 900 islands** stretching for over 2,300 kilometres.
- The reef is **located in the Coral Sea, off the coast of Queensland, Australia**, separated from the coast by a channel 100 miles wide in places and over 200 feet deep.
- The **Great Barrier Reef can be seen from outer space and is the world's biggest single structure made by living organisms**. This reef structure is composed of and built by billions of tiny organisms, known as coral polyps.
- It supports a wide diversity of life and was **selected as a World Heritage Site in 1981.**



- The Queensland National Trust named it a **state icon of Queensland in 2006.**
- A large part of the reef is **protected by the Great Barrier Reef Marine Park,** which helps to limit the impact of human use, such as fishing and tourism.
- Other environmental pressures on the reef and its ecosystem include runoff, climate change accompanied by mass coral

bleaching, dumping of dredging sludge and cyclic population outbreaks of the crown-of-thorns starfish.

- The Great Barrier Reef has long been known to and **used by the Aboriginal Australian and Torres Strait Islander peoples**, and is an important part of local groups' cultures and spirituality.

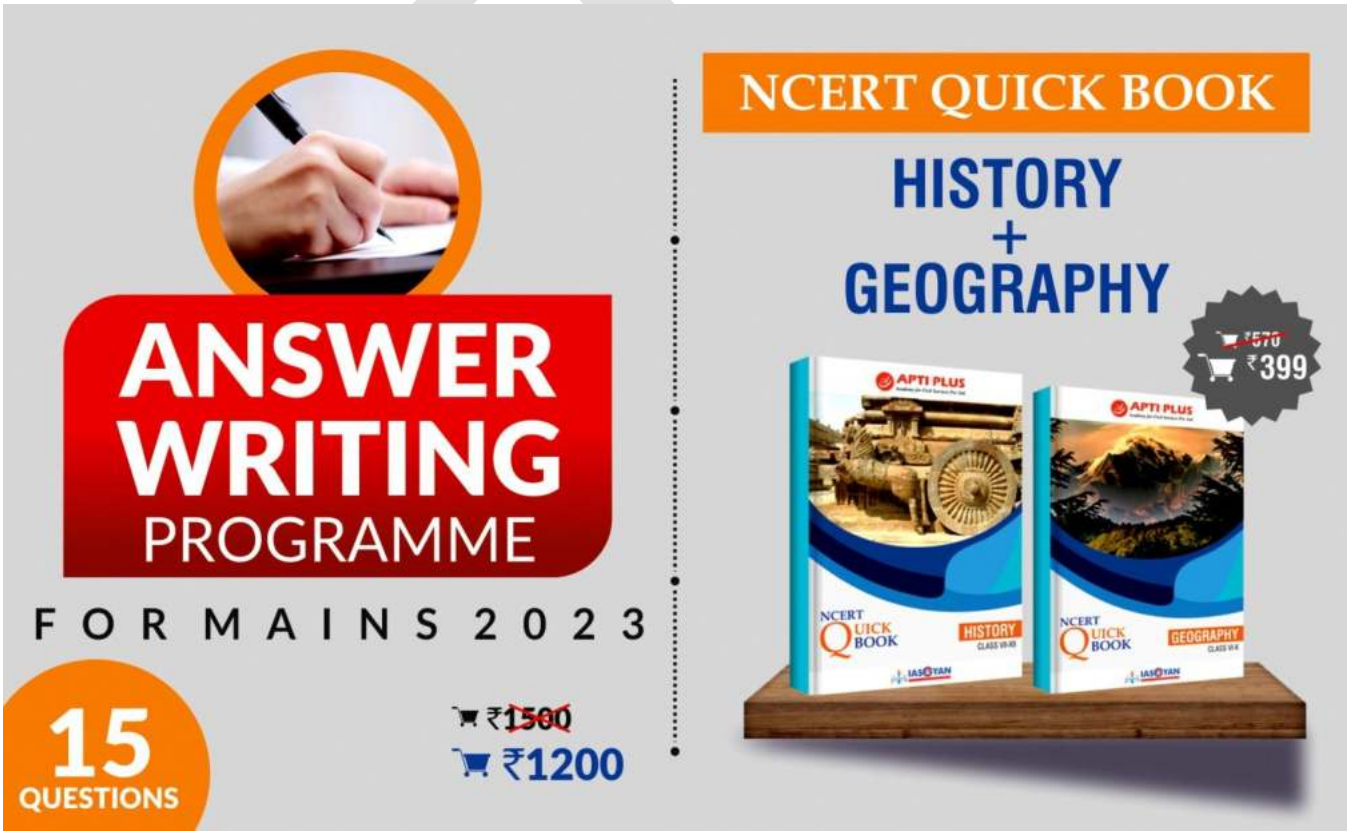
OKAVANGO DELTA — PLACES IN NEWS

Context

- Oil companies are threatening the Okavango biodiversity hotspot in an effort to drill for oil.

About Okavango Delta

- The Okavango Delta is **a large, flat wetland in northern Botswana which covers thousands of square kilometers of the Kalahari Desert**.
- The Okavango Delta was **formed about 50,000 years ago**, when a massive earthquake in Southern Africa caused the Okavango River to spill 11 trillion litres of water into the desert.
- All the water of Okavango Rover reaching the delta is ultimately evaporated and transpired a nd does not flow into any sea or ocean. Each year, about 11 cubic kilometers of water spread over the 6,000–15,000 km² area. **Some floodwaters drain into Lake Ngami.**
- The **Moremi Game Reserve, a national park, is on the eastern side of the delta.**
- In 2014, the **Okavango Delta became the 1000th site to be officially inscribed on the UNESCO World Heritage List**.
- The delta is **home to Africa's Big Five wildlife species: Savanna elephants, Cape buffaloes, rhinos, lions, and leopards.** There are also giraffes, zebras, antelopes, pangolins, 400 bird species, and over 1,000 plant species.



SHORT NEWS ARTICLES

GS-I

CULTURE & HISTORY

Hornbill Festival

Context

- The much awaited 23rd edition of the Hornbill Festival of Nagaland will start today, December 1, at Naga Heritage Village, Kisama.

Details:

About the Festival:

- It is also called the 'Festival of Festivals'.
- Organized every year in the first week of December.
- It hosts a colorful mixture of dances, performances, crafts, parades, games, sports, food, fairs and religious ceremonies.
- It highlights the tradition of tribal people and boosts the state's tourism potential.
- It reinforces Nagaland's identity as a unique state in India's federal union.
- It fosters understanding of Nagaland's resourceful architecture and its ethnic cuisine.
- Great Hornbill:
- **IUCN Red List Status-** Vulnerable
- Found in the Indian subcontinent and Southeast Asia.
- State bird of Kerala and Arunachal Pradesh.
- Schedule I of the Wildlife Protection Act, 1972

Do you know?

Hornbills were once hunted for their beaks. They were used to make the traditional headgears by the Nyishi tribe men. (To symbolize manhood and valor) Hornbills were also hunted for their oil (believed to relieve pain) and for their meat. However, a new conservation movement is in motion to save the fast disappearing hornbills of northeast India. The tribes – who once hunted the exotic birds in large numbers – are now protecting their nests to help their numbers rebound

Festivals of Northeast

Losar	Arunachal Pradesh
Saga Dawa	Sikkim
AmbubachiMela	Assam
Dree Festival	Arunachal Pradesh
MoatsuMong	Nagaland
RassMahutsav	Assam
Cheiraoba	Manipur
Aoling festival	Nagaland
Shillong Autumn Festival	Meghalaya
Lui-ngai-ni	Manipur
Sanken Festival	Arunachal Pradesh
Bihu Festival	Assam
Losoong	Sikkim
Nongkrem Dance Festival	Meghalaya
Anthurium	Mizoram
Kharchi Puja	Tripura
ChapcharKut	Mizoram
Wangala Festival	Meghalaya
Ziro Festival of Music	Arunachal Pradesh
Kang Chingba	Manipur

Myoko Festival	Arunachal Pradesh
Judima Festival	Assam
Yaoshang	Manipur
Torgya Festival	Arunachal Pradesh
DehingPatkai Festival	Assam
Majuli Festival	Assam
Behdienkhlam	Meghalaya
JunbeelMela	Assam

Karthigai festival

Context

- As the MahaDeepam was lit, thousands of devotees occupied every inch of space on the four Mada Streets and Sannithi Street chanting 'Arunchaleshwara' repeatedly. The day-long puja culminated in the lighting of the MahaDeepam atop the Annamalai Hills on the last day of the 10-day festival at the Sri Arunachaleswarar temple.

Details:

- **Tamil Nadu** celebrates Karthigai Deepam as the traditional festival. It is also celebrated in neighboring states like **Kerala, Andhra Pradesh, and Karnataka.**
- It is **very old** and people for a long back have been associated with this auspicious occasion.
- One can find a reference to this festival of lights in the age-old literature of Tamils known as **Ahananuru, a collection of poems.**
- Avaiyyar, a renowned woman of Sangam age also mentions **karthigaiDeepam in her poems.**

Sri Aurobindo Ghosh

Context

- **Prime Minister Narendra Modi participated in a programme commemorating Sri Aurobindo's 150th birth anniversary on December 13, 2022. During the Programme PM released a commemorative coin and postal stamp in honour of Sri Aurobindo.**

Details:

About Sri Aurobindo

- Sri Aurobindo (1872 –1950) was an Indian philosopher, yoga guru, poet, and Indian nationalist.
- He was also a journalist, **editing newspapers such as BandeMataram**.
- He joined the Indian movement for independence from British colonial rule, **until 1910** and then became a spiritual reformer, introducing his visions on human progress and spiritual evolution.

Contribution

- He was involved in AnushilanSamiti.
- He was arrested in the aftermath of a number of bombings linked to his organization in a public trial where he faced charges of treason for Alipore Conspiracy.
- However Sri Aurobindo could only be convicted and imprisoned for writing articles against British colonial rule in India.
- During his stay in the jail, he had mystical and spiritual experiences, after which he moved to Pondicherry, leaving politics for spiritual work.
- At Pondicherry, Sri **Aurobindo developed a spiritual practice he called Integral Yoga**.
- In 1926, **with the help of his spiritual collaborator, MirraAlfassa (referred to as "The Mother"), Sri Aurobindo Ashram was founded.**
- **Works:** His main literary works **are The Life Divine**, which deals with the philosophical aspect of Integral Yoga; **Synthesis of Yoga,** which deals with the principles and methods of Integral Yoga; and **Savitri: A Legend and a Symbol,** an epic poem.

Kashi-Tamil Sangamam

Context

- Uniting India spiritually, culturally and historically has been one of the main missions of Prime Minister Narendra Modi. A sterling example of this is the month-long "Kashi-Tamil Sangamam", which culminated on December 16 in the world's oldest living city — Kashi, also known as Varanasi.

Details

- **The broader objective is to bring the two knowledge and cultural traditions (of the North and South) closer, create an understanding of our shared heritage and deepen the people-to-people bond between the regions.**
- This is in sync with the National Education Policy, 2020 which emphasises "on nurturing a generation that is modern and in

sync with the 21st-century mindset, while being rooted in the Indian culture and ethos

- BHU and IIT-Madras are knowledge partners for the event, and the Ministries of Culture, Tourism, Railways, Textiles and Food Processing have been roped in as stakeholders, besides the government of Uttar Pradesh and the Varanasi administration.
- The connection between the two centres of knowledge (Kashi and Kanchi) is evident in the similar themes in literature, and the presence of the name Kashi in every village in Tamil Nadu.
- Besides the KasiViswanathar temple in Tenkasi, there are hundreds of Shiva temples in Tamil Nadu that bear the name of Kashi.
- **People from Rameswaram would take a dip in the Kotiteertha (in the temple) before visiting Kashi for darshan; and they would bring back (Ganga) water from Kashi for abhiseka at the temple in Rameswaram. Only this would complete their pilgrimage at a time when it took six months to travel between Kashi and Rameswaram**
- There was also the connection between the traders dealing in silk saris and textiles from Bananas and Kanchipuram, and architectural, culinary, and other kinds of connections.

Panini

Context

- In his PhD thesis, Cambridge scholar Dr Rishi Rajpopat**claims to have solved Sanskrit's biggest puzzle—a grammar problem found in the 'Ashtadhyayi', an ancient text written by the scholar Panini towards the end of the 4th century BC.** Experts are calling the discovery revolutionary, as it may allow Panini's grammar to be taught to computers for the first time.

Details

- Written more than 2,000 years ago, the **'Ashtadhyayi' is a linguistics text that set the standard for how Sanskrit was meant to be written and spoken.**
- **It delves deep into the language's phonetics, syntax and grammar, and also offers a 'language machine', where you can feed in the root and suffix of any Sanskrit word, and get grammatically correct words and sentences in return.**
- To ensure this 'machine' was accurate, Panini wrote a set of 4,000 rules dictating its logic. But as scholars studied it, they found that two or more of the rules could apply at the same time, causing confusion**. To resolve this, Panini had provided a 'meta-rule' (a rule governing rules), which had historically been interpreted as: 'In the event of a conflict between two rules of equal strength, the rule that comes later in the serial order of the 'Ashtadhyayi' wins'.**
- However, following this interpretation did not solve the machine's problem. It kept producing exceptions, for which scholars had to keep writing additional rules. This is where Dr Rishi Rajpopat's discovery came through.
- In his thesis titled 'In Panini We Trust', DrRajpopat took a simpler approach, arguing that the meta-rule has been wrongly interpreted throughout history; what Panini actually meant, was that for rules applying to the left and right sides of a word, readers should use the right-hand side rule.
- Using this logic, DrRajpopat found that the 'Ashtadhyayi' could finally become an accurate 'language machine', producing grammatically sound words and sentences almost every time.
- The discovery now makes it possible to construct millions of Sanskrit words using Panini's system—and since his grammar rules were exact and formulaic, they can act as a Sanskrit language algorithm that can be taught to computers.

Panini, the 'father of linguistics'

- Panini probably lived in the 4th century BC, the age of the conquests of Alexander and the founding of the Mauryan Empire, even though he has also been dated to the 6th century BC, the age of The Buddha and Mahavira.
- He likely lived in Salatura (Gandhara), which today would lie in north-west Pakistan, and was probably associated with the great university at Taksasila, which also produced Kautilya and Charaka, the ancient Indian masters of statecraft and medicine respectively.
- By the time Panini's great grammar, the 'Ashtadhyayi', or 'Eight Chapters', was composed, Sanskrit had virtually reached its classical form — and developed little thereafter, except in its vocabulary.
- Panini's grammar, which built on the work of many earlier grammarians, effectively stabilised the Sanskrit language.
- Later Indian grammars such as the Mahabhasya of Patanjali (2nd century BC) and the KasikaVritti of Jayaditya and Vamana (7th century AD), were mostly commentaries on Panini.

Palm-Leaf Manuscript Museum

Context

- **Kerala Chief Minister will inaugurate a palm-leaf manuscript museum with modern audio-visual technology at the renovated Central Archives, Fort in Thiruvananthapuram.**

Details

- The ₹3-crore museum has eight theme-based galleries where select manuscripts from one of the biggest palm-leaf collections in the country will be displayed.

- **The manuscripts in ancient scripts such as Vattezhuthu, Kolezhuthu, Malayanma, and ancient Tamil and Malayalam are present in the museum.**
- The manuscripts which delve into aspects as diverse as tax, administration, and trade to education, prisons, and festivals in the erstwhile Travancore, Kochi, and Malabar provide a fascinating glimpse of history that is rarely accessible to the common man.
- **Besides palm-leaf manuscripts, scrolls, bamboo splints, and copper plates are included in the collection.**

Dokra Metal Crafts

Context

- **Lalbazar, on the boundary with Jharkhand, is becoming a hub for dokra metalcraft.**

Details

- **Dhokra is a form of ancient bell metal craft practiced by the Ojha metal smiths living in states like Jharkhand, Chhattisgarh, Odisha, West Bengal and Telangana.** However, the style and also the workmanship of this artisan community varies in different states.
- Dhokra or Dokra, is also known as bell metal craft.
- Its documented history is about 5,000 years old.
- Making dokra art is a difficult process. Each figurine takes about a month to make.
- Dokra artifacts are mainly made in brass and are highly unique wherein the pieces do not have any form of joints. The whole object is fully handcrafted.
- **The method of making Dokra is done by combining the metallurgical skills with that of the lost wax technique.** There are two process of lost wax casting. The first one is Solid casting which is the method followed in the South and hollow casting, practiced in other states.

Srinivasa Ramanujan

Context

- National Mathematics Day is celebrated every year on December 22 to mark the birth anniversary of legendary mathematician, Srinivasa Ramanujan. He was born in 1887 in Erode, Tamil Nadu in a humble Iyengar Brahmin family.

Details

- Ramanujan was a self-taught mathematician and is considered one of the greatest Indian mathematicians of all time.
- During his short but impactful lifespan, Ramanujan worked on theorems that seemed impossible to solve. He is known for the work he did in the areas of continued fractions, Riemann series, elliptic integrals, hypergeometric series and functional equations of the zeta function.
- On May 2, 1918, he became a fellow of the Royal Society in London, one of youngest people to receive such an honour. Ramanujan died on April 26, 1920 at the age of 32.
- In 2012, former Prime Minister Manmohan Singh declared December 22 as National Mathematics Day and the year (2012) was celebrated as the National Mathematics Year. The 2012 India stamp also featured SrinivasaRamanujan. On this day in 2017, the Ramanujan Math Park was opened in Kuppam, in Chittoor, Andhra Pradesh.
- There is no theme for National Mathematics Day 2022. The day is celebrated with the aim to make people aware of the importance of mathematics and advancements and developments made in the field.

