



# CURRENT AFFAIRS

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August 2023

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August 2023

## Chapter

## 1

# Art & Culture

## National Maritime Heritage Complex

### Why in News

- Government to Develop National Maritime Heritage Complex in Lothal, Gujarat

### Important Points

- A National Maritime Heritage Complex (NMHC) will be developed in Gujarat at a cost of Rs 4,500 crore under the government's Sagarmala programme.
- NMHC would be developed as an international tourist destination at Lothal, where the maritime heritage of India from ancient to modern times would be showcased and an "edutainment ap-proach" using the latest technology would be adopted to spread awareness about the country's maritime heritage.
- The maritime complex will include world's highest light house museum, world's largest open aquatic gallery, India's grandest naval museum and is envisaged to be one of the biggest international tourist destinations in the world.
- The boost to the tourism potential through this project will also augment the economic development of the region.
- It will have several innovative and unique features such as Lothal mini recreation to recreate Harappan architecture and lifestyle; four theme parks - Memorial theme park, Maritime and Navy theme park, Climate theme park and Adventure and Amusement theme park; fourteen galleries highlighting India's maritime heritage starting from the Harappan times till now; Coastal states pavilion displaying diverse maritime heritage of states and UTs; among others.
- It is funded by MoPSW and Ministry of Culture through National Culture Fund by way of grant.