Srinivas Ramanujan (1887-1920):

- SrinivasaAiyangarRamanujan (FRS) better known as SrinivasaIyengarRamanujan, one of India's greatest mathematical genius.
- In 1913 he began a correspondence with the British mathematician Godfrey H. Hardy which led to a special scholarship from the University of Madras and a grant from Trinity College, Cambridge.
- In 1918 he was elected to the Royal Society of London.
- Ramanujan was one of the youngest members of Britain's Royal Society and the first Indian to be elected a Fellow of Trinity College, Cambridge University.
- Contributions to Mathematics:
- Formulas and Equations: Ramanujan compiled around 3,900 results consisting of equations and identities. One of his most treasured findings was his infinite series for Pi. He gave several formulas to calculate the digits of Pi in many unconventional ways.
- Game Theory: He discovered a long list of new ideas to solve many challenging mathematical problems, which gave a significant impetus to the development of game theory. His contribution to game theory is purely based on intuition and natural talent and remains unrivalled to this day.
- Ramanujan's Book: One of Ramanujan's notebooks was discovered by George Andrews in 1976 in the library at Trinity College. Later the contents of this notebook were published as a book.
- Ramanujan number: 1729 is known as the Ramanujan number. It is the smallest number which can be expressed as the sum of

two different cubes in two different ways.

- Other Contributions: Ramanujan's other notable contributions include hypergeometric series, the Riemann series, the elliptic integrals, mock theta function, the theory of divergent series, and the functional equations of the zeta function.

Geoglyphs

Context

- The site proposed for a mega oil refinery in Barsu village of Maharashtra's Ratnagiri district is at the centre of a row over whether it might damage ancient rock carvings found in the area.

Details

- **The rock art, or petroglyphs, estimated to be 20,000 years old and classified as protected monuments by the state archaeology department and the Archaeological Survey of India, have been added to the tentative list of UNESCO's world heritage sites.**
- Known as Ratnagiri oil refinery and petrochemical complex, the project is being developed by Ratnagiri Refinery & Petrochemicals Limited, a joint venture of Indian Oil Corporation Ltd, Bharat Petroleum Corporation Ltd and Hindustan Petroleum Corporation Ltd.
- The petroglyphs can be saved if the project is shifted 5-6 kilometres away from the sites.
- **More than 250 petroglyphs have been identified in the area where the petrochemical refinery will be built.**
- **Petroglyphs and geoglyphs are considered assets across the world and cannot be shifted.**

About

- **Petroglyphs are drawn by removing part of a rock surface by incising, picking, carving or abrading. Ratnagiri district has more than 1,500 petroglyphs, also called katalshilpa, spread across 70 sites.**
- The carvings are in the shape of human figures, birds, animals and geometric forms, though they vary in shape and size from site to site.
- Seven sites in Ratnagiri district (Ukshi, Jambharun, Kasheli, RundheTali, Devihsol, Barsu and DevacheGothane), Kudopi village in Sindhudurg district, and nine sites at Pansoimol in Goa have been added to the tentative list of UNESCO's world heritage sites.
- A petroglyph is usually a prehistoric carving in a rock. Prehistory refers to the period of time before civilization and writing. There are only archeological sources available for prehistoric period which includes stone and bone tools, rock arts etc.
- The term rock art includes pictographs (paintings on rocks) and petroglyphs which are carved into the flat, open rock surface gives them a scale and look that is unique.
- **Prominent petroglyph and rock art sites in India that could be contemporary to this period are the Bhimbetka rock shelters in Madhya Pradesh, rock carvings in Mirzapur in Uttar Pradesh, petroglyphs from the Tindivanam and Villupuram districts in Tamil Nadu and Unakoti in Tripura.**
- **The carvings on laterite stone make the petroglyphs in Ratnagiri region unique, as the carvings discovered in other sites around India are on granite and sandstone.**

GEOGRAPHY

Cold Wave

Context

- Cold wave conditions will continue in North India -India Meteorological Department.

What is a cold wave?

- The IMD defines a cold wave qualitatively as "a condition of air temperature which becomes fatal to the human body when exposed."
- The IMD records a cold wave **when**
- **the minimum temperature is equal to or less than 10 degree Celsius at a weather station in the plains,**
- **and the min temperature is 4.5 degrees to 6.4 degrees below the normal temperature for that period.**
- A cold wave may also be recorded at a station in the plains when the minimum temperature is less than or equal to 4 degree Celsius.
- For hilly regions, a cold wave is declared when the minimum temperature is less than or equal to 0 degree Celsius and the minimum temperature is 4.5 degrees to 6.4 degrees below the normal.
- The 'normal' temperature is calculated for every five days by taking the average temperature for these days over the past 30 years.

Cause of this cold wave

- Cold waves usually occur from mid-December to the end of February.
- According to the IMD, the factors that bring cold waves to India include **the movement of cold air masses brought about by upper-level winds.**
- They can be triggered by strong **westerly winds approaching northwest India and transporting cold air towards the southeast direction.**
- Build-up of an extended area of relatively high pressure over northwest Asia can also bring cold waves.

Western Disturbance and cold wave

- A western disturbance as a cyclonic circulation lies over north Pakistan and adjoining Jammu and Kashmir.
- Western disturbances are storms that originate in the Mediterranean region and bring winter rainfall to northwest India.
- After this western disturbance moves, there is a brief gap. In this gap of five to six days, the IMD expects strong northwesterly and westerly cold winds over north India.

Coastal Red Sand Dunes

Context

- The city of Visakhapatnam is blessed with a number of sites that have geological importance. One among them is the coastal red sand dunes, popularly known **as 'ErraMattiDibbalu'.**

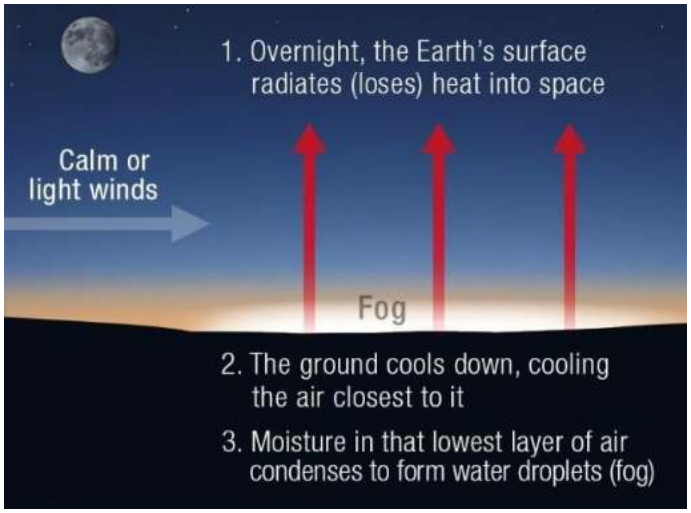
ErraMattiDibbalu

- **About:ErraMattiDibbalu** also called as **Red Sand Hills**, a notified National Geo-heritage Monument, is situated at the outskirts of Visakhapatnam City.
- **Location:**It is located very near to the Bay of Bengal and is one of Visakhapatnam's many heritage sites. Located near Bheemunipatnam, the **ErraMattiDibbalu site is more than 12,000 years old.**
- **Formation:** About 18,500 years ago, a major climatic shift took place during the Glacial Maximum Age. This phenomenon, interestingly, is linked to the formation of the red sand dunes. During that period, the sea had receded about 50 kilometres from the present coastline, with a vertical drop of 120 metres. As a result, the continental shelf was exposed and sand was transported and deposited on land," explains Reddy. Incidentally, the sand was never the shade of red (as we see it today) back then. "The red colour is a result of geo-chemical alterations that happened over the years.
- **Significance:** Sand dunes, like other geologically-significant sites in and around Visakhapatnam, are Paleo-environmental indicators and these can give vital clues to the past and the future for scientists.

Fog

Context

- Dense fog has enveloped north-western India, including Delhi, Punjab, Haryana, parts of Uttar Pradesh, and parts of Rajasthan.



Fog

- **Fog** is a visible **aerosol** consisting of tiny water droplets or ice crystals suspended in the air at or near the Earth's surface.
- Fog can be considered a type of **low-lying cloud** usually resembling stratus, and is heavily influenced by nearby bodies of water, topography, and wind. Fog affects many human activities, such as shipping, travel etc.

How does fog form?

- Fog forms like clouds do — **when water vapour condenses.** The presence of moisture and a fall in the temperature are key factors for the formation of fog. With the land surface cooling down at night, the air close to the surface also cools down.
- Since cooler air cannot hold as much moisture as warm air, t he water vapour in the air condenses to form fog.
- Fog begins to form in the early hours of the morning, when the temperature is at its lowest.
- Fog can have "**high spatial variability**", and its intensity can depend on factors like humidity, wind, and temperature.
- Areas near water bodies, for instance, may see denser fog because of the higher humidity.

Fog in Indo-Gangetic region

- Moisture is available in the atmosphere and winds are light at lower tropospheric levels over Indo-Gangetic plain. Due to clear sky and overnight cooling, the surface of earth down rapidly and air near the Earth's surface also become colder and heavier. The moisture available in the air condense and overcome fog.

- Western disturbances, which are storms that originate in the Mediterranean Sea, bring moisture-bearing winds to northwest India. This can result in increased moisture levels over the region. In the absence of western disturbances, local moisture sources like water vapour from rivers and soil moisture can also cause fog.
- According to a note issued by the IMD, **the Indo Gangetic Plain is most vulnerable to fog occurrences**, with major, weeks-long spells of dense fog in the months of December and January. These foggy spells are **linked to wind and temperature patterns.**

Link between pollution levels and fog

Radiation Fog

- As temperature declines, local wind speed also falls. The inversion layer comes down and vertical mixing reduces. This results in fog formation and particulate matter hangs on the boundary layer, increasing pollution levels. Once the temperature increases during the day, the fog dissipates.

Advection Fog

- Advection fog, occurs when the humidity is much higher. These fog episodes last longer and secondary particulate formation then begins leading to rapid build-up of pollutants. Lower temperatures across the Indo Gangetic Plain in January can cause such fog episodes.

GS-II
POLITY

Kangaroo Court

In News

- In Tamil Nadu, a village community court imposed a fine of Rs 25,000 on the couple and family members who accepted their love followed by court marriage.
  - The family sold off their only milch cow to pay off the fine plus ₹600 as thappu ('penalty upon penalty').
  - The cow was their only source of income. After they sold the cow to pay the fine, they work on construction sites to earn a living.
- The family attempted self-immolation outside the Collectorate office, calling attention to the continuing Kangaroo Court.

Kangaroo Court

- The 'kangaroo court' runs on patriarchal diktat. **Its administrators claim to speak for the community with the stated aim of exercising social control.** Men set the agenda and women are typically disallowed from participating.
- **It is defined as an unofficial court managed by a group of people** to try someone as guilty even without good evidence.
- Most of the time, **they have political patronage and are supported by the political class due to vote bank politics.**
- It ignores acknowledged standards of law or justice, undervalues democracy and is against constitutional values.
- The first kangaroo courts originated in the United States in 1849.
  - It was first mentioned in 1853 in a book in the USA.
- **It undermines the importance of the Judiciary and poses a serious challenge to the law and order situation.**
- It also goes against the principle of the "Rule of Law".

Way Forward

- Illiteracy, misleading information, Orthodox mindset of the people are the main reasons behind these undemocratic and inhuman practices.
- Strict implementation of the law and promotion of education and social awareness could help us to get rid of this social evil, and promote equality and rule of law in our society.

Personality Rights

In News

- The **Delhi High Court passed a provisional order to stop the unlawful use of Bollywood star Amitabh Bachchan's name, image and voice**.
  - The court prohibited persons at large from violating the personality rights of the actor.

About Personality rights

- **Personality rights refer to the right of a person to protect his/her personality under the right to privacy or property.**
  - Personality rights recognize a person as a physical and spiritual-moral being and guarantee his enjoyment of his sense of existence.
  - **Personality right is the right of an individual, to control the use and commercialization of their identity** which is their personage in the form of voice, signature, likeness, appearance, silhouette, feature, face, expression, gesture, mannerism,

and distinctive character.

- **Why Important?**
  - These rights are important to celebrities as their names, photographs or even voices can easily be misused in various advertisements by different companies to boost their sales. Therefore, renowned personalities/celebrities must register their names to save their personality rights.
  - Several unique personal qualities contribute to the making of a celebrity. All of these features need to be protected, such as name, nickname, stage name, picture, likeness, image and any identifiable personal property.

- **Personality rights consist of two types of rights;**
  - The right of publicity, or the right to keep one's image and likeness from being commercially exploited without permission or contractual compensation, which is similar (but not identical) to the use of a trademark.
  - The right to privacy or the right to not have one's personality represented publicly without permission.

Legal Status in India

- Under common law jurisdictions, publicity rights fall into the realm of the 'tort of passing off'.
  - Passing off takes place when someone intentionally or unintentionally passes off their goods or services as those belonging to another party.
- **Publicity rights are governed by statutes like the Trade marks Act 1999 and the Copyright Act 1957.**
  - The Indian Copyright Act does not define the word 'personalities' or 'celebrities'. However, the Delhi High Court in the case of Titan Industries Ltd. vs M/S Ram kumar Jewellers in 2012 defined the term 'celebrity' as a person who is famous or merely a person who many people talk about or know about.
- The Delhi High Court in 2011 observed in the case of Arun Jaitley vs Network Solutions Private Limited and Ors., in which the Court stated that the "name also falls in the category of Publicity rights".

Ladakh's Demand for the Sixth Schedule

In News

- In the Lok Sabha, on the question of the inclusion of Ladakh under the 6th Schedule of the Indian Constitution, the Union Home Ministry has informed the parliament that the main objective of the inclusion of tribal populations under the 6th schedule is to ensure their overall socio-economic development, and the Ladakh Union Territory's administration "has already been taking care of since its creation".

Details

- On 5th August 2019, **the former State of Jammu & Kashmir was bifurcated into two Union Territories; Jammu & Kashmir, and Ladakh, the latter without a Legislative Assembly.**
  - Since then several political groups have been demanding that land, employment, and the cultural identity of Ladakh, should be protected under the 6th Schedule.
- The **6th Schedule protects tribal populations, providing autonomy through the creation of Autonomous Development Councils,** which can frame laws on land, public health and agriculture.
  - **At present, 10 autonomous councils exist in Assam, Meghalaya, Tripura and Mizoram.**
- According to the 2011 Census, the tribal population in the Union Territory of Ladakh is 79.61% of the total population.
  - The Parliamentary Standing Committee on Home Affairs recommended granting special status to the Union Territory of Ladakh considering the developmental requirements of the tribal population.

Autonomous District Councils

- **The 6th Schedule of the Indian Constitution deals with the administration of the tribal areas in the 4 northeastern states of Assam, Meghalaya, Tripura and Mizoram as per Article 244.**
- **The 6th Schedule of the Indian Constitution allows for the formation of autonomous administrative divisions** which have been given autonomy within their respective states.
  - Each autonomous district has a district council **consisting of 30 members, of whom 4 are nominated by the Governor** and the remaining 26 are elected based on adult franchise.

  - There shall be a separate Regional Council for each area constituted as an autonomous region.
- The **State Governor is authorized to increase or decrease the areas or change the names of the autonomous districts.**
- Executive powers of the State extend to 6th Scheduled areas concerning their administration**.**
- The **acts of the Parliament or the state legislature do not apply to these autonomous districts and autonomous regions or apply with specified modifications and exceptions**.
- These **Autonomous Councils have been granted wide civil and criminal judicial powers,** such as establishing village courts etc.
  - The jurisdiction of these councils is under the **jurisdiction of the concerned High Court.**

Tribal Area

- The **Indian Constitution states two types of areas:**
  - Scheduled Areas in terms of the 5th Schedule of the Constitution.
  - Tribal Areas in terms of the 6th Schedule.
- "The "Tribal Areas" are also mentioned under Article 244(2) of the Constitution.
- **For the declaration of Scheduled Areas, the criteria followed are:**
  - The predominance of the tribal population.
  - Closeness and reasonable size of the area.
  - Presence of a viable administrative unit such as a district, block or taluk.
  - Economic backwardness of the area as compared to neighbouring areas.

Eastern Zonal Council

In News

- The **Union Home Minister chaired the Eastern Zonal Council meeting in Kolkata, West Bengal.**
- **The meeting was attended by;**
  - Chief Ministers of West Bengal and Jharkhand.
  - The Deputy Chief Minister of Bihar.
  - Ministers from Odisha
  - Senior officials of the Ministry of Home Affairs and the States under the Council.
  - Chief Secretaries of Eastern Zonal Council States, Union Home Secretary, Secretary Inter-State Council Secretariat and other Senior officials of State and Central Ministries and Departments.
- The council discussed several issues of common interests in areas of security, road, transport, industries, water, fishing, power, and economic and social planning.

Zonal Councils

- Zonal Councils **aim to promote collaboration and coordination among states, UTs, and the Union**.
- They discuss and give recommendations on several topics.
- They are **only consultative and deliberative bodies.**
- The **States Reorganization Act of 1956 established these statutory entities**.
- The country is divided into **5 zones** by the Act:
  - Northern Zone
  - Central Zone
  - Eastern Zone
  - Western Zone
  - Southern Zone
- **Each zonal council is made up of**
  - The Union Home Minister (who acts as a chairman).
  - CM of all States in Zone + 2 other ministers from the states (Each CM acts as a Vice-Chairman by rotation, holding office for 1 year at a time).
  - Administrators of all UTs in the zone.

North-Eastern Council

- A further Act of Parliament, **the North-Eastern Council Act of 1971, established a North-Eastern Council in addition to the previous Zonal Councils.**
- Assam, Manipur, Mizoram, Arunachal Pradesh, Nagaland, Meghalaya, Tripura, and Sikkim are among its members. Its responsibilities are similar to those of zonal councils, with a few exceptions.
- It is required to examine the actions taken by member states to maintain security and public order in the region regularly.

Significance of Zonal council

- Zonal councils **help in designing a collaborative strategy through discussions and exchange of views** between the Union and States on important issues.

- It takes up issues involving the Union and states or between many states.
- The zonal councils **provide a platform for resolving disputes between the Union and the States and among many States.**
- Zonal Meetings are used by the Union, States and Union Territories to share their best practices.
- **Zonal councils also discuss a wide range of issues, including;**
  - Boundary-related disputes.
  - Security.
  - Infrastructure-related matters like road, transport, industries, water, and power.
  - Forests and environment.
  - Housing.
  - Education.
  - Food security
  - Tourism
  - Transport

GOVERNANCE

National Mobile Monitoring System (NMMS)

In News

- The Union government has released guidelines that made digital capture of the attendance of workers employed under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) universal from 1st January 2023.

Background

- Recently the Union government has introduced the mandatory implementation of a national mobile monitoring system for the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).
- The **National mobile monitoring system was initiated to capture attendance through the mobile system at worksites with more than 20 workers**.
  - The **app can record the attendance even if there is no Internet connectivity** and it will get uploaded whenever they reach a place which has the necessary signal strength.
- The new system has **resulted in the delay of wage payments to workers.**
  - According to some social activists, the new system was launched without addressing various technical issues.
  - Many districts are unable to process wage payments.
  - Inability to upload attendance data.
- Critics say that the Union government has implemented these changes unilaterally without studying the ground reality.
- Several Social activists and organizations have requested the Union Rural Development Ministry to withdraw its order to suspend manual attendance for MGNREGS work sites and use a Mobile application for recording attendance.
  - The **Mobile app wants MGNREGA workers to upload two photos daily**.
- They raised concern over the guidelines that made it mandatory to upload two time-stamped photos daily.
  - **Many women from poorer households do not have access to smartphones.**
  - The app has been completely designed in English and there is no technical help available to redress problems.
- **According to the officials this step will;**
  - Promote Transparency and Accountability.
  - Reduce financial mismanagement
  - Curb Corruption
  - Promote rural development
  - Ensure timely payment of wages.

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005

- The MGNREGA is Indian labour law and social security programme that aims to guarantee the 'right to work'.
- It provides a legal right for 100 days of employment in every financial year to at least one member of every rural household whose adult members agree to do unskilled manual work.
- The Ministry of Rural Development is monitoring the implementation of this scheme.
- Women were guaranteed one-third of the jobs made available under the MGNREGA.
- The MGNREGA programme also helps in creating durable assets (such as roads, canals, ponds and wells).
- Work is to be provided within 5 km of workers' residence and minimum wages are to be paid.
- Right to get unemployment allowance in case employment is not provided within 15 days of applying.
- MGNREGA is implemented mainly by gram panchayats. Adult members of rural households submit their details to the Gram Panchayat. The Gram Panchayat registers households after making an enquiry and issues a job card. The job card contains the details of the adult member enrolled and his /her photo
- The involvement of contractors is banned.
- The Social Audit of MGNREGA works is mandatory, which ensures accountability and transparency

SOCIAL JUSTICE

PM Daksh Program

In News

- The Union Minister for Social Justice and Empowerment inaugurated the Divya Kala Mela in Kartavya Path at India Gate, Delhi.
    - The **Divya Kala Mela aims to provide a platform for the products and craftsmanship of Divyang artisans, craftsmen and artisans from across the country.**
- The Minister stated that the government is providing Training in skill upgradation and skill development under the Daksh program.
    - He highlighted that soft loans of Rs 495 crore have been distributed to more than 5 lakh trainees under Daksh.

About PM-DAKSH Yojana

- The Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi **(PM-DAKSH) Yojana was launched in 2021, by the Minister of Social Justice and Empowerment.**
- **It is a National Action Plan for skilling of marginalized persons covering SCs, OBCs, EBCs, DNTs, Sanitation workers including waste pickers**.
- Support artisans to improve their revenue generation capacities within their practising vocations.
- Empower Women to enter into self-employment thereby financially empowering themselves without neglecting their domestic activities.
- Encourage Youth from the target groups to acquire long-term training and specialization in employable vocations giving them better standing in the job market.
- **The Union Minister for Social Justice and Empowerment also launched the 'PM-DAKSH' Portal and 'PM-DAKSH' Mobile App.**

Key Features of the Scheme

- **Beneficiaries between the age of 18-45 years.**
- Free of cost for training, 100% grants by the Government.
- **Support of Rs.1, 000/- to Rs.1, 500/- per month per trainee having 80% and above attendance in short-term and long-term training.**
- Wage compensation @ Rs.3000/- per trainee having 80% and above attendance in Reskilling/Up-skilling.
- Trained candidates will be provided certification after the successful completion of training and assessment.
- Trained candidates will be provided placement after assessment and certification.

INTERNATIONAL RELATIONS

G7's Oil Price Cap and its impact

Context

- The Group of Seven (G7) countries have imposed a cap on Russian seaborne oil prices in an effort to limit Moscow's ability to finance its war in Ukraine.

Details

- The cap, is to be enforced by the G7, the European Union and Australia, in addition to an EU embargo on imports of Russian crude by sea, and similar pledges by the United States, Canada, Japan and Britain.
- Russian oil will only be allowed to be shipped to third-party countries using G7 and EU tankers, insurance companies, and credit institutions if the cargo is bought at or below the price cap.

Russia's repercussion

- Exporting oil and gas to Europe has been a major source of Russian foreign currency earnings since Soviet geologists discovered oil and gas in the swamps of Siberia in the post-World War Two period.
- Russia has said it will not abide by the measure and will not sell oil that is subject to the cap, even if it has to cut production.

How would oil keep flowing to the global economy?

- Universal enforcement of the insurance ban, imposed by the EU and U.K. in earlier rounds of sanctions, could take so much Russian crude off the market that **oil prices would spike, Western economies would suffer,** and Russia would see increased earnings from whatever oil it can ship in defiance of the embargo.
- Russia, the **world's No. 2 oil producer**, has already rerouted much of its supply to India, China and other Asian countries at discounted prices after Western customers shunned it even before the EU ban.

Group of Friends

Context

- **India has recently launched a 'Group of Friends' to promote accountability for crimes against peacekeepers.**

Details

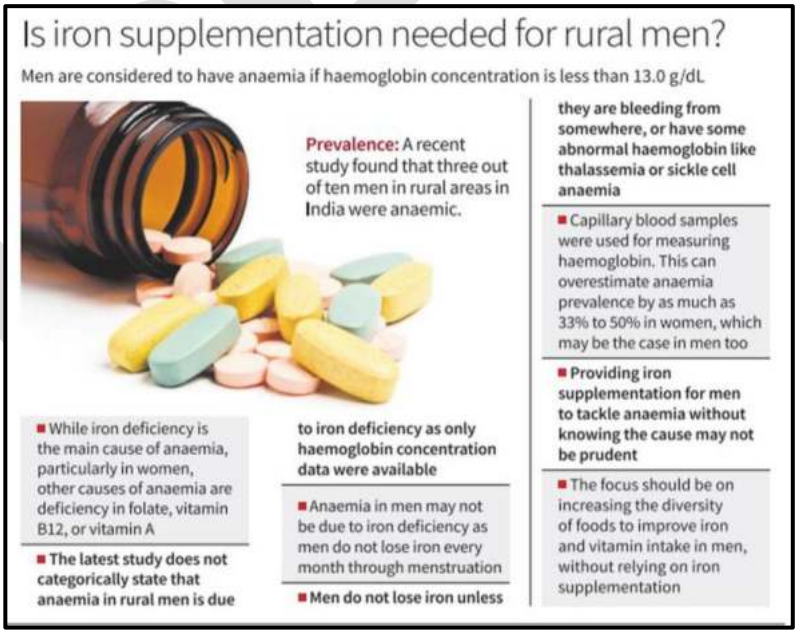
- **This Group of Friends will act as a platform to promote accountability for all acts of violence against the United Nations peacekeepers by facilitating support to the host state, creating awareness, exchanging information, sharing best practices, supporting initiatives, and mobilizing resources.**
- Bangladesh, Egypt, France, India, Morocco and Nepal have joined the group as co-chairs to promote accountability for crimes against peacekeepers.
- Group of Friends represents the "political will" of member states, particularly of the troop and police contributing countries, to champion the implementation of the provisions of U.N. Security Council resolution 2589, which was adopted in August last year under India's Presidency of the Council.
- **Resolution 2589 had called upon member states, hosting or having hosted United Nations peacekeeping operations, to take all appropriate measures to bring to justice perpetrators of the killing of, and all acts of violence against United Nations personnel, including, but not limited to, their detention and abduction**.

HEALTH

Anaemia

Context

- A recent analysis of the fifth National Family Health Survey (NFHS-5) has shed light on anaemia among men living in rural areas.



Findings of the Report

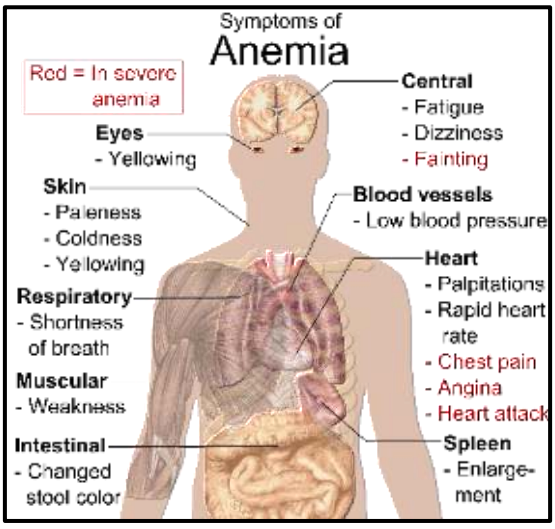
- It found that **three out of ten men in rural areas were anaemic**.
- **The prevalence of anaemia was more in rural areas than in urban areas** — one of five urban men are anaemic, while three out of every ten rural men are anaemic.
- Prevalence of anaemia was found to be higher (34.7%) among men who were underweight compared with men who were overweight (19.3%). Men who consumed alcohol and smoked had "slightly higher" occurrences of anaemia, and older men were found to be more vulnerable.
- Men in the southern States had lower anaemia prevalence (18.5%), while prevalence was highest in the eastern region (34.1%).

Anaemia

- Anaemia is a condition **in which the body does not have enough healthy red blood cells.** Red blood cells provide oxygen to body tissues.
- The body needs certain vitamins, minerals, and nutrients to make enough red blood cells. Iron, vitamin B12, and folic acid are three of the most important ones.

Treatment

- Treatment depends on the underlying diagnosis. Iron supplements can be used for iron deficiency.
- Vitamin B supplements may be used for low vitamin levels. Blood transfusions can be used for blood loss.
- Medication to induce blood formation may be used if the body's blood production is reduced.



Lecanemab

Context

- An experimental drug is raising hope for the treatment of Alzheimer's. The drug, called Lecanemab, slows down Alzheimer's a bit.

What is Lecanemab and how does it work?

- Lecanemab belongs to a class of drugs **called monoclonal antibodies**. These antibody-mediated drugs target beta-amyloid, the protein deposition that is seen in patients with Alzheimer's disease, and disrupts cells function.

What is Alzheimer's?

- Alzheimer's is a type of dementia that affects memory, thinking and behaviour. Symptoms eventually grow severe enough to interfere with daily tasks.

Why is the burden of Alzheimer's increasing?

- The increasing lifespan and very high burden of diseases such as diabetes, hypertension and obesity are expected to "dramatically" increase the prevalence of dementia in India.
- Dementia is an umbrella term for a group of disorders that lead to impaired memory, decision-making and social skills – Alzheimer's is one of the most common types of dementia.
- The disease usually occurs in people over the age of 65 years with a very small proportion getting early-onset.
- The Dementia in India report 2020 estimates that there are 5.3 million people over the age of 60 years living with dementia, with the prevalence projected to increase to 14 million by 2050.

How to keep Alzheimer's at bay?

- Just like physical exercise, exercising the brain every day is also important.
- Learning new languages, developing hobbies like music, and solving puzzles like Sudoku keep the brain active and cognitively fit. It is also important for the elderly to go out, make new friends and socialise.
- The disease can also be kept at bay by mitigating risk factors such as diabetes, hypertension, and obesity through a good diet, exercise, enough sleep, and doing away with smoking.

Incidence of Alzheimer's after the pandemic

- The All-India Institute of Medical Sciences (AIMS) estimates a 15 per cent increase in the number of people getting Alzheimer's, adding that such studies are not available from India.
- The Coronavirus pandemic has unmasked several neurodegenerative diseases and Alzheimer's is one of them. Post-Corona, a number of people have also been facing memory impairment.

Silver Lining

- Lecanemab, "might well pave the way for much needed treatments for Alzheimer's disease.

Cholera

Context

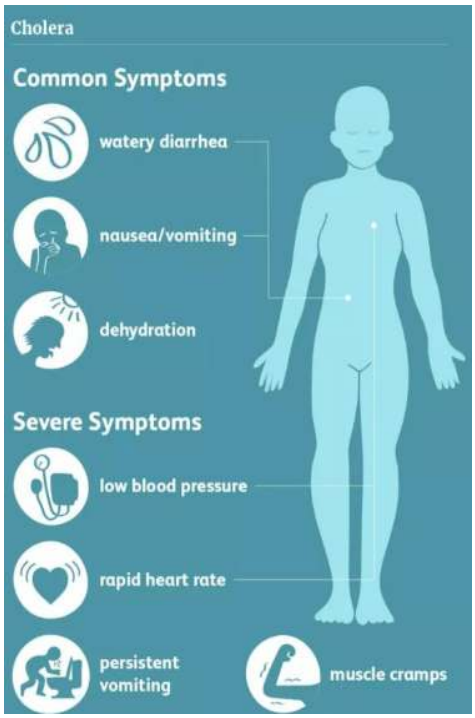
- Several countries across the world have reported a surge in cholera cases this year, raising concerns about a global resurgence of the disease. These include Kenya, Malawi, Haiti and the Philippines.

Cholera

- Cholera is an infectious disease that causes severe watery diarrhoea, which can lead to dehydration and even death if untreated. It is caused by eating food or drinking water contaminated with a bacterium called ***Vibrio cholerae.***

Cholera Causes

- ***Vibrio cholerae,*** the bacterium that causes cholera, is usually found in food or water contaminated by feces from a person with the infection. **Common sources include:**
  - Municipal water supplies.
  - Ice made from municipal water.
  - Foods and drinks sold by street vendors.
  - Vegetables grown with water containing human wastes.
  - Raw or undercooked fish and seafood caught in waters polluted with sewage.
- When a person consumes contaminated food or water, the bacteria release a toxin in the intestines that produces severe diarrhoea.



Treatment

- It is normally dehydration that leads to death from cholera, so the most important treatment is to give **oral hydration solution (ORS), also known as oral rehydration therapy (ORT).** The treatment consists of large volumes of water mixed with a blend of sugar and salts.
- Severe cases of cholera require **intravenous fluid replacement.**
- **Antibiotics** can shorten the duration of the illness, but the WHO does not recommend the mass use of antibiotics for cholera, because of the growing risk of bacterial resistance.

Cholera vaccine

- There are currently three cholera vaccines recommended by the World Health Organization (WHO). These are **Dukoral, Shanchol, and Euvichol.**
- All three require two doses to give full protection.

Prevention and control

- A multifaceted approach is key to control cholera, and to reduce deaths. A **combination of surveillance, water, sanitation and hygiene, social mobilisation, treatment, and oral cholera vaccines** can be used.

Cervical Cancer

Context

- The Centre has written to all States and Union Territories to create awareness on prevention of cervical cancer and the importance of HPV vaccine among girl students across the country.

What Is Cervical Cancer?

- Cervical cancer is cancer that starts in the cells of the cervix. The cervix is the lower, narrow end of the uterus (womb).

The Recent Lancet Study

- The Lancet Study used the International Agency for Research on Cancer's (IARC) Global Cancer Observatory (GLOBOCAN) 2020 database to estimate the burden of cervical cancer incidence and mortality rates in 185 countries.

Findings of the Study

- Though the incidence of cervical cancer has decreased in many parts of the world —notably in Latin America, Asia, Western Europe, and North America — over the past three decades, the burden remains high in many low- and middle-income countries.
- In 2020, overall incidence was 13 per 1,00,000 women; mortality was 7 per 1,00,000 women. As many as 172 out of the 185 countries saw more than the 4 cases per 1,00,000 women per year threshold for elimination set by the World Health Organisation (WHO).
- The study has **detected encouraging decreases in some high-income countries** such as Sweden, Australia, and the UK following successful implementation of HPV vaccination programmes and screening, but globally the burden remains high.
- The study found **major declines in cases in Latin American countries** including Brazil, Colombia, and Costa Rica; Asian **nations like India,** Thailand, and South Korea; and Poland, Slovenia, and the Czech Republic in Eastern Europe.
- However, there were increases in cases over the past decade in Latvia, Lithuania, and Bulgaria, in parts of East Africa, as well as in The Netherlands and Italy.
- Reasons for the recent increases might include **increased prevalence of HPV among the younger generations of women** and lack of effective screening programmes.

Prevention

- **Cervical cancer** can often be prevented by having regular screenings **with Pap tests and human papillomavirus (HPV) tests** to find any precancers and treat them.
- The **development of effective vaccination against the human papillomavirus (HPV),** which causes cervical cancer, and screening programmes have made cervical cancer a largely preventable disease.

HPV Vaccine

  - The **HPV vaccine** protects against the types of HPV that most often cause cervical, vaginal, and vulvar cancers.
  - HPV vaccination is recommended for preteens aged 11 to 12 years, but can be given starting at age 9.
  - HPV vaccine also is recommended for everyone through age 26 years, if they are not vaccinated already.

WHO Target

- In 2020, the WHO announced a target to accelerate the elimination of the disease as a public health problem, aiming to reduce incidence to less than 4 cases per 1,00,000 women per year in every country by 2030. This study tracks the progress on cervical cancer rates and identifies the countries and regions where scaling-up efforts are required to reach WHO targets.