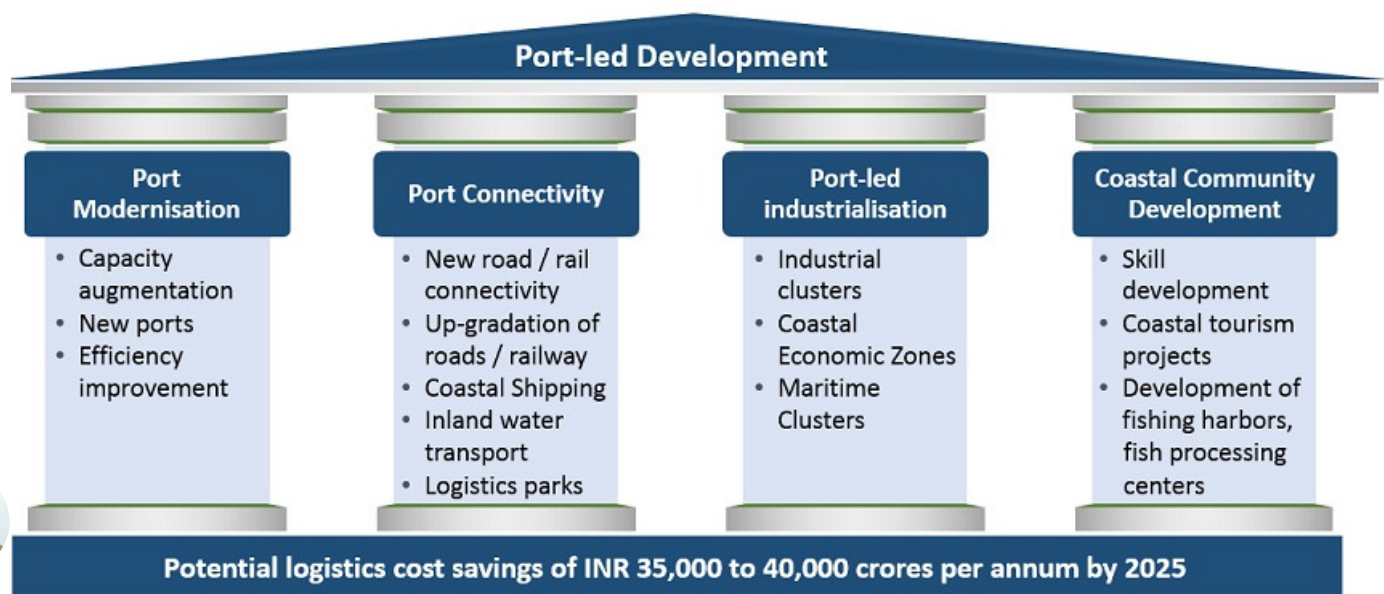
### About Lothal

- Lothal, prominent city of Indus-Valley Civilization (IVC), had the oldest man-made dry-dock dating back to 2400 BC.
- It is located between Bhogavo and Sabarmati rivers near Gulf of Khambat.
- The city's construction is said to have begun about 2200 BCE.
- It was nominated to be enlisted as a UNESCO World Heritage Site in 2014 and its application is pending on tentative list of UNESCO.
- IVC aka Harappan Civilization was home to largest of four ancient urban civilizations of Egypt, Mesopotamia, India and China.
- It thrived about 2,500 BC in western South Asia, which now is Pakistan and northwest India.
- In 1954-63, archaeologist S.R. Rao led expeditions that found a number of Harappan sites, notably the harbour city of Lothal.
- Lothal was at the centre of the Harappan maritime commerce, and beads made of semi-precious stones, terracotta, gold, and other materials were popular as far away as Sumer (modern-day Iraq), Bahrain, and Iran.
- Lothal was a bustling manufacturing centre that imported pure copper and made bronze celts, chis-els, spearheads, and decorations.

## About Sagarmala Programme

- The Sagarmala programme is the flagship programme of the Ministry of Shipping to promote port-led development in the country through harnessing India's 7,500 km long coastline, 14,500 km of potentially navigable waterways and strategic location on key international maritime trade routes.
- The main vision of the Sagarmala Programme is to reduce logistics cost for EXIM and domestic trade with minimal infrastructure investment.
- Sagarmala Programme was approved by the Union Cabinet in March 2015 and a National Perspective Plan was prepared by the Ministry of Shipping which was released on 14th April 2016.

### The Four Pillars of Sagarmala



## Hul Diwas

### Why in News

- In state of Jharkhand, June 30 is celebrated as Hul Diwas.

### Important Points

- On Hul Diwas, Indian PM, through a tweet, remembered Santhal rebellion and sacrifice made by adiwasis in their fight against British colonial authorities.
- Hul Diwas marks the beginning of the Santhal rebellion.
- Santhals are also referred as Santal by some experts.
- Hul Diwas celebrated in Jharkhand People across the state remembered the martyr Sido Kanhu.
- Before the Sepoy Mutiny of 1857, on 30 June 1855, there was a Santhal Hul under the leadership of Sido Kanhu against the British rule and exploitation.
- In which thousands of heroes were martyred.



### Santhals during Indian Freedom Struggle

- In late 18th century, the Santal people –migrated to Santhal Pargana (currently in districts of Dumka, Pakur, Godda, Sahibganj, Deoghar and parts of Jamtara) from the West Bengal (Birbhum and Manbhum).
- The main reason for migration was the 1770 famine in Bengal.
- British settled them in Damin-i-Koh region for the purpose of collecting tax and generating revenue.
- They were further exploited by money-lenders and the police.

- Today, the Santal community is the third largest tribal community in India, spread across Jhar-khand-Bihar, Odisha and West Bengal.
- The adverse social and economic conditions of Santals were the main cause of revolt as observed by Calcutta Review.
- Oppressive extortions, forced eviction from land, abuse and personal violence by Zamindars, the po-lice, the revenue and court were the common occurrence.
- In tribal councils and meetings, discussion surrounding the adverse exploitation and rebellion were frequent by 1854.
- Finally 6,000 Santhals from 400 villages were gathered in an assembly held on June 30, 1855 and de-clared autonomy from the British.
- Two brothers Sidhu and Kanhu made leader to mobilize Santal people across the region.
- Participation of Santals in revolt was massive, approximately 60,000 Santhals, and many of them took up arms.
- Many non-Adivasi Hindu castes also participated.
- Moneylenders and zamindars were killed or forced to evict the region.
- Many police stations, railway stations and post offices were attacked and burnt.