Way Ahead

- The **screening and treatment of precancerous and invasive cervical cancer** is still fundamental to achieving the WHO's elimination target.
- **Vaccination should be encouraged** together with sexual health education in schools; it should be part of the school curriculum.

Sepsis

Context

- New research clarified how Sepsis can lead to cell death.

Sepsis

- Sepsis is **a life-threatening condition arising from the body's overreactive response against an infection, leading it to injure its own tissues and organs.**
- Sepsis **accounted for 11 million deaths worldwide in 2017.**

Symptoms

- Change in mental status.
- Systolic blood pressure — the first number in a blood pressure reading — less than or equal to 100 millimeters of mercury (mm Hg).
- Respiratory rate higher than or equal to 22 breaths a minute.

Causes

- While any type of infection — bacterial, viral or fungal — can lead to sepsis, infections that more commonly result in sepsis include infections of:
  - Lungs, such as pneumonia
  - Kidney, bladder and other parts of the urinary system
  - Digestive system
  - Bloodstream (bacteremia)
  - Catheter sites
  - Wounds or burns

Treatment

- **Research shows that rapid, effective sepsis treatment includes:**
  - Giving appropriate treatment, including antibiotics.
  - Maintaining blood flow to organs.
  - Sometimes surgery is required to remove tissue damaged by the infection.

Zombie Virus

Context

- Scientists have reportedly revived a 48,500-year-old '**Zombie Virus**' that has been buried in ice. Climate change has thawed ancient permafrost and this may likely pose a number of threats to humans according to researchers.

Zombie Virus

- Zombie virus is the term used for those **viruses which have been dormant for thousands of years.**

Thawing Permafrost and Zombie Virus

- As the issue of global warming becomes the main area of concern for the future; a number of glaciers and permafrost have been melting uncontrollably, freeing up bacteria and viruses that have been on ice for years.
- Zombie viruses have been dormant for many years due to being trapped inside the ice and have come to life after the ice melted.
- As per studies, ancient frozen viruses that come to life after being dormant for years **can threaten public health**. Scientists say that all zombie viruses **can potentially cause infection in people, which can be a huge threat to human beings.**
- Almost one-fourth of the Northern Hemisphere is laden with permafrost, which contains permanently frozen bacteria and viruses. As the climate is warming, permafrost is thawing irreversibly, releasing organic matter frozen for millions of years. The organic matter also decomposes into methane and carbon dioxide, causing a greenhouse effect.

GS-III
ECONOMY

USA'S Inflation Reduction Act of 2022 (IRA)

Context

- Europe is worried about U.S Inflation Reduction Act.

The Act

- The Inflation Reduction Act of 2022 (IRA), signed into law on August 16, 2022, directs new federal spending toward **reducing carbon emissions, lowering healthcare costs, funding the Internal Revenue Service, and improving taxpayer compliance.**

- It is a **$430 billion package of federal spending, tax breaks, credits, and levies**, aimed at fighting climate change, reducing healthcare costs, and making large corporations pay their "fair share" in taxes.
- The act aims to catalyze investments in domestic manufacturing capacity, encourage procurement of critical supplies domestically or from free-trade partners, and jump-start R&D and commercialization of leading-edge technologies such as carbon capture and storage and clean hydrogen. It **also allocates money directly to environmental justice priorities** and requires recipients of many funding streams to demonstrate equity impacts.
- USA's Congressional Budget Office (CBO) estimates that the law will reduce budget deficits by $237 billion over the next decade.
- This is the third piece of legislation passed since late 2021 that seeks to improve US economic competitiveness, innovation, and industrial productivity.

Why is Europe worried?

- The 27 EU countries are worried their companies will be cut off from U.S. tax credits for components used in renewable energy technologies like electric cars, offered under the new law on condition they are made in North America.
- EU countries consider that some 200 billion euros ($207 billion) of the U.S. subsidies are tied to locally produced content provisions that **potentially violate World Trade Organization (WTO) rules.** European Commission President said that while competition was a good thing, there should be a level playing field.
- Not only do the tax breaks put European companies at a disadvantage to U.S. rivals, but EU state aid rules in their current form prevent member countries from offering similarly generous tax breaks to companies looking to set up factories.

Stabilization Fund

Context

- India is **planning a stabilization fund** to keep prices of credits in its planned carbon market above a certain threshold, ensuring that they remain attractive for investors and that the market succeeds in cutting emissions.

Stabilization Fund

- A **stabilization fund** is a mechanism set up by a government or central bank to insulate the domestic economy from large influxes of revenue, such as from commodities such as oil.
- A primary motivation is **maintaining a steady level of government revenue** in the face of major commodity price fluctuations (hence the term "stabilization"), as well as the avoidance of inflation and associated atrophy of other domestic sectors (Dutch disease). This generally involves the purchase of foreign-denominated debt, especially if the goal is to prevent overheating in the domestic economy. The notion may overlap with sovereign wealth fund.

> Dutch disease is **a concept that describes an economic phenomenon where the rapid development of one sector of the economy (particularly natural resources) precipitates a decline in other sectors**. It is also often characterized by a substantial appreciation of the domestic currency.

Stabilization Fund for Carbon Trading

- India is planning a stabilization fund to keep prices of credits in its planned carbon market above a certain threshold, ensuring that they remain attractive for investors and that the market succeeds in cutting emissions.
- Money in the fund would be used by a market regulator **to buy carbon credits if prices fell too low.**
- Consistent investor interest in credits and a floor under the price would be needed because sharp falls in the market could discourage industries from reducing carbon dioxide emissions.
- In creating a carbon market, a country sets a limit on emissions and then allocates a corresponding quantity of tradable permits, or credits, to emitters. The quantity reduces over time. If a company wants to emit more, it can buy more credits at the market price, but it will also consider whether constraining or even cutting its emissions might be more profitable.
- Government would set up the stabilisation fund. Exactly how it would work and where the money would come from was still under discussion.
- India has committed to cutting its ratio of greenhouse emissions to gross domestic product by 2030 to 45% of its 2005 level and to net zero by 2070.

Retail Inflation

Context

- Retail inflation fell below 6% mark for first time in 2022.

Retail inflation

- Retail inflation tracked by the Consumer Price Index (CPI) measures the changes in prices from a retail buyer's perspective.
- Wholesale inflation on the other hand is tracked by the Wholesale Price Index (WPI), measures inflation at the level of producers.

Recent Findings

- **Vegetables and Edible Oil**
  - Cooling vegetable and edible oil prices drove India's retail inflation down to 5.88% in November from 6.77% in October, the first time since January this year that consumer prices have risen slower than the 6% tolerance threshold set for the central bank.
- **Food price inflation**
  - Food price inflation faced by consumers eased to an 11-month low of 4.67% from over 7% in October, but rural consumers faced a greater burden with a 5.2% price rise in food items, compared to just 3.7% for their urban peers. Overall rural retail inflation also stayed high at 6.09%.
- **Cereals and milk inflation**
  - Cereals and milk inflation, the top two contributors to food inflation, are still elevated and on an upward trend, while the upward pressure on services inflation has strengthened core inflation.
- **Core Inflation**
  - Inflation in the major components of core inflation - transportation and communication, housing, households good and services — was up or remained stable on-year, indicating continued pass through of input prices and recovering demand.

Consumer Price Index (CPI)

- Consumer Price Index (CPI) measures the inflation at retail level.
- Consumer Price Index (CPI) is a measure of change in retail prices of goods and services consumed by people in a given area with reference to a base year. CPI is calculated for a fixed list of items including food, housing, apparel, transportation, electronics, medical care, education, etc. The price data is collected periodically, and thus, the CPI is used to calculate the inflation levels in an economy.

The main uses of CPI are the following:

- It is widely considered as a barometer of inflation
- Tool for monitoring price stability
- The Reserve Bank of India is now using CPI (Combined) as the as the benchmark for its monetary policy tools like Repo Rate, Reverse Repo Rate.
- According to the Agreement on Monetary Policy Framework signed between the Government and the RBI in 2015 the sole objective of the RBI is price stability and the Consumer Price Index (Combined) is measured as the target inflation.

Kirit Parikh Panel

Context

- The Kirit Parikh panel, which was established to review natural gas prices in India, has suggested a price range of $4-6.50/unit for gas from old legacy fields, which account for more than 70% of domestic output, and the implementation of fully market-determined rates by January 2027.

The rationale behind the review

- **Gas from legacy fields is sold to city gas distributors** who had to raise rates of CNG and piped cooking gas by over 70% after a surge in global rates. Prices went up from $2.90 per million British thermal unit till March to $6.10 in April and further to $8.57 last month. This rise in rates, which narrowed the gap between CNG and polluting diesel, prompted the review.

Objective

- The mandate of the panel was to suggest a **regime that would help raise domestic production to help meet the goal of 15% of energy coming from gas by 2030.** That requires that we produce a lot of domestic gas. Currently, only 6 percent of our total energy is from gas and we are importing 50 percent of gas.

Main suggestions and their possible impacts

- Domestic gas produced from dated and legacy fields will have a floor price of $4 per metric million British thermal units (mmBtu) and a cap price of $6.50 per mmBtu under the Administered Pricing Mechanism (APM). Every year, the cap will increase by $0.50.
- **Impact:** If accepted, this recommendation will determine how much gas the government-run Oil and Natural Gas Corporation (ONGC) and Oil India Ltd. will be allowed to produce (OIL).
- Pricing for APM gas will be deregulated by January 2027.
- **Impact:** While allowing five years for implementation will be in the best interests of both consumers and producers of gas and protect them from the volatility in the global market, this recommendation is in line with the industry's demand for market-determined pricing for gas to boost production.

"APM gas" is the natural gas sold by the Participating Companies to. customers at **Administered Pricing Mechanism** (APM) rate as decided by the Government from time to time; (b) "Consumer Price" is the price payable by APM customers, as decided by the Government from time to time; (c)"Customers" means APM customers.

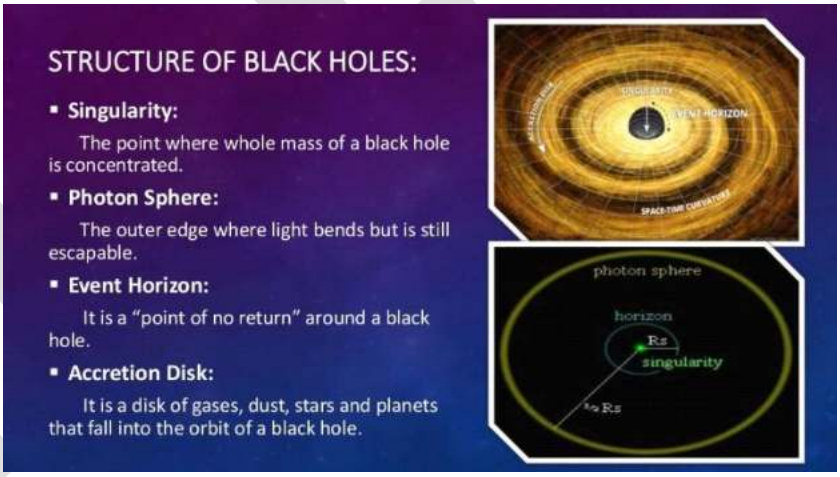
- The committee advised against altering the pricing structure for gas produced in recent and challenging fields. To make up for the higher risk and cost associated with these projects, new and challenging fields can charge whatever they want, but there is a pricing cap. The report recommends removing the upper cap as of January 1, 2026.
- **Impact:** Gas produced from fields like the Krishna-Godavari block D6 (KG-D6) fields of Reliance Industries Ltd. and its joint venture partner bp plc, which are governed by the pricing formula for difficult fields, would benefit from the removal of cap, it is likely. The elimination of the cap might encourage more investment in these difficult fields.
- Instead of the current practice of linking domestic gas price changes to global benchmarks of the US (WTI), UK (Brent), and Canada, domestic gas price changes should be linked to crude prices (CCI).
    - **Impact:** If approved by the government, this could lessen the recent sharp price fluctuations brought on by geopolitical events.
    - City gas distribution (CGD) and the fertiliser industries should continue to receive top priority when allocating gas. At the moment, CGD companies receive roughly 90% of the gas allocated to priority sectors (CNG + PNG domestic).
    - **Impact-** Brokerage Prabhudas Lilladher claimed that since the priority sector generates more than 80% of revenues, CGD firms like Indraprastha Gas Ltd and Mahanagar Gas Ltd will stand to gain the most if the proposal is approved. Retail CNG prices could decrease by Rs7-8/kg at a cap price of 6.5/mmBtu (currently $8.57), according to the brokerage.

SCIENCE & TECHNOLOGY

Black Hole

Context

- A mysterious and intensely bright flash of light coming from halfway across the universe earlier this year had stunned astronomers worldwide. The source of the intense beam has now been identified — a supermassive black hole ripping apart a star, pointing directly at Earth.



What is a Black Hole?

- A black hole is a place in **space where gravity pulls so much that even light cannot get out**. Gravity is so strong because matter has been squeezed into a tiny space. This **can happen when a star is dying.**
- Because no light can get out, people can't see black holes. They are invisible.
- Space telescopes with special tools can help find black holes. The special tools can see how stars that are very close to black holes act differently than other stars.

How Do Black Holes Form?

- Scientists think the smallest black holes formed when the universe began.
- Stellar black holes are made when the center of a very big star falls in upon itself, or collapses. When this happens, it causes a supernova.
- A supernova is an exploding star that blasts part of the star into space.
- Scientists think supermassive black holes were made at the same time as the galaxy they are in.

Super Massive Black Hole (SMBH)

- In the heart of every galaxy is an SMBH, a concentration of matter so dense that not even light can escape, in the center of which our current theories of spacetime break down.
- They range from hundreds of thousands to billions of solar-masses, concentrated into an object the size of our solar system.
- They are the nucleation seeds that attract primordial gas to form new galaxies of hundreds of billions of stars and their planets,

whose combined mass, along with dark matter, forms a gravitationally bound structure.

Dark Patterns

Context

- Some Internet-based firms have been tricking users into agreeing to certain conditions or clicking a few links. These are examples of "dark patterns," also known as "deceptive patterns."

What are Dark patterns?

- A **dark pattern** is "a user interface that has been carefully crafted to trick users into doing things, such as buying overpriced insurance with their purchase or signing up for recurring bills". In turn, they benefit the company or platform employing the designs.
- By using dark patterns, digital platforms take away a user's right to full information about the services they are using, and reduce their control over their browsing experience. User experience designer Harry Brignull coined the term in 2010.

How do companies use dark patterns?

- Social media companies and Big Tech firms such as Apple, Amazon, Skype, Facebook, LinkedIn, Microsoft, and Google use dark or deceptive patterns to downgrade the user experience to their advantage.
- Amazon came under fire in the EU for its confusing, multi-step cancellation process for the Amazon Prime subscription. After communicating with consumer regulators, Amazon this year made its cancellation process easier for online customers in European countries.
- In social media, LinkedIn users often receive unsolicited, sponsored messages from influencers. Disabling this option is a difficult process with multiple steps that requires users to be familiar with the platform controls.

Implications

- Dark patterns endanger the experience of Internet users and **make them more vulnerable to financial and data exploitation by Big Tech firms**.
- Dark patterns confuse users, introduce online obstacles, make simple tasks time-consuming, have users sign up for unwanted services/products and force them to pay more money or share more personal information than they intended.

Digi Yatra

Context

- Union Minister for Civil Aviation Shri Jyotiraditya Scindia recently launched Digi Yatra for three airports — New Delhi, Varanasi, and Bengaluru.

Details

- The 'DigiYatra' is an industry-led initiative co-ordinated by the Ministry in line with the Prime Minister Shri Narendra Modi's Digital India's vision to transform the nation into a digitally empowered society.
- Digi Yatra **entails Digital processing of passengers at the airports**. Passengers will be automatically processed **based on facial recognition system** at check points like; Entry point check, Entry in to Security Check, Aircraft Boarding, Additionally, this will also facilitate self-Bag Drop and Check-in, using facial recognition to identify pax and data recall. Digi Yatra **will facilitate paperless travel and avoid identity check at multiple points.**

Anti Misinformation Project

Context

- Google's Jigsaw subsidiary is launching a new anti-misinformation project in India, aimed at preventing misleading information that has been blamed for inciting violence.

Background

- Like other countries, misinformation spreads rapidly across India, mostly through social media, creating political and religious tensions.
- The Ministry of Information & Broadcast has repeatedly invoked "extraordinary powers" to block YouTube channels and accounts on Twitter and Facebook that spread misinformation.
- Indian government officials have called on tech companies such as Google, Meta, and Twitter to take stronger action against the spread of fake news.

Anti-misinformation project

- The initiative will use **"prebunking" videos – designed to counter false claims before they become widespread** – circulated on the company's YouTube platform and other social media sites.
- After watching the videos, viewers will be asked to fill in a short multiple-choice questionnaire, designed to gauge what they have learned about misinformation. These videos will be available on Google's YouTube platform, along with other social media sites.

- According to Jigsaw, the viewers will be 5 per cent more likely to identify misinformation after watching the pre-bunking videos.

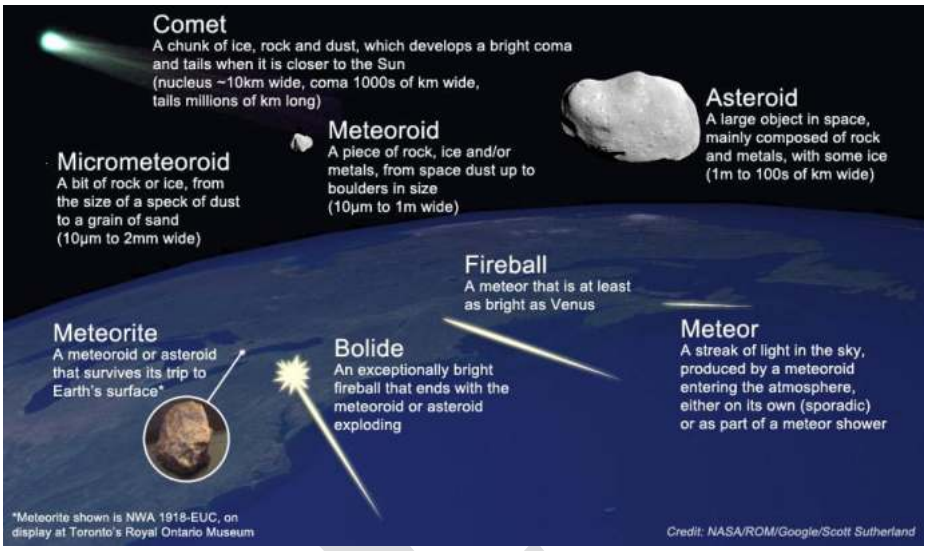
Geminids Meteor Shower

Context

- Recently, the famous Geminids Meteor shower was seen.

Meteor

- A meteor is a space rock—or meteoroid—that enters Earth's atmosphere. As the space rock falls toward Earth, the resistance—or drag—of the air on the rock makes it extremely hot. What we see is a "shooting star." That bright streak is not actually the rock, but rather the glowing hot air as the hot rock zips through the atmosphere.



Meteor Shower

- A **meteor shower** is a celestial event in which a number of meteors are observed to radiate, or originate, from one point in the night sky.
- These meteors are caused by streams of cosmic debris called meteoroids entering Earth's atmosphere at extremely high speeds on parallel trajectories. Most meteors are smaller than a grain of sand, so almost all of them disintegrate and never hit the Earth's surface.

Geminids

- The **Geminids** are a prolific meteor shower caused by the meteor 3200 Phaethon, which is a Palladian asteroid with a "rock comet" orbit.
- The Geminid meteor shower and the Quadrantids meteor shower are the only major showers not caused by a comet. When the Earth passes through the dusty trail left behind by the meteor 3200 Phaeton, some of the meteoroids left by the meteor burn up in our planet's upper atmosphere, appearing to us as the Geminid meteor shower.
- Geminids **were first observed in 1862**, much more recently than other showers such as the Perseids(36 AD) and Leonids (902 AD).

Water Worlds

Context

- Two exoplanets that may be submerged in water have been discovered by astronomers at the University of Montreal.

Water World

- A "water world" is an extreme case, is an exoplanet defined as being **covered by a deep ocean, perhaps as deep as hundreds of kilometers.**
- There are currently about fifty known exoplanets with diameters that range from Mars-sized to several times the Earth's and that also reside within their stars' habitable zone – the orbital range within which their surface temperatures permit water to remain liquid.

The new exoplanets

- NASA observed exoplanets **Kepler-138c and Kepler-138d** with NASA's Hubble and the retired Spitzer space telescopes and discovered that the planets could be composed largely of water.
- The temperature in Kepler-138d's atmosphere is likely above the boiling point of water, and there is a dense atmosphere made of steam on this planet. Only, under that steam atmosphere there could potentially be liquid water at high pressure, or even water in another phase that occurs at high pressures, called a supercritical fluid.
- Further, the researchers also discovered a fourth planet in the Kepler planetary system: Kepler-138 e. The new planet takes 38 days to complete an orbit. It is in the habitable zone, meaning it is located in an orbit that receives just the right amount of heat from its star to allow water to exist in a liquid form.

Final Thought

- The researchers hope to address this knowledge gap and find more water worlds in the future.

APTI PL

Base Editing

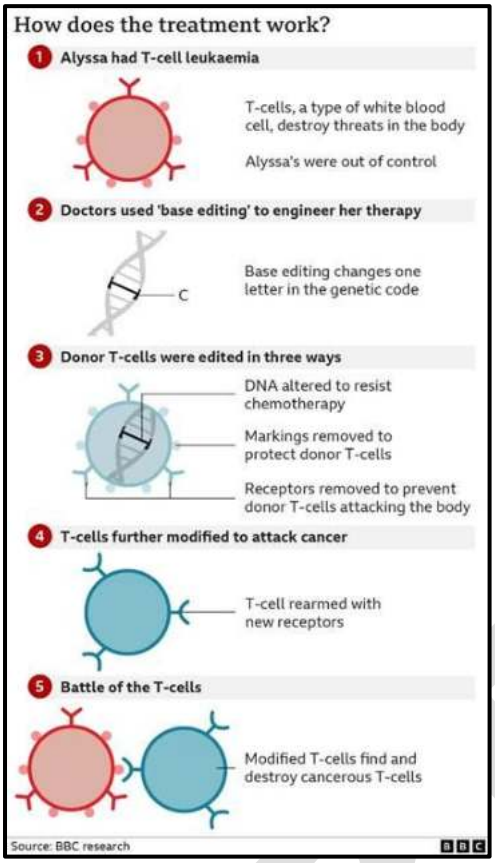
Context

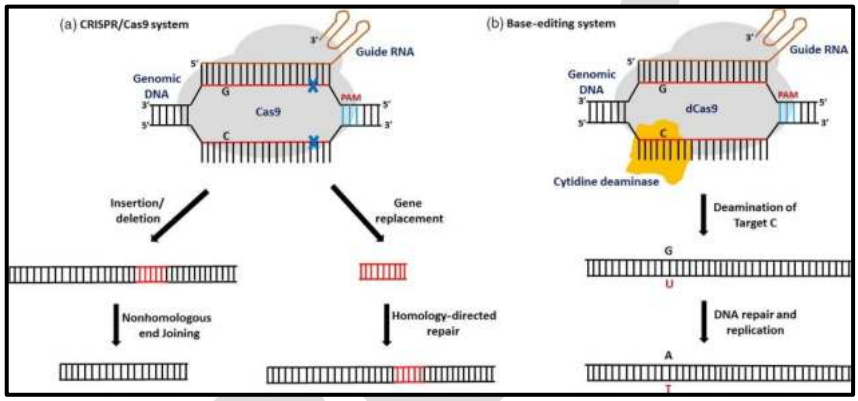
- For the first time, a new gene editing technology called base editing was used to modify immune cells and successfully treat a teen with treatment-resistant leukemia.

What is Base Editing?

- A person's genetic code is several permutations of four bases: **Adenine (A), Guanin (G), cytosine (C) and thymine (T).** Sequences of these bases, spell out genes that are instructions to produce the wide array of proteins necessary for the body's functions.
- Base editing **allows scientists to zoom to a precise part of the genetic code and then alter the molecular structure of just one base, converting it into another and changing the genetic instructions**.

The recent Treatment of the Leukemia Patient





T cells

T cells (also called T lymphocytes) a type of white blood cell and major components of the **adaptive immune system**. Their roles include directly killing infected host cells, activating other immune cells, producing cytokines and regulating the immune response. T lymphocytes originate from **hematopoietic** stem cells within the bone marrow.

There are two types of T-cells in our body: Helper T-cells and Killer T-cells. Killer T-cells do the work of destroying the infected cells. The Helper T-cells coordinate the attack.

T-ALL

T-cell acute lymphoblastic leukemia (T-ALL) is **an aggressive malignant neoplasm of the bone marrow**. It accounts for ~20% of all cases of ALL and is somewhat more common in adults than children, although the incidence diminishes with older age.

Significance

- Genetic manipulation is a "very fast-moving area of science" with "enormous potential" across a range of diseases.
- Base editing is particularly promising, not just in this case but for genetic disorders.

How is base editing better than CRISPR?

- Conventional CRISPR-Cas9 gene editing introduces double-strand breaks, which can lead to off-target effects. Base editing **avoids double-strand breaks, thereby minimizing errors**.
- Thus, Base editors **allow precise nucleotide substitutions in the DNA without having to break the DNA to force the cell machinery to repair it and in the process make mistakes**, which is the main mechanism of CRISPR-Cas9.
- Base editing is an even more precise gene editing technique than CRISPR and has fewer risks of unwanted effects on the

chromosomes and thus less risk of side effects.

Deepfake Technology

Context

- The Cyberspace Administration of China, is rolling out new regulations, to restrict the use of deep synthesis technology and curb disinformation.

What is a Deepfake?

- The term "deepfake" comes from the underlying technology "deep learning," which is **a form of Artificial Intelligence.**
- Deepfakes are a compilation of artificial images and audio put together with machine-learning algorithms to spread misinformation and replace a real person's appearance, voice, or both with similar artificial likenesses or voices. It can create people who do not exist and it can fake real people saying and doing things they did not say or do.
- The term deepfake originated in 2017.Deepfake technology is now being used for nefarious purposes like scams and hoaxes, celebrity pornography, election manipulation, social engineering, automated disinformation attacks, identity theft and financial fraud.

China's new policy to curb Deepfakes

- Under the guidelines of China's new rules, companies and platforms using the technology must first receive consent from individuals before they edit their voice or image.
- The policy rightly requires deep synthesis service providers and users to ensure that any doctored content using the technology is explicitly labelled and can be traced back to its source.
- The regulation also mandates people using the technology to edit someone's image or voice, to notify and take the consent of the person in question.

Space-Tech Innovation Network (SpIN)

Context

- The Indian Space Research Organisation (ISRO) has signed an MoU with Social Alpha **to launch Space Tech Innovation Network (SpIN).**
- Social Alpha is a multistage innovation curation and venture development platform for science and technology start-ups.

SpaceTech Innovation Network (SpIN)

- SpIN is **India's first dedicated platform for innovation, curation, and venture development** for the burgeoning space entrepreneurial ecosystem.
- The SpIN platform offers a focused support ecosystem that will ensure access to **long-term patient capital, pooled testing, and validation infrastructure, building strong sustainable business models** that will lead to new market creation for SpaceTech entrepreneurship in India.
- SpIN will primarily focus on facilitating space tech entrepreneurs in three distinct innovation categories: **Geospatial Technologies and Downstream Applications; Enabling Technologies for Space & Mobility; and Aerospace Materials, Sensors, and Avionics.**

Significance

- The SpaceTech Innovation Network (SpIN) is expected to bring synergy among innovators who are **looking for support primarily in product development, product commercialization, and go-to-market strategy.**
- SPIN platform **would create a level playing field for various stakeholders to collaborate and contribute to the space ecosystem in the country.**
- The use of space science and technology has the potential to benefit diverse sectors, such as aviation, maritime and land transportation, urbanisation, mapping and surveying, human health, disaster management, food security and sustainable agriculture, environmental monitoring, and natural resources management.
- This novel partnership is a significant step forward in providing further stimulus to India's recent space reform policies and will work towards **identifying and unleashing the market potential of the most promising space tech innovators and entrepreneurs in India.**

Bt Brinjal and Biopiracy

Context

- The Supreme Court, has ordered the Karnataka High Court to continue hearing a public interest litigation (PIL) on Bt Brinjal biopiracy which it had sent to the National Green Tribunal in 2013.

Biopiracy

- Biopiracy happens **when researchers or research organizations take biological resources without official sanction, largely from less affluent countries or marginalized people.** When researchers use traditional knowledge without permission or

exploit the cultures they're drawing from – it's called biopiracy.

- **The term biopiracy was coined in the early 1990s by Pat Mooney, founder of ETC Group**– an organization that works to protect the world's most vulnerable people from socioeconomic and environmental impacts of new technologies – to describe the theft or misappropriation of genetic resources and traditional knowledge through the intellectual property system.

Some examples of Biopiracy

- Patenting of Neem
- Biopiracy of Basmati
- Syngenta's Attempt at Biopiracy of India's rice diversity
- Monsanto's Biopiracy of Indian Wheat.

Bt Brinjal

- The **genetically modified brinjal**is a suite of transgenic brinjals created by inserting a crystal protein gene (*Cry1Ac*) from the soil bacterium *Bacillus thuringiensis* into the genome of various brinjal cultivars.
- The insertion of the gene, along with other genetic elements such as promoters, terminators, and an antibiotic resistance marker gene into the brinjal plant is accomplished using *Agrobacterium*-mediated genetic transformation.
- The Btbrinjal has been developed **to give resistance against lepidopteran insects**, in particular, the Brinjal Fruit and Shoot Borer (*Leucinodesorbonalis*)(FSB) by forming pores in the digestive system.

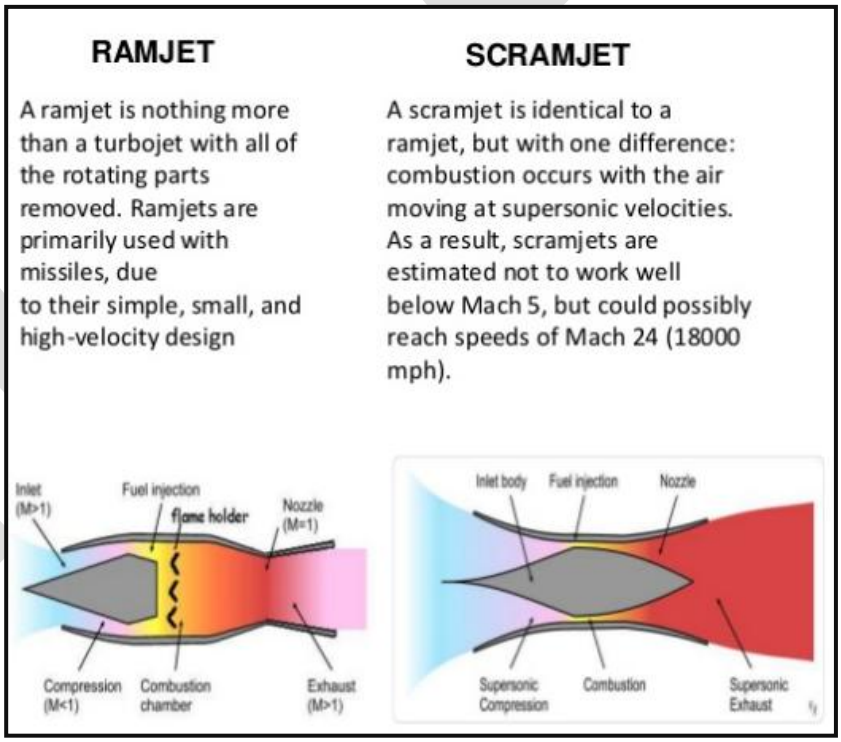
Scramjet Engine

Context

- The Indian Space Research Organisation (ISRO) has recently successfully conduced the Hot Test of Scramjet Engine for 11 seconds.

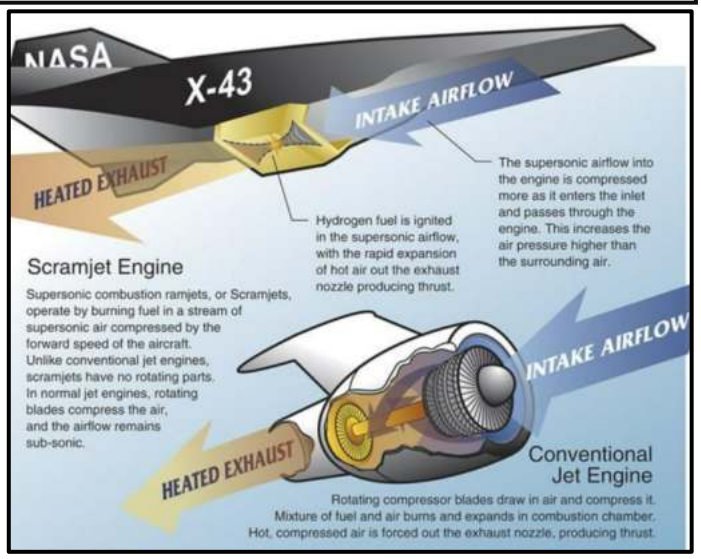
Background: Ramjet

- A **ramjet**, or **athodyd** (**aero thermodynamic duct**), is a form of air breathing jet engine that uses the forward motion of the engine to produce thrust.
- Since it produces no thrust when stationary (no ram air) ramjet-powered vehicles require an assisted take-off like a rocket assist to accelerate it to a speed where it begins to produce thrust.
- Ramjets work most efficiently at supersonic speeds around Mach 3 (2,300 mph; 3,700 km/h) and can operate up to speeds of Mach 6 (4,600 mph; 7,400 km/h).
- Ramjets can be particularly useful in applications requiring a small and simple mechanism for high-speed use, such as missiles.



Scramjet

- A **scramjet** (**supersonic combustion ramjet**) is a variant of a ramjet airbreathing jet engine in which combustion takes place in supersonic airflow.
- As in ramjets, a scramjet relies on high vehicle speed to compress the incoming air forcefully before combustion (hence *ram*jet).
- As in ramjets, scramjets also compress the incoming air before combustion using the speed of the vehicle. However, ramjets decelerate the airflow to subsonic speeds within the engine prior to combustion, though airflow in a scramjet is supersonic throughout the entire engine.



Note:

- Flow inside the ramjet is subsonic while, in the Scramjet, it is supersonic.
- Scramjets produce higher specific impulse.

- Theoretically Ramjets have a velocity range of 1 to 6 Mach while, in Scramjets, the range is 12 to 24 Mach.

DEFENSE & SECURITY

Open Standard Digital Trunking Radio System

Context

- The Delhi Police will soon move to a more efficient internal communication system, aimed at faster exchange of information and bigger networks. **The force is set to design, install and supply the 'Open Standard Digital Trunking Radio System' (OS-DTRS) and will phase out the current tetranet wireless network services. The project will cost close to Rs 100 crore, tenders for which were issued on December 2.**

Details

- The trunking system provides multiple channels and common groups for policemen.
- This way, they are communicating with more personnel using fewer groups, officials said. Groups are formed based on geographical area and function.
- It **will also have a voice logger system, which can be used to describe a crime scene, interrogation details and evidence. The logs are saved in the system.**
- The **project's master site will be at the Delhi Police HQ.**
- Police are looking for private companies to run the system on 800 MHz frequency band and microwave links.
- As per documents released by police, **the master site will have OS-DTRS control and switching equipment, a network management system, 90 IP-based logger systems, 50-inch or bigger LED monitors, an antenna system and maintenance systems.**
- Equipment and services are expected to run for at least 10 years and fix network issues faced by personnel on the ground.
- The system should be equipped to support multi-channel operation for meeting current traffic requirements and should be expandable by 100% in future
- The system will have talk groups, in which members have the same functions/role, and each radio system will have a unique ID.
- The system should support at least 250 talk groups, with the capability to expand
- At present, police have 120 talk groups.