## Alluri Sitarama Raju

### Why in News

- President of India Graces the Closing Ceremony of 125th Birth Anniversary of Alluri Sitarama Raju

#### Important Points

- Born on July 4, 1897, Alluri Sitarama Raju is remembered for his fight against the British, in order to safeguard the interests of the tribal communities in the Eastern Ghats region (in Andhra Pra-desh).
- He had led the Rampa rebellion, which was launched in 1922. He is referred to as “Manyam Veerudu” (Hero of the Jungles) by the locals.
- In August 1922, he launched what is now known as the Rampa Rebellion against the British.
- The Rampa administrative area was home to about 28,000 tribes.
- These tribes followed the ‘Podu’ system of cultivation, whereby every year some amounts of forest tracts were cleared for cultivation, as it was their only source for food.
- To get the forests cleared, ‘The Madras Forest Act, 1882’ was passed, thereby restricting the free movement of the tribal communities and prohibiting them from engaging in their traditional Podu agricultural system.
- This oppressive order was the beginning of the tribal revolt, also known as the Manyam Rebellion.
- The tribal folk refused to work as forced labour in the construction of roads and railway lines in the hilly region.
- Sitarama Raju demanded justice for them. He used guerrilla warfare to fight against the British.
- Along with his army of tribal people, he launched attacks and raided numerous police stations, killed many British officers, and stole arms and ammunition for their battle.
- He had plenty of local support and hence successfully evaded the British for a long time.
- His two-year armed struggle (1922-24) against the British frustrated the authorities to such an extent that a reward of Rs.10,000/- was announced for anyone who could capture him dead or alive.
- On 07 May 1924, he was treacherously trapped, tied to a tree, and shot dead. He was cremated on 08 May, thus marking the end of his glorious fight against the British Government.



## Bhoomi Samman Awards

### Why in News

- Recently, the President of India presented the “Bhoomi Samman” 2023 at a function organised by the Union Ministry of Rural Development in New Delhi

## Important Points

- The 9 state Secretaries and 68 District Collectors were presented with “Bhoomi Samman awards who have excelled in achieving saturation of the core components of Digital India Land Records Modernization Programme (DILRMP).

### Bhoomi Samman Awards :

- It aims to acknowledge and encourage outstanding performance in the implementation of the Digital India Land Records Modernization Programme (DILRMP).
- Madhya Pradesh has secured the first position in the field of Digital India Land Records modernization in the country.
- 15 districts of Madhya Pradesh have been awarded Platinum Grading for 100 percent achievement in all the components of Digital India Land Records Management Programme.
- It is a fine example of Centre-State cooperative federalism based on trust and partnership, as the grading system is largely based on reports and inputs of the States/UTs in the core components of computerization and digitization of land records.



## Facts about DILRMP

- It is a central sector scheme being implemented by the Department of Land Resources under the Ministry of Rural Development.
- Aim: It attempts to build upon the commonalities that exist in the arena of land records in various States to develop an appropriate Integrated Land Information Management System (ILIMS) across the country.
- The ILIMS integrates all the processes and lands records databases with the banks, financial institutions, circle rates, Registration Offices and other sectors.
- Major components: Computerization of land records, Survey/re-survey, Computerization of Registration.

## Hampi Group of Monuments

### Why in News

- Recently Hampi Group of Monuments are inscribed as UNESCO World heritage Site.

## Important Points

- A World Heritage Site is a place that is listed by UNESCO for its special cultural or physical significance. The list of World Heritage Sites is maintained by the international ‘World Heritage Programme’, administered by the UNESCO World Heritage Committee.
- The UNESCO World Heritage Committee is composed of 21 UNESCO member states, elected by the General Assembly.

### How is a World Heritage Site selected ?

- The first step towards the listing is the nomination of a site by the respective government of a country.
- The site should have an Outstanding Universal Value (OUV) for World Heritage nomination.
- To determine the Outstanding Universal Value (OUV) for World Heritage nomination, there are ten enlisted criteria.
- The proposed nomination must satisfy at least one of these ten criteria.
- The Nomination File is then evaluated by the International Council on Monuments and Sites and the World Conservation Union.
- These bodies then make their recommendations to the World Heritage Committee.
- The Committee meets once per year to determine whether or not to inscribe each nominated property on the World Heritage List and sometimes defers the decision to request more information from the country which nominated the site.





## About Hampi

- Hampi comprise mainly the remnants of Capital City of Vijayanagara Empire (14th-16th Cent CE).
- It is located in Tungabhadra basin in Central Karnataka, Bellary District.
- Surviving remains include forts, riverside features, royal and sacred complexes, temples (Dravidian architecture), shrines, pillared halls, Mandapas etc.
- Famous structure: Vitthla temple, Virupaksha Temple, Krishna temple complex, Narasimha, Ganesa, Hemakuta group of temples etc.
- Another unique feature of temples is wide Chariot streets flanked by the rows of Pillared Mandapas.