Agni-V ballistic Missile

Context

- India test-fires Agni-V ballistic missile with 5,000 km range

Details:

- This marks a significant boost to the country's strategic deterrence, people familiar with the development said.
- **The test-firing of the missile from the APJ Abdul Kalam Island off Odisha coast comes amid India's lingering border row with China.**
- **Agni-V can bring almost the entire Asia including the northernmost part of China and regions in Europe under its striking range.**

Must read: *https://www.iasgyan.in/daily-current-affairs/agni-5-missile*

Arnala

Context

- Arnala, the first of 08 x ASW SWC Project, being built by GRSE for Indian Navy was launched

Details

- The ship has been named Arnala to signify the strategic maritime importance accorded to the island of Arnala (located about 13 Km north of Vasai, Maharashtra) by the great Maratha warrior, ChhatrapatiShivajiMaharaj.
- Contract for building eight ASW SWC ships was signed between MoD and Garden Reach Shipbuilders & Engineers (GRSE), Kolkata on 29 Apr 19
- Arnala class of ships will replace the Abhay class ASW Ships of Indian Navy and are designed to undertake anti-submarine operations in coastal waters and Low Intensity Maritime Operations (LIMO) including subsurface surveillance in littoral waters.
- The 77.6m ASW SWC ships have a displacement of 900 tons with a maximum speed of 25 knots and endurance of 1800 NM.
- The ASW SWC ships will have over 80% indigenous content, ensuring that large scale defence production is executed by Indian manufacturing units thereby generating employment and capability build up within the country.

Patriot Missile Defense System

Context

- **US has agreed to send a Patriot missile battery to Ukraine — something Ukrainian President VolodymyrZelenskyy has sought for months to augment his country's air defenses.**

Details

What is the Patriot missile?

- The Patriot is a surface-to-air guided missile system that was first deployed in the 1980s and can target aircraft, cruise missiles and shorter-range ballistic missiles.
- Each Patriot battery consists of a truck-mounted launching system with eight launchers that can hold up to four missile interceptors each, a ground radar, a control station and a generator.
- The Army said it currently has 16 Patriot battalions. A 2018 International Institute for Strategic Studies report found those battalions operate 50 batteries, which have more than 1,200 missile interceptors.
- The U.S. batteries are regularly deployed around the world. In addition, Patriots also are operated or being purchased by the Netherlands, Germany, Japan, Israel, Saudi Arabia, Kuwait, Taiwan, Greece, Spain, South Korea, the United Arab Emirates, Qatar, Romania, Sweden, Poland and Bahrain.
- **The Patriot system "is one of the most widely operated and reliable and proven air missile defense systems out there," and the theater ballistic missile defense capability could help defend Ukraine against Iranian-supplied ballistic missiles**

Concerns

- A Patriot battery can need as many as 90 troops to operate and maintain it, and for months the U.S. was reluctant to provide the complex system because sending forces into Ukraine to operate it is a non-starter for the Biden administration.
- But there were also concerns that deployment of the system would provoke Russia, or risk that a missile fired could end up hitting inside Russia, which could further escalate the conflict.
- A key hurdle will be training. U.S. troops will have to train Ukrainian forces on how to use and maintain the system.

ENVIRONMENT & ECOLOGY

Project Great Indian Bustard

Context

- The Supreme Court sought the government's response about evolving a "Project Great Indian Bustard" conservation programme like the Project Tiger to bring attention to the peril faced by the critically endangered bird.
- Project Tiger is touted by the government as one of the most successful conservation programmes for a single species in the world.

Details

- The GIB — the State bird of Rajasthan — is considered India's most critically endangered bird and is protected under the Wildlife Protection Act.
- Its population of about 150 in Rajasthan accounts for 95% of its total world population.
- The captive breeding of GIBs was taken up in the DNP through a project executed by the Dehradun-based Wildlife Institute of India in 2019. As many as 24 GIB chicks are being reared in DNP by a team supported by the International Fund for Houbara Conservation of United Arab Emirates.
- As Rajasthan shares the international border with Pakistan's Sindh and Punjab provinces, it is suspected that the GIBs might have flown across to the neighbouring country's desert amid fears that they could become easy prey for the poachers there.

Great Indian Bustard (GIB):

- GIB is one of the most **critically threatened species** in India, with less than 150 birds left in the wild.
- GIBs are **one of the heaviest flying birds** in India.
- Experts say only two districts in Rajasthan — **Jaisalmer and Barmer** — have a breeding GIB population in the wild.
- The bird can also be found in **very small numbers in Gujarat, Madhya Pradesh, Karnataka, Maharashtra and Andhra Pradesh.**

Steps taken by the Government for protection of Great Indian Bustards in the country:

- A site for establishment of a Conservation Breeding Centre for the Great Indian Bustard has been identified at Kota District, Rajasthan, under the project '**Habitat Improvement and Conservation Breeding of Great Indian Bustard-an integrated approach'**.
- A satellite **conservation breeding facility** with incubator, hatcher, chick rearing and housing for captive birds has been set up at Sam, **Jaisalmer, Rajasthan**.
- The Great Indian Bustard is **listed in Schedule-I of the Wild Life (Protection) Act, 1972,** thereby, according it highest degree

of legal protection from hunting.

- Important habitats of Great Indian Bustards are designated as National Parks/Sanctuaries for their better protection.
- The species has been identified for conservation efforts under the component **'Species Recovery Programme' of the Centrally Sponsored Scheme (CSS)-Development of Wildlife Habitat**.
- The Ministry with financial support from National Authority for **Compensatory Afforestation Funds has sanctioned an outlay of Rs. 33.85 crores** for the duration of five years for the programme '**Habitat Improvement and Conservation Breeding of Great Indian Bustard-an integrated approach'** to build up captive population of Great Indian Bustard.
- Ministry has also constituted a Task Force for suggesting Eco- friendly measures **to mitigate impacts of power transmission lines and other power transmission infrastructures** on wildlife including the Great Indian Bustard.
- The Great Indian Bustard has been **included in the Appendix I of Convention on Migratory Species (CMS)** of the basis of proposal submitted by India. It was also the **mascot of the prestigious 13th CMS Conference of Parties held in Gandhinagar** giving wider publicity for the conservation of the species.

Natovenator Polydontus

News

- An artist reconstructed the dinosaur, called **Natovenatorpolydontus**, lived about 72 million years ago during the Cretaceous Period.

Details

- The dinosaur, called ***Natovenatorpolydontus***, lived about 72 million years ago during the Cretaceous Period.
- It was **built like a diving bird** with **a streamlined body** while possessing a goose-like elongated neck and a long-flattened snout with a mouth bearing more than 100 small teeth. It **almost surely was covered in feathers.**
- Natovenator was adapted to a semi-aquatic lifestyle in a freshwater ecosystem, perhaps floating on rivers and lakes, paddling with its front limbs, and using its flexible neck to catch fish and insects or diving underwater to capture its prey.
- Its well-preserved remains – a skeleton about 70% complete – were unearthed in the Gobi Desert, which over the decades has been a treasure trove for dinosaur fossils.
- Natovenator is **part of the dinosaur group called theropods** – sharing traits **including bipedalism** – best **known for large meat-eaters** including ***Tyrannosaurus, Tarbosaurus and Giganotosaurus***. **But the theropods,** many of which were feathered, branched out in unusual directions with examples such as long-clawed ground sloth-like Therizinosaurus, ostrich-like Struthiomimus, termite-eating Mononykus and the entire bird lineage.
- Not many of the dinosaurs **called "non-avian" – in other words**, not the birds – are known to have lived a semi-aquatic lifestyle.
- **Natovenator measured about 18 inches (45 cm) long,** with a **skull about 3 inches (7 cm) long**. Its front limbs appeared somewhat flattened, perhaps as an adaptation for paddling and swimming. The streamlining of its body is shown by ribs that point toward the tail, as in diving birds, an arrangement that reduces drag in the water and allows efficient swimming.
- **Natovenator – which means 'swimming thief'** is small and delicate.
- There were various diving birds during the Cretaceous, including ***North America's Hesperornis***, which reached about 6 feet (1.8 meters) long, but none are known from the **area Natovenator inhabited.**

Kanger Valley Bird Survey

Context

- **Around 200 bird species were documented during the Kanger Valley Bird Survey in state's first-ever systematic inter-state bird survey.**

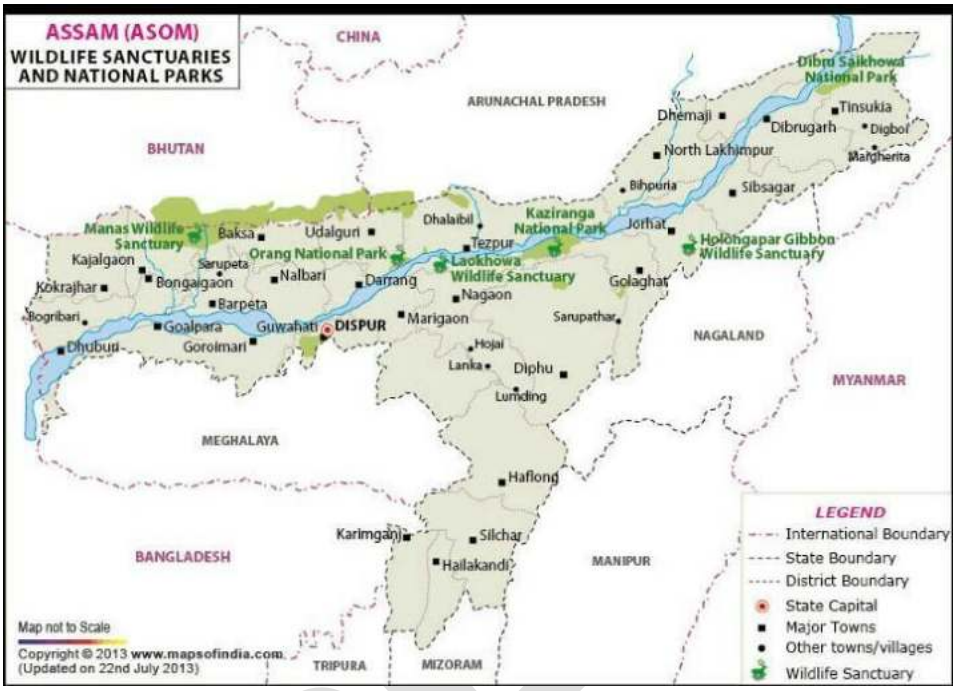
Details

- It is located in the state of Chhattisgarh. The name of KangerGhati National Park is derived from the Kangar river, which flows in its length.
- Kanger Valley got the status of a national park in the year 1982.
- Kanger Valley National Park is a typical mixed humid deciduous type of forest, in which the Sal, Saugaun, teak and bamboo trees are available in abundance.
- The most popular species in this area is BastarMaina (The state bird of Chattisgarh).
- This National Park is home to three exceptional caves – famous for their amazing geological structures of Kutumbasar, Kailash and Dandak- Stellagmites and Stalactites.
- Tirathgarh Waterfall is located in Kanger Valley National Park.

Kaziranga National Park

In News

- Artificial highlands where animals can escape during floods; more than 200 anti-poaching camps; alternate livelihood training for local communities – these measures at the Kaziranga National Park in Assam will form the cornerstone of an Indo-French initiative announced earlier this year.



Details

- With French and Indian technical and financial support, the Indo-Pacific Parks Partnership will facilitate partnership activities for interested natural parks of the Indo-Pacific region.
- These activities include biodiversity conservation, wildlife management and engagement with local communities.
- **The Kaziranga project is a part of a larger Assam Project on Forest and Biodiversity Conservation (APFBC) for which the AgenceFrançaise de Développement (AFD) has committed funding of €80.2 million for a 10-year period, between 2014-2024.**
- The project conceptualised the reforestation of 33,500 hectares of land and the training of 10,000 community members in alternate livelihoods by 2024. But it is the 457 sq km Kaziranga National Park that remains the heart of the programme.

About KNP

- Kaziranga National park's is home to more than 2200 Indian **one-horned rhinoceros**, approximately **2/3rd of their total world population.**
- It is located in the edge of the **Eastern Himalayan biodiversity hotspots –** Golaghat and Nagaon district.
- In 1985, it was declared as a **World Heritage Site by UNESCO.**
- **It was declared as Tiger Reserve in 2006.**
- It is recognized as an **Important Bird Area by BirdLife International** for the conservation of avifaunal species.

Koundinya Wildlife Sanctuary

Context

- An 18-member herd of all female elephants from the forests of Gudiyattam and Pernambattu of Tamil Nadu are currently on the prowl in the Koundinya wildlife sanctuary zone in Chittoor district, apparently "in search of mates".

Details

- It is located in Palamner - Kuppam forest ranges of Chittoor district of Andhra Pradesh- **only home for Asiatic elephants in the State of Andhra Pradesh**.
- This Sanctuary comes under **Project elephant**.

Wren Babblers

Context

- Six birdwatchers trekked to a peak in Arunachal Pradesh's Changlang district in search of the rare and elusive grey-bellied wren babbler. They recorded a potentially new species of songbird they named after the Lisu, the local community.

Details

- **The grey-bellied wren babbler is mostly found in Myanmar with some birds occurring in adjoining China and Thailand.**
- There has been only one previous report of this bird from India when two specimens were collected from Mugafi close to the Myanmar border in 1988.
- The belly of grey-bellied wren babbler is grey. But all the photos they showed birds with a whitish belly.
- When all the information was put together, the birdwatchers realised they have probably documented a new bird for science

– at least a new subspecies, but more likely a new species. The plumage in conjunction with the songs do not match with any known species.

- Establishing and naming a species or subspecies scientifically requires genetic material from these birds to be compared against other wren babbler species. But the team named the bird Lisu wren babbler.

Asian Giant Tortoise

Context

- Ten captive-bred Asian Giant Tortoise (*Manouriaemys*) juveniles were released into a protected area of Nagaland.

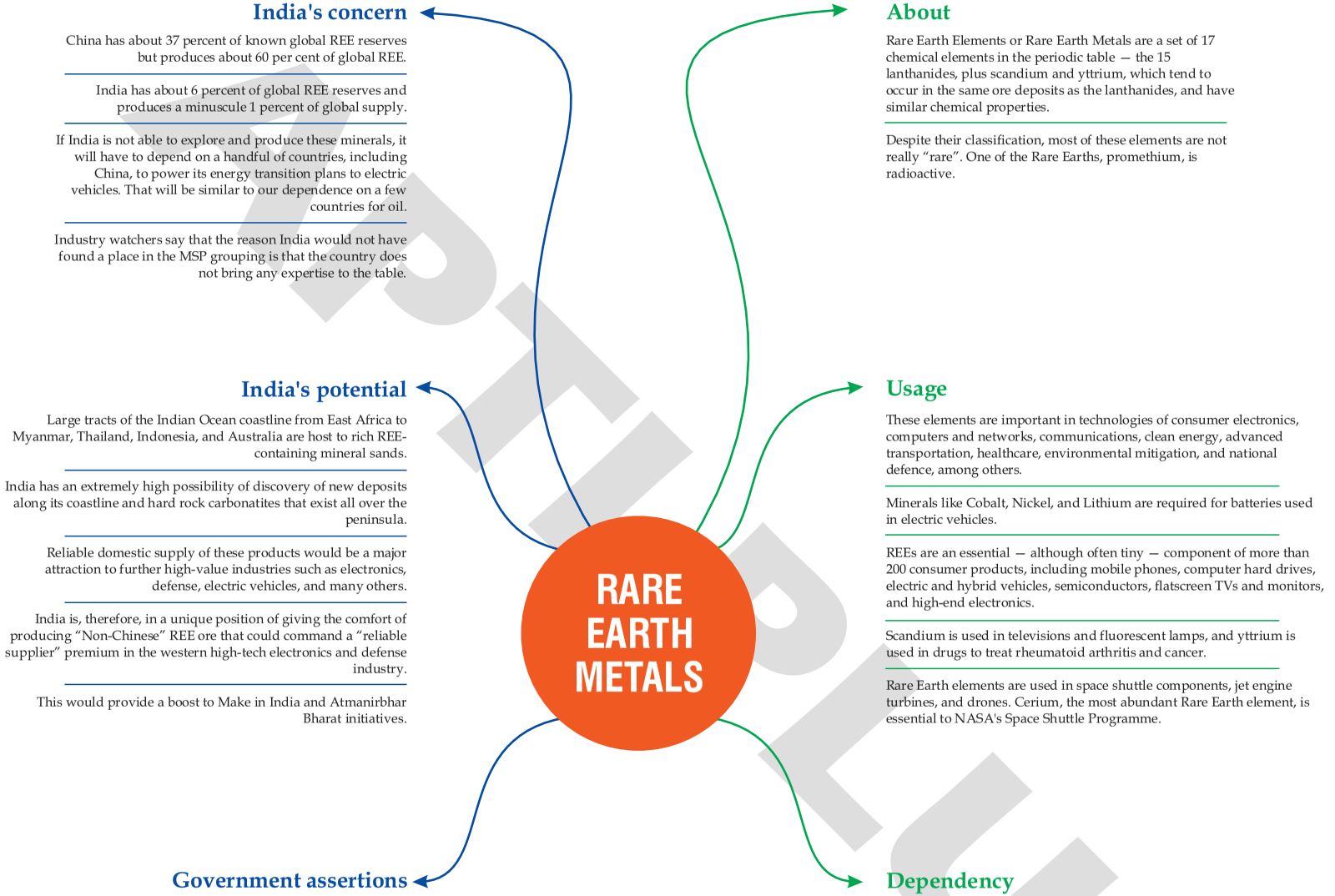
Details

- The Asian Giant Tortoise is listed as 'critically endangered' under the International Union for Conservation of Nature Red List of Threatened Species.
- They are found in Bangladesh, India, Indonesia, and Malaysia and other places.
- CITES :Appendix II, Indian Wildlife (Protection) Act of 1972 : Schedule IV
- Soft release is a process of gradually releasing captive-raised species into the wild. The method helps the species to develop site fidelity among released individuals and eventually develop the habit to live in the vicinity of the release closure.
- With 110 hatchlings and juveniles from 13 adults, the Nagaland Zoological Park has the highest number of Asian Giant Tortoise. The juveniles were born in 2018 and have an average weight of 2.4 kilogrammes.
- The rewilding attempt also aims at collecting scientific information and developing a better rewilding strategy. The exercise will produce the first-ever baseline information for developing the long-term monitoring and eventual release strategy for species supplementation on the regional scale.
- Over-exploitation and unsustainable use for consumption by local communities resulted in the species being pushed to the brink of extinction.
- Intanki National Parkis also known as the Ntangki National Park, which was established by British administrators in the year 1923.

Tortoises and Turtles

- India is home to 29 freshwater turtles and tortoise species of the 356 turtle species recognised worldwide and around 80 per cent of them are threatened, according to a 2020 study published in journal *Reptile and Amphibians conservation and Natural History*.
- **In India, keeping indigenous turtles as pets is prohibited under the wildlife protection act.** But the foreign breeds are not restricted and are kept as pets in many families across India.

DIFFERENCE	
Turtle	**Tortoise**
Most turtles are primarily water-dwelling reptiles	Tortoises are land-dwelling reptiles
Turtles are usually omnivores	Tortoises are primarily herbivores
Turtles generally have lighter shells on their backs	Tortoises have much heavier and robust shells
Not all turtles are Tortoises	All tortoises are turtles, as they belong to the order Testudines
Turtles usually have a shorter life span from 20-40 years	Tortoises usually have a long life from 80-150 years


RARE EARTH METALS
About
Rare Earth Elements or Rare Earth Metals are a set of 17 chemical elements in the periodic table — the 15 lanthanides, plus scandium and yttrium, which tend to occur in the same ore deposits as the lanthanides, and have similar chemical properties.
Despite their classification, most of these elements are not really "rare". One of the Rare Earths, promethium, is radioactive.
Usage
These elements are important in technologies of consumer electronics, computers and networks, communications, clean energy, advanced transportation, healthcare, environmental mitigation, and national defence, among others.
Minerals like Cobalt, Nickel, and Lithium are required for batteries used in electric vehicles.
REEs are an essential — although often tiny — component of more than 200 consumer products, including mobile phones, computer hard drives, electric and hybrid vehicles, semiconductors, flatscreen TVs and monitors, and high-end electronics.
Scandium is used in televisions and fluorescent lamps, and yttrium is used in drugs to treat rheumatoid arthritis and cancer.
Rare Earth elements are used in space shuttle components, jet engine turbines, and drones. Cerium, the most abundant Rare Earth element, is essential to NASA's Space Shuttle Programme.
Dependency
Some REEs are available in India — such as Lanthanum, Cerium, Neodymium, Praseodymium and Samarium, etc.
Others such as Dysprosium, Terbium, and Europium, which are classified as HREEs, are not available in Indian deposits in extractable quantities.
Hence, there is a dependence on countries such as China for HREEs, which is one of the leading producers of REEs, with an estimated 70 per cent share of the global production.
Government assertions
In India, capacity and capabilities in terms of mining, processing, extraction, refining and production of high pure RE oxides is adequately available.
The production of Monazite the primary source of rare earth mineral in India is around 4000 MT per annum.
As on September 2022, Atomic Minerals Directorate for Exploration and Research (AMD) has established
13.07 million tonnes in-situ monazite (containing ~55-60% total Rare Earth Elements oxide) resource occurring in the coastal beach placer sands in parts of Kerala, Tamil Nadu, Odisha, Andhra Pradesh, Maharashtra and Gujarat and in the inland placers in parts of Jharkhand, West Bengal and Tamil Nadu.
India's potential
Large tracts of the Indian Ocean coastline from East Africa to Myanmar, Thailand, Indonesia, and Australia are host to rich REE-containing mineral sands.
India has an extremely high possibility of discovery of new deposits along its coastline and hard rock carbonatites that exist all over the peninsula.
Reliable domestic supply of these products would be a major attraction to further high-value industries such as electronics, defense, electric vehicles, and many others.
India is, therefore, in a unique position of giving the comfort of producing "Non-Chinese" REE ore that could command a "reliable supplier" premium in the western high-tech electronics and defense industry.
This would provide a boost to Make in India and Atmanirbhar Bharat initiatives.
India's concern
China has about 37 percent of known global REE reserves but produces about 60 per cent of global REE.
India has about 6 percent of global REE reserves and produces a minuscule 1 percent of global supply.
If India is not able to explore and produce these minerals, it will have to depend on a handful of countries, including China, to power its energy transition plans to electric vehicles. That will be similar to our dependence on a few countries for oil.
Industry watchers say that the reason India would not have found a place in the MSP grouping is that the country does not bring any expertise to the table.

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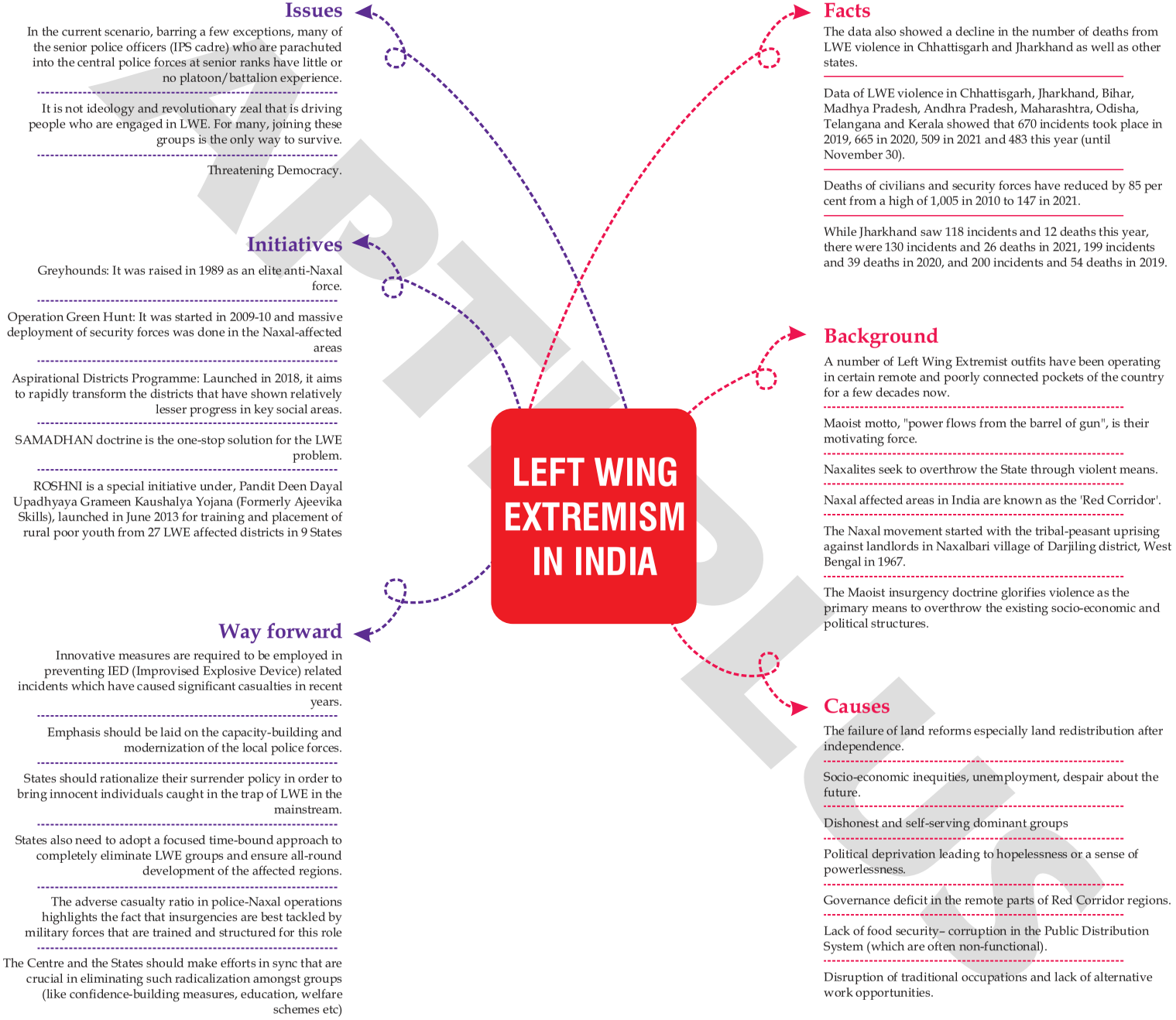

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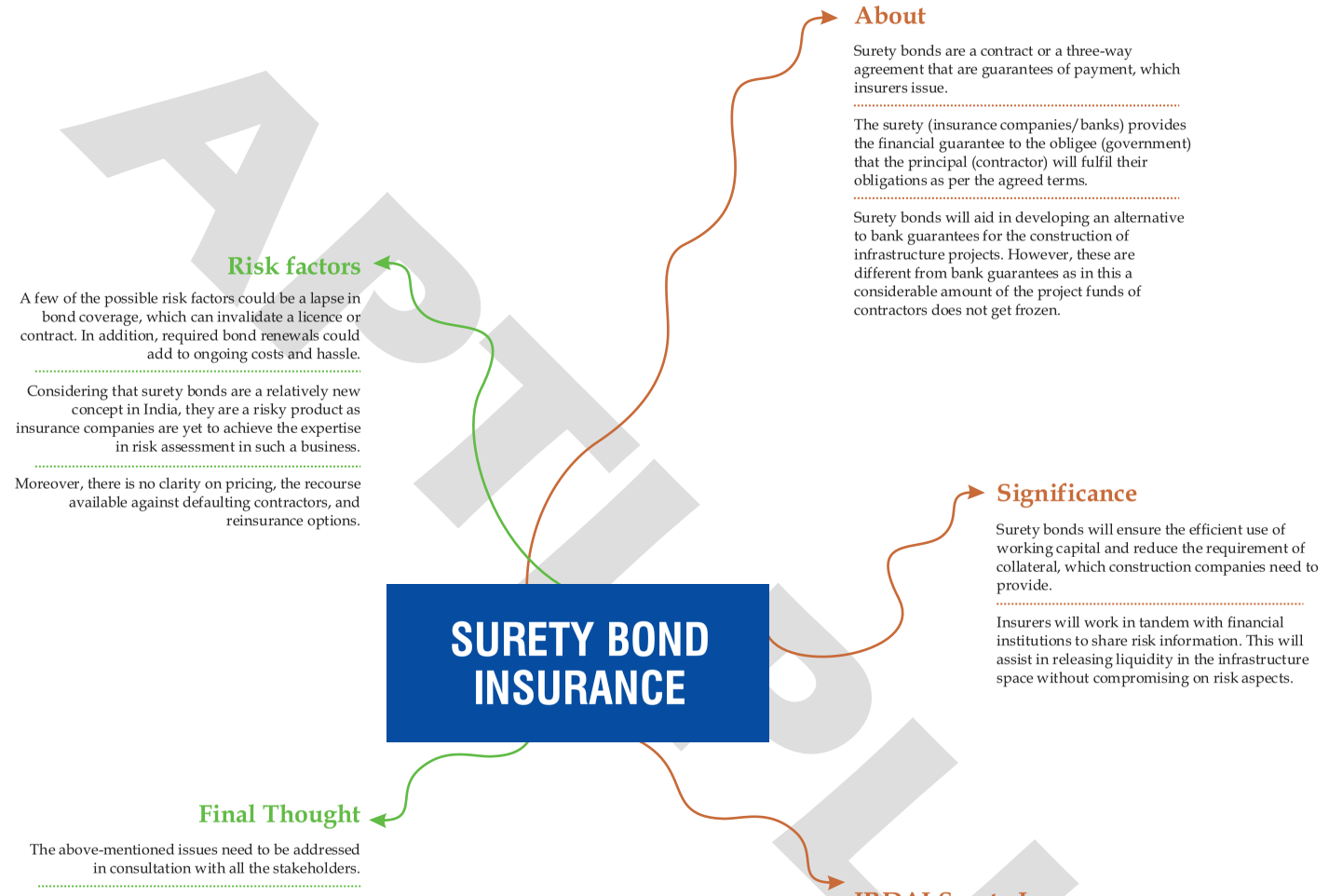
Academy for Civil Services Pvt. Ltd.


SURETY BOND INSURANCE
About
Surety bonds are a contract or a three-way agreement that are guarantees of payment, which insurers issue.
The surety (insurance companies/banks) provides the financial guarantee to the obligee (government) that the principal (contractor) will fulfil their obligations as per the agreed terms.
Surety bonds will aid in developing an alternative to bank guarantees for the construction of infrastructure projects. However, these are different from bank guarantees as in this a considerable amount of the project funds of contractors does not get frozen.
Risk factors
A few of the possible risk factors could be a lapse in bond coverage, which can invalidate a licence or contract. In addition, required bond renewals could add to ongoing costs and hassle.
Considering that surety bonds are a relatively new concept in India, they are a risky product as insurance companies are yet to achieve the expertise in risk assessment in such a business.
Moreover, there is no clarity on pricing, the recourse available against defaulting contractors, and reinsurance options.
Significance
Surety bonds will ensure the efficient use of working capital and reduce the requirement of collateral, which construction companies need to provide.
Insurers will work in tandem with financial institutions to share risk information. This will assist in releasing liquidity in the infrastructure space without compromising on risk aspects.
Final Thought
The above-mentioned issues need to be addressed in consultation with all the stakeholders.
That's apart this product launch is in line with the government's vision to up-scale the infrastructure development in the country to increase the pace of development of upcoming projects.
The government of India is making concerted efforts to implement measures that will accelerate the development of infrastructure in India and Surety Bond Insurance is a decisive step in this direction.
IRDAI Surety Insurance Contracts Guidelines, 2022
As per the guidelines, the premium charged for all surety insurance policies underwritten in a financial year, including all instalments due in subsequent years for those policies, should not exceed 10% of the total gross written premium of that year, subject to a maximum of Rs 500 crore.
Also, insurers can issue contract bonds, which assure the public entity, developers, subcontractors, and suppliers that the contractor will fulfil its contractual obligation while undertaking the project.
Bonds that surety insurance covers include contract bonds, bid bonds, performance bonds, advance payment bonds, custom and court bonds and retention money.
The limit of the guarantee should not exceed 30% of the contract value. Finally, surety insurance contracts should be issued only to specific projects and not clubbed for multiple projects.