## Rudragiri hillock

### Why in News

- Recently, a fascinating combination of prehistoric rock paintings from the Mesolithic period and exquisite artwork from the Kakatiya dynasty were discovered in the Rudragiri hillock.



### Important Points

#### Key findings :

- The first cave presents a narrative mural portraying the intense battle between the Vanara brothers, Vali and Sugriva. Both figures stand on the battlefield wielding maces, their faces displaying fierce determination. Rama, positioned behind Sugriva, shoots arrows at Vali.
- A Ramayana fresco depicting Hanuman lifting the Sanjeevani hill with his right-hand painted a conch and fire altars can be seen to his right and another prehistoric painting to the left.
- In the middle cave, a grand sketch of Hanuman, accompanied by sacred symbols of the conch (Sankha) and the fire altar (Yagna Vedi), captures visitors' attention. Hanuman is depicted carrying the Sanjivani hill in his right hand, symbolising his mission to save Lakshmana's life.
- The third cave houses the prehistoric rock paintings from the Mesolithic era.
- Interestingly, the Kakatiya artist chose the same rock shelter to superimpose the elegant figure of Hanuman, who is portrayed in a unique 'Anjali' posture, folding his hands in a divine offering.

### About Rudragiri caves

- Rudragiri hillock is located in the village of Orvakallu, in Guntur district of Andhra Pradesh.
- The shelters are found in the hillock which earlier was served as living quarters for people during the Mesolithic age around 5000 B.C., and they bear witness to the luminous rock paintings of that era.
- Interestingly, two natural caves at the southern end of the hillock also exhibit exceptional murals from the renowned Kakatiya kingdom.

### Kakatiya Dynasty

- Kakatiyas is a dynasty from Andhra Pradesh that flourished in the 12th century CE. The Kakatiya dynasty ruled from Warangal (Telangana) from CE 1083-1323.
- They were known for the construction of a network of tanks for irrigation and drinking water and thereby gave a big boost to the overall development of the region.
- The Delhi Sultanate's Alauddin Khilji invaded the Kakatiya region in 1303, which resulted in disaster for the Turks.
- The Kakatiya army put up a brave fight against Ulugh Khan's second assault in 1323, but they were ultimately overcome.
- Architecture: A distinctive architectural style was also developed during the Kakatiya era; notable examples include the Warangal Fort, the Thousand Pillar Temple in Hanamkonda, the Ramappa Temple in Palampet, and the Kota Gullu in Ghanpur.
- Inscriptions, including about 1,000 stone inscriptions and 12 copper-plate inscriptions, provide a lot of information about the Kakatiya era.

## Veer Savarkar International Airport

### Why in News

- The Prime Minister inaugurated the New Integrated Terminal Building of Veer Savarkar International Airport.

### Important Points

- The Prime Minister inaugurated the New Integrated Terminal Building of Veer Savarkar International Airport, Port Blair via video conferencing.
- With a construction cost of around Rs 710 crores, the new terminal building is capable of handling about 50 lakh passengers annually.
- It is the main airport of the Andaman and Nicobar Islands of India.
- It is a customs airport located 2 km (1.2 mi) south of Port Blair.
- It is a civil airport, and its facilities are shared with the Indian Navy.
- The terminal is managed by the Airports Authority of India, while the traffic is handled by the Indian Navy.



### About Veer Savarkar

- In his teenage, Savarkar formed a youth organisation named 'Mitra Mela' to bring in national and revolutionary ideas.
- Inspired by Lokmanya Tilak's appeal to boycott British goods and propagate the idea of 'Swadeshi', he burnt out all the foreign goods on Dussehra in 1905.
- Savarkar promoted atheism and rationality and dispersed cow worship as superstitious. He asked his followers, 'Care for cows but do not worship them.'
- In 1909, Savarkar got arrested on charges of planning an armed revolt against the Morle-Minto re-form. He attempted to escape by diving in the water but was caught. In 1911, he was sentenced to 50 years imprisonment in Kala Pani, the cellular jail of Andamans.
- Savarkar is often called a traitor for begging for mercy from the British Government when he was imprisoned. But his supporters claimed that Savarkar just asked to free his followers.
- He was released from Jail in 1924 under strict conditions of not taking part in politics for five years.
- The British Government banned 8 works of Savarkar including the Indian War of Independence 1857, Drama Usshaap, Shraddhanand and Mazzini which was his biography in Marathi.
- In his book Hindutva, Savarkar advocated the idea of two separate nations for Hindus and Muslims. The theory was later passed as a resolution by the Hindu Mahasabha in 1937.
- Savarkar was charge-sheeted following the assassination of Mahatma Gandhi but was later acquitted by the court due to a lack of corroborative evidence.
- In 1964, Veer Savarkar wished to attain Samadhi as India had already gotten independence. He started a hunger strike on 1 February 1966 and breathed his last on 26 February 1966. In 2002, the Port Blair airport in Andaman was named Veer Savarkar International Airport.

## Hampi

### Why in News

- The third Sherpas meeting under India's G20 Presidency was recently held in Hampi

### Important Points

- Chaired by India's G20 Sherpa, Amitabh Kant, the three days meeting on the banks of river Tunga-bhadra near UNESCO World Heritage site Hampi will deliberate and engage in co-authoring the Leaders Declaration to be adopted by the G20 leaders in New Delhi Summit.



- Issues being considered are Green development, climate finance, lifestyle for environment, accelerated, inclusive and resilient growth, accelerating progress on sustainable development goals, technological transformation and digital public infrastructure, multilateral institutions for the 21st century and women-led development.
- Over 120 delegates from G20 member countries, invitees and International Organisations led by India's G20 Sherpa will negotiate the text reflecting Presidency priorities.
- These priorities were arrived at after incorporating the feedback from the voices of Global South Summit.
- After intense deliberations in the day, the delegates will explore Hampi's enigmatic landscape of monuments and boulders spread over 4000 hectares.
- They will witness the city plan, waterways, temples and other infrastructure built during the Vijayanagara empire that flourished between 1336 to 1646 AD.
- They will also experience the local craft and handicrafts and cultural performances from Karnataka.



### About Hampi

- Traditionally known as Pampakshetra of Kishkindha, Hampi is located in central Karnataka on the banks of the Tungabhadra River.
- It is a UNESCO World Heritage Site.
- It is renowned for its historical and archaeological significance, as it was once the capital of the Vijayanagara Empire, one of the greatest Hindu empires in South India, which thrived from the 14th to the 16th century.
- River: The Tungabhadra River flows through Hampi.

### Architecture

- The site boasts numerous grand temples, palaces, marketplaces, and other structures.
- Some of the prominent landmarks include the Virupaksha Temple, Vittala Temple, Lotus Mahal, Queen's Bath, and Elephant Stables.
- Temples of this city are noted for their large dimensions, florid ornamentation, bold and delicate carvings, stately pillars, magnificent pavilions and a great wealth of iconographic and traditional depictions which include subjects from the Ramayana and the Mahabharata.

### Vittala Temple Complex

- It is an iconic structure within Hampi, known for its extraordinary architecture and the famous stone chariot.
- It dates back to the 15th century. It was built during the reign of King Devaraya II (1422 – 1446 A.D.), one of the rulers of the Vijayanagara Empire.
- Several portions of the temple were expanded and enhanced during the reign of Krishnadevaraya (1509 – 1529 A.D.), the most famous ruler of the Vijayanagara dynasty.
- It is also known as Shri Vijaya Vitthala Temple. It is dedicated to Lord Vitthala, an incarnation of Lord Vishnu.

## Namda Art

### Why in News

- Recently, the Union Minister of State for Skill Development and Entrepreneurship flagged off the first batch of Namda Art products for export to the United Kingdom (UK).

### Important Points

- The Namda craft of Kashmir is being successfully revived under a Skill India's Pilot Project as part of the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), with nearly 2,200 candidates from across six districts of the state, receiving training in the dying art form.



## About Namda Art

- It is said to have begun in the 16th century when Mughal Emperor Akbar wanted to get a covering for his horses to protect them from the cold.
- It was introduced by a Sufi saint named Shah-e-Hamdan to Kashmiris.
- Namda is a type of traditional Kashmiri felted carpet that is created using sheep wool and has col-ourful hand embroidery.
- The distinct feature of this Kashmiri craft is that wool is felted and not woven.

### How it is made ?

- It is usually a sandwich of many layers of wool flattened over each other.
- After a layer is spread, it is sprinkled homogeneously with water and pressed with a tool known as ‘pinjra’ (woven willow wicker).
- Unique themes and floral patterns provide the themes for these masterpieces and flowers and leaves, buds and fruits are the essence of the designs.
- It is practised as a craft in several cultures, especially in the countries throughout Asia, viz. Iran, Afghanistan and India.

## Chavin de Huantar

### Why in News

- Recently, archaeologists working in Peru have uncovered a 3,000-year-old sealed corridor dubbed “the condor’s passageway” that likely leads to other chambers inside what was once a massive temple com-plex pertaining to the ancient Chavin culture.



### Important Points

- Located around 190 miles (306 km) northeast of Lima.
- The Chavin de Huantar archaeological site is among the culture’s most important centres, thriving from around 1,500-550 B.C.
- It is one of the earliest and best-known pre-Columbian sites.
- They date back to the first sedentary farming communities in the northern highlands of the Peruvian Andes, more than 2,000 years before the Inca Empire rose to power.
- It served as the centre of social, political, and religious activity in the Andean Highlands.
- The Chavín people developed a culturally rich society with a complex religious hierarchy and an ex-tensive trade network
- The Chavin are well-known for their advanced art, often featuring depictions of birds and felines.
- It is evident in the still breathtaking stone buildings, terraces and plazas embellished with anthro-pomorphic and zoomorphic bas-relief carvings.
- It was declared as the UNESCO world heritage site in 1985.
- The latest Chavin discoveries focus on a hallway inside a southern portion of the temple that was sealed due to what archaeologists believe was its structural weakness, but that now offers a glimpse into the earliest days of the Chavin.
- A large ceramic piece weighing some 37 pounds (17 kg) decorated with what appears to be a con-dor’s head and wings has been found in the passageway, along with a ceramic bowl, both un-earthed in May 2022 when the entrance was uncovered.
- The condor, one of the largest birds in the world, was associated with power and prosperity in an-cient Andean cultures.
- The temple complex features terraces as well as a network of passageways, which have only recently been discovered.

## Chapter 2

# Polity & Governance

## Lynchings

### Why in News

- SC seeks Data on action taken against Lynchings

#### Important Points

- The Supreme Court has decided to assess the actions taken by the Union and States to address incidents of lynchings since its July 2018 judgment condemning these acts as mobocracy.
- The court has directed State governments to provide year-wise data on complaints filed, FIRs registered, and court proceedings related to incidents of mob violence and lynchings.



#### Background

- The 2018 Supreme Court bench, addressed the growing issues of vigilantism, mob lynching, communal violence, and hate crimes.
- The court emphasized that states have the duty to prevent individuals or core groups from taking the law into their own hands, stressing that every citizen has the right to report law infractions to the police rather than resorting to vigilantism.
- The court declared that lynching undermines the rule of law and the constitutional values, leading to anarchy and violence in society.

#### Supreme Court's Observations

- The court stressed that authorities responsible for maintaining law and order must prevent vigilantism, including cow vigilantism, from occurring. Vigilante actions erode the legal institutions of the state and disrupt the constitutional order.
- The court expressed concern over rising intolerance and growing polarization, fueled by incidents of mob violence, emphasizing that such acts should not become the normal state of law and order in the country.
- The court highlighted the dangers posed by lynching and mob violence, which could escalate into widespread incidents influenced by intolerance, misinformation, and the circulation of fake news.

#### Remedial Measures

- State governments must appoint senior police officers as Nodal Officers in each district to prevent incidents of mob violence and lynching.
- State governments should identify areas where mob violence and lynching have been reported.
- Police officers must disperse mobs using their authority under Section 129 of the CrPC, and FIRs must be promptly registered under Section 153A of the IPC.
- Nodal Officers have the responsibility to personally monitor the investigation of such offenses and ensure effective implementation.
- State governments should establish a victim compensation scheme for lynching and mob violence victims in line with Section 357A of the CrPC.
- Special designated courts or fast-track courts should handle cases related to lynching and mob.

#### Role of State Governments

- A Bench comprising Justices Sanjeev Khanna and Bela M. Trivedi has instructed State governments to compile

comprehensive data on incidents of mob violence and lynchings.

- The data should include information on complaints filed, FIRs registered, and challans submitted to the courts, highlighting the progress made each year.
- The court suggested that the Ministry of Home Affairs hold meetings with relevant department heads of the State governments to obtain updates on the measures taken in response to the court's 2018 judgment in the Tehseen Poonawala case.
- The court had previously directed the formation of Special Task Forces by the States to gather intelligence on hate speeches, mob violence, and lynchings.

## CBIC

### Why in News

- Central Board of Indirect Taxes and Customs (CBIC) issues SoP to check use of freebies, liquor to lure voters.



### Important Points

- Ahead of assembly elections in states and general elections next year, the Central Board of Indirect Taxes and Customs (CBIC) has released the standard operating procedure for preventive vigilance mechanisms to prevent flow of suspicious cash, illicit liquor, drugs/narcotics, freebies and smuggled goods during elections.
- In line with directions of the Election Commission, which had expressed concerns that smuggled goods/contrabands and other illicit articles may be used to lure the voters during the election process, the CBIC has directed its field formations to monitor use of both monetary and non-monetary items to lure voters during elections.

### Highlights of SoP

- GST and Customs officials will be required to monitor the distribution of coupon-based or free fuel or cash for alluring prospective voters under the new SoP.
- The officials would also monitor fuel consumption by candidates and parties and keep a tab on expenditure on food, hotels, parties, tent houses etc.
- The GST officers would keep an extensive check on restaurant/eateries, marriage halls/ farm houses/ slaughter house/ meat house in the poll-bound area.
- The GST and Customs officials would also set up "flying squads and static surveillance teams" for the effective conduct of road and transit checks of vehicles, and verification of warehouses to curb illegal and prohibited activities, according to the SoP released ahead of the assembly elections due in five states — Rajasthan, Chhattisgarh, Madhya Pradesh, Telangana and Mizoram — and Lok Sabha elections next year.

### Freebies

- Provision of a series of promises done by political parties by providing free electricity, free public transport, free water, and waiver of pending bills and loans are often regarded as freebies.
- As per the report, expenditure on freebies ranges between 0.1 to 2.7 percent of Gross State Domestic Product (GSDP) for different states that are potentially indebted states to a greater extent.

### About CBIC

- It is part of Department of Revenue under Ministry of Finance.
- It deals with formulation of policy concerning levy and collection of Customs and Central Excise duties, prevention of smuggling and matters relating to Customs, Central Excise and Narcotics etc.

## ED Director

### Why in News

- Supreme Court holds piecemeal extensions given to ED Director illegal

#### Important Points

- The third extension of Enforcement Directorate chief Sanjay Kumar Mishra's term by the central government was illegal, the Supreme Court said.
- The Centre had to appoint a new chief for the probe agency.
- SK Mishra's extended term violates a 2021 judgment, the Supreme Court said, hearing petitions challenging the Centre's decision to extend Mr Mishra's tenure for the third time last year.
- The Supreme Court let him continue till July 31 2023 after the Centre expressed concern about con-tinuity in the middle of a peer review by the Financial Action Task Force (FATF), the global terror financing watchdog.
- The Centre had cited the peer review every time it extended Mr Mishra's term.
- Earlier the government had told the Supreme Court that he would retire in November and that the petition was motivated by an "oblique personal interest rather than any public interest", for the cause of appeasing "political masters".



#### About Enforcement Directorate (ED)

- The Enforcement Directorate was established in the year 1956 as an 'Enforcement Unit' under the Department of Economic Affairs.
- Later, in 1957, this Unit was renamed as 'Enforcement Directorate'.

#### Administrative control

- Presently, it is under the administrative control of the Department of Revenue (under the Ministry of Finance) for operational purposes.

#### Functions

- ED is responsible for enforcement of the Foreign Exchange Management Act, 1999 (FEMA), and cer-tain provisions under the PMLA.
- ED has the power to attach the asset of the culprits found guilty of the violation of FEMA.
- It has also been empowered to undertake, search, seizure, arrest, and survey, etc. against the offenc-es committed under PMLA.

#### Appointment of Director of ED

- The ED Director is appointed by the central government on the recommendation of a committee:
- chaired by the Central Vigilance Commissioner and
- members comprising of Vigilance Commissioners