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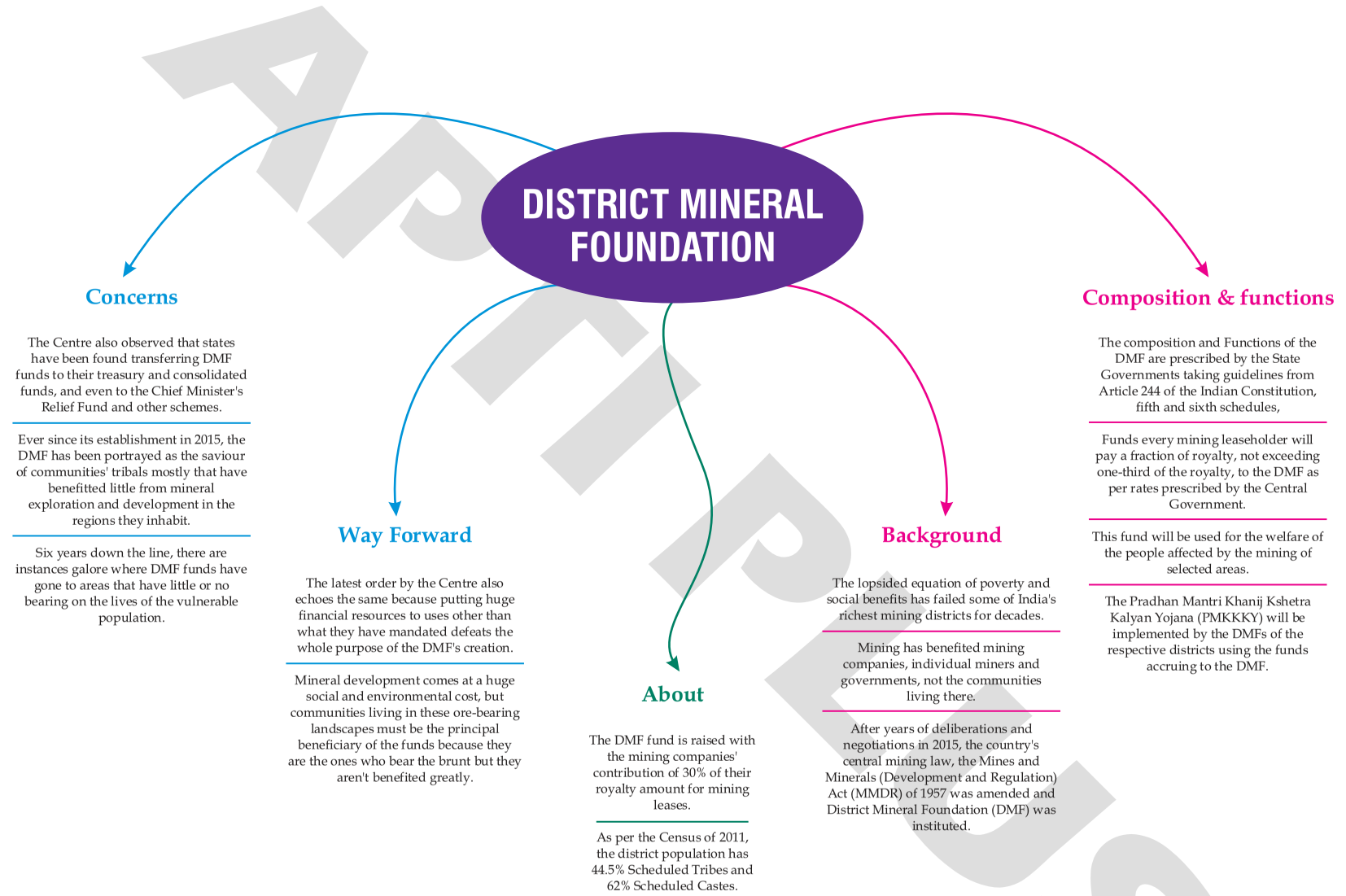
DISTRICT MINERAL FOUNDATION
Concerns
The Centre also observed that states have been found transferring DMF funds to their treasury and consolidated funds, and even to the Chief Minister's Relief Fund and other schemes.
Ever since its establishment in 2015, the DMF has been portrayed as the saviour of communities' tribals mostly that have benefitted little from mineral exploration and development in the regions they inhabit.
Six years down the line, there are instances galore where DMF funds have gone to areas that have little or no bearing on the lives of the vulnerable population.
Way Forward
The latest order by the Centre also echoes the same because putting huge financial resources to uses other than what they have mandated defeats the whole purpose of the DMF's creation.
Mineral development comes at a huge social and environmental cost, but communities living in these ore-bearing landscapes must be the principal beneficiary of the funds because they are the ones who bear the brunt but they aren't benefited greatly.
About
The DMF fund is raised with the mining companies' contribution of 30% of their royalty amount for mining leases.
As per the Census of 2011, the district population has 44.5% Scheduled Tribes and 62% Scheduled Castes.
Background
The lopsided equation of poverty and social benefits has failed some of India's richest mining districts for decades.
Mining has benefited mining companies, individual miners and governments, not the communities living there.
After years of deliberations and negotiations in 2015, the country's central mining law, the Mines and Minerals (Development and Regulation) Act (MMDR) of 1957 was amended and District Mineral Foundation (DMF) was instituted.
Composition & functions
The composition and Functions of the DMF are prescribed by the State Governments taking guidelines from Article 244 of the Indian Constitution, fifth and sixth schedules,
Funds every mining leaseholder will pay a fraction of royalty, not exceeding one-third of the royalty, to the DMF as per rates prescribed by the Central Government.
This fund will be used for the welfare of the people affected by the mining of selected areas.
The Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) will be implemented by the DMFs of the respective districts using the funds accruing to the DMF.

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NEW INDIA LITERACY PROGRAMME

In News

The Minister of State for Education informed the Lok Sabha that the Union Government has announced a Centrally Sponsored Scheme "New India Literacy Programme" that aims to cover a target of 5 crore learners under the Foundational Literacy and Numeracy component.

About

The Union Government has approved the "New India Literacy Programme (NILP)" intending to support the States and Union Territories in promoting literacy among non-literates in the age group of 15 and above, across the country covering 5 crore non-literates during the implementation period from 2022-23 to 2026-27.

The scheme has been approved with a financial outlay of Rs.1037.90 crore including a Central share of Rs.700.00 crore and a State share of Rs.337.90 crore.

Objectives

To Provide Foundational literacy and numeracy

Promote Critical life skills: Financial literacy, Digital literacy, Commercial skills, Health care and awareness, Child care and education, and Family welfare.

The scheme will cover non-literates of the age of 15 years and above in all states/UTs in the country.

To cover 5 crore learners (1 crore per year) by using the "Online Teaching, Learning and Assessment System (OTLAS)" in collaboration with National Informatics Center.

Way forward

GIAN Initiative invites distinguished academicians, entrepreneurs, scientists, and experts from premier institutions from across the world to teach in higher educational institutions in India.

SWAYAM Portal for Online Courses.

SWAYAM Prabha Provide HD educational Channels through DTH on a 24X7 basis.

Sodhganga to develop a national repository of universities in India, digital Study material for higher education.

SamagraShiksha Scheme to ensure inclusive and equitable quality education at all levels of School education.

Challenges

India has achieved universal enrollment at the elementary level. This is a great achievement, but getting Students to School is only the beginning of human Capital formation.

Broken Governance System. There are few rewards for being a good teacher and few Punishments for being a Careless one. Need more effective and accountable governance Systems.

Poor quality of facilities, Shortage of qualified faculty.

Date Curriculum, Limited university-industry Partnership.

Features

The term "Adult Education" is to be replaced with "Education For All".

The scheme will be implemented through volunteerism through online mode.

All materials and resources shall be provided digitally.

Different strategies are to be adopted for different age groups. Flexibility for States/UTs will be provided to undertake innovative

Performance Grading Index (PGI) for State/UT and district level will show the performance of States and UTs on yearly basis by weighing both the physical and financial progress through the UDISE portal.

Assessment tests to be conducted in schools by State/UTs and evaluation of learners by NIOS/SIOS; assessment on demand through OTLAS and generation of e-certificates

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RELIGIOUS CONVERSION

Arguments against

According to some activists, "Such laws are used to target religious minorities and interfaith couples".

These laws would be used to target even voluntary conversions and curb the fundamental rights of "Freedom of conscience" under Article 25.

These Acts do not satisfy the test of reasonableness and fairness and also go against the fundamental rights under Article 14 and Article 21" of the Constitution.

Context

The Supreme Court of India took serious note of a religious organisation's objections to "scurrilous, vexatious and scandalous" allegations made against minority religions by a petitioner in his case alleging "massive" forcible religious conversions.

The court stated that It will give a wrong signal to the minority community if Supreme Court allow this type of language in the petition.

The court asked the petitioner to remove the offending language.

Arguments in favour

These laws only ban and punish forceful religious conversion.

Fundamental rights under Article 25 'Right to propagate a religion" did not extend to forced conversions. There is no fundamental right to convert another person to one's religion.

About

Every individual has a natural entitlement to religious faith and freedom of conscience, a right to adopt or abandoned any faith of his own choice. Religious conversion means adopting a new religion, a religion that is different from his previous religion or religion at his birth.

At the central level, India does not have any law which provides any sanction in case of forcible conversions. In 1954, an attempt was made to pass the Indian Conversion (regulation and registration bill) but Parliament failed to pass it due to heavy opposition. The need of the hour is to pass a strict anti-conversion bill to curb forced conversion in society.

Reasons behind religious conversion:

- Conversion by force.
- Conversion by offering a better life. It means offering economic incentives for one to come out of the religion.
- Conversion for marriage.
- Conversion to escape the rigid hierarchical system caste system.

Way forward

Anti-conversion laws have been challenged in courts ever since Odisha moved the first such legislation in 1967. However, the courts have a mixed record defending the freedom of choice about religion, ruling in favour of individual liberty in some cases but not in others.

The High Court on many occasions clearly said that while a person has the right to believe and the right to change their beliefs, they also have a right to keep their beliefs secret.

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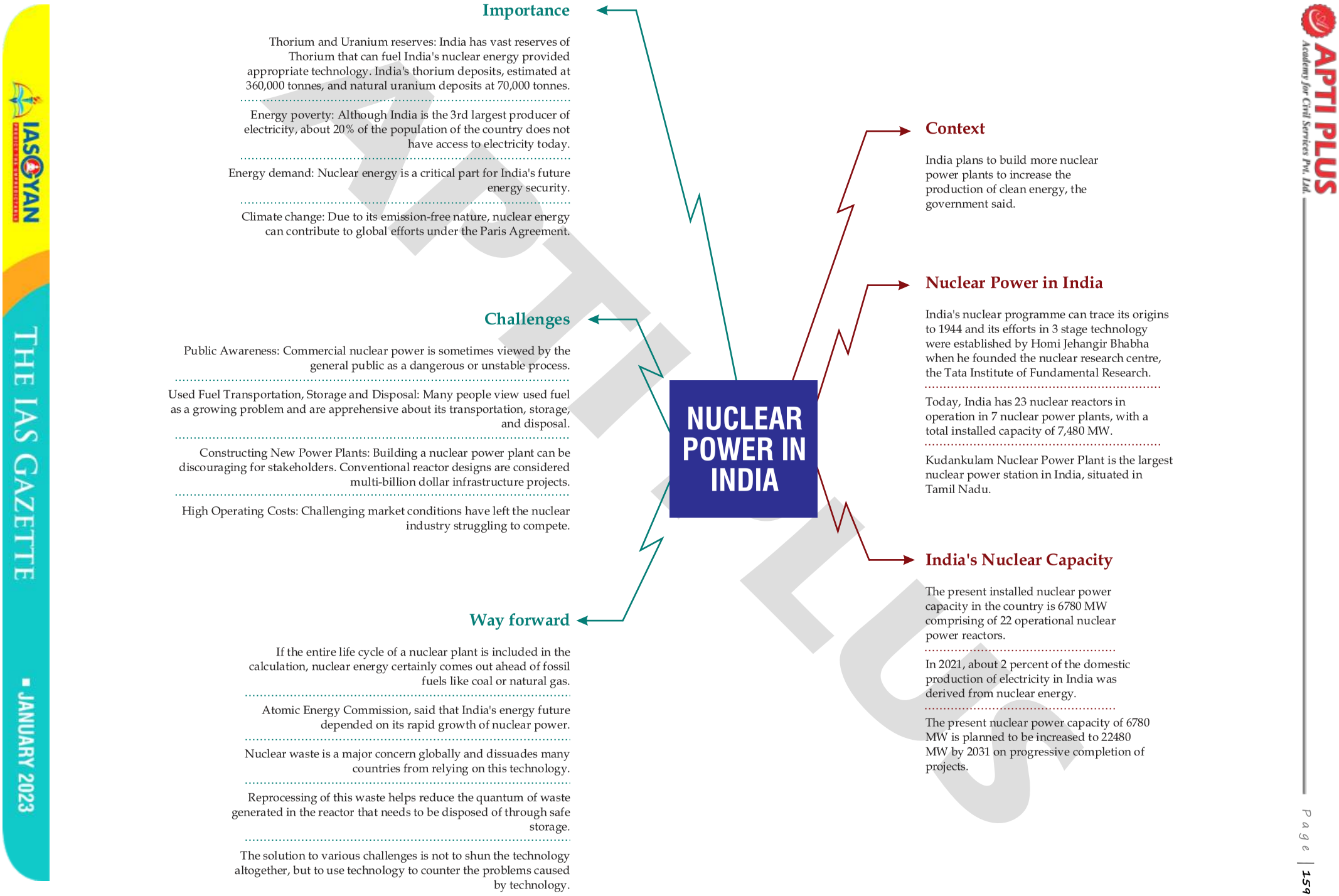
NUCLEAR POWER IN INDIA
Importance
Thorium and Uranium reserves: India has vast reserves of Thorium that can fuel India's nuclear energy provided appropriate technology. India's thorium deposits, estimated at 360,000 tonnes, and natural uranium deposits at 70,000 tonnes.
Energy poverty: Although India is the 3rd largest producer of electricity, about 20% of the population of the country does not have access to electricity today.
Energy demand: Nuclear energy is a critical part for India's future energy security.
Climate change: Due to its emission-free nature, nuclear energy can contribute to global efforts under the Paris Agreement.
Challenges
Public Awareness: Commercial nuclear power is sometimes viewed by the general public as a dangerous or unstable process.
Used Fuel Transportation, Storage and Disposal: Many people view used fuel as a growing problem and are apprehensive about its transportation, storage, and disposal.
Constructing New Power Plants: Building a nuclear power plant can be discouraging for stakeholders. Conventional reactor designs are considered multi-billion dollar infrastructure projects.
High Operating Costs: Challenging market conditions have left the nuclear industry struggling to compete.
Way forward
If the entire life cycle of a nuclear plant is included in the calculation, nuclear energy certainly comes out ahead of fossil fuels like coal or natural gas.
Atomic Energy Commission, said that India's energy future depended on its rapid growth of nuclear power.
Nuclear waste is a major concern globally and dissuades many countries from relying on this technology.
Reprocessing of this waste helps reduce the quantum of waste generated in the reactor that needs to be disposed of through safe storage.
The solution to various challenges is not to shun the technology altogether, but to use technology to counter the problems caused by technology.
Context
India plans to build more nuclear power plants to increase the production of clean energy, the government said.
Nuclear Power in India
India's nuclear programme can trace its origins to 1944 and its efforts in 3 stage technology were established by Homi Jehangir Bhabha when he founded the nuclear research centre, the Tata Institute of Fundamental Research.
Today, India has 23 nuclear reactors in operation in 7 nuclear power plants, with a total installed capacity of 7,480 MW.
Kudankulam Nuclear Power Plant is the largest nuclear power station in India, situated in Tamil Nadu.
India's Nuclear Capacity
The present installed nuclear power capacity in the country is 6780 MW comprising of 22 operational nuclear power reactors.
In 2021, about 2 percent of the domestic production of electricity in India was derived from nuclear energy.
The present nuclear power capacity of 6780 MW is planned to be increased to 22480 MW by 2031 on progressive completion of projects.

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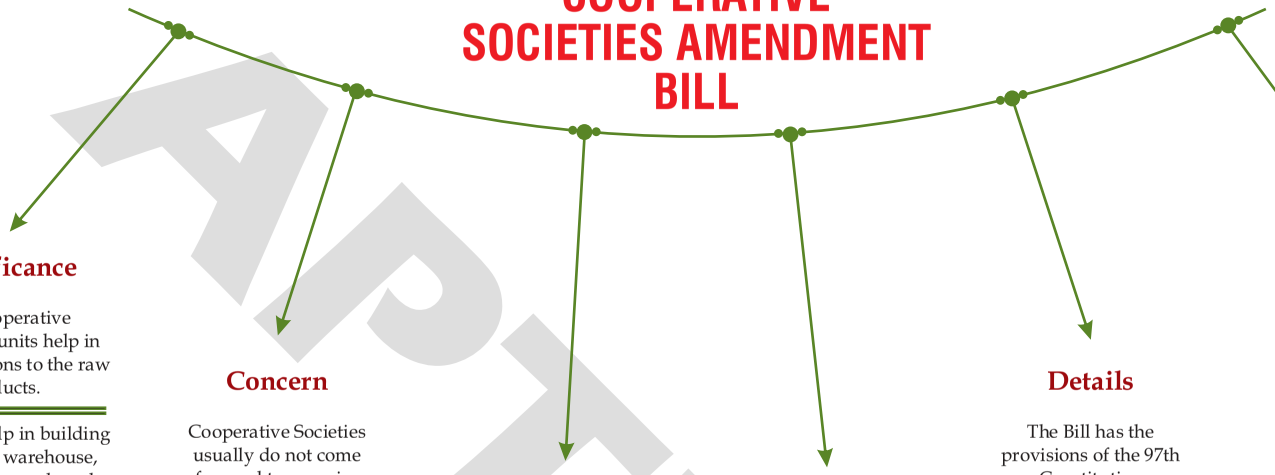
COOPERATIVE SOCIETIES AMENDMENT BILL



Significance

The Cooperative processing units help in value additions to the raw products.

They also help in building up storage, warehouse, cold storage, rural roads and in providing facilities like irrigation, electricity, transport, education and health.

They play the role of a balancing factor between the public and private sectors and also supplement the work of the government and its agencies.

They play an important role in poverty reduction, promoting women's empowerment, and improving literacy rate and skill development.

Concern

Cooperative Societies usually do not come forward to organise cooperatives of their consensus, many times it is done by the government or local administration.

The cooperatives have limited resources.

They grant loans only for agricultural operations. Farmers approach the money lenders to meet their other requirements.

Lack of co-operation, as the people rarely understand the importance of cooperation in their lives. The absence of willing cooperation on their part hinders the growth of the cooperative movement.

Political interference acts as a barrier to the growth of cooperative societies.

Poor performance, increasing debt and overdue, inefficient administration and management of Cooperative societies.

Way forward

Need to ensure transparency in the processes and independence in the functioning of Boards.

Good Cooperative management includes setting up clear objectives, accountability, sound planning, and establishing performance evaluation measures.

The objectives of the cooperative societies must be recognized in their long-term strategy.

Increase access to competitive and affordable external financing.

Better operational and financial performance through improved strategic decision-making.

In News

The Union Government has introduced the Multi-State Cooperative Societies (Amendment) Bill, 2022 in the loksabha.

The amendment bill aims to make the governance of multi-State cooperative societies more democratic, transparent and accountable.

Details

The Bill has the provisions of the 97th Constitution Amendment act which provides Constitutional status and protection to cooperative societies.

It aims to improve the composition of boards and ensure fiscal discipline.

The Bill has provisions for setting up a Cooperative Election Authority, a Cooperative Information Officer and a Cooperative Ombudsman.

Provisions relating to the representation of women and Scheduled Caste/Scheduled Tribe members on the boards of multi-State cooperative societies have been included to promote equity and facilitate inclusiveness.

In India

A Cooperative Society can be defined as a voluntary association of individuals united voluntarily to meet their common economic, social, and cultural Interests.

The roots of cooperative Societies in India were sown when the first Cooperative Societies Act was passed in 1904.

National Cooperative Development Corporation (NCDC) was set up under the National Cooperative Development Corporation Act, of 1962.

Union Government announced a National Policy on Cooperatives in 2002.

The 97th Constitutional Amendment Act of 2011 granted constitutional status and protection to cooperative societies.

The functional directors of a cooperative society shall also be the members of the board and such members shall be excluded to count the total number of directors (21).

The term of office of elected members of the board and its office bearers shall be 5 years from the date of the election.

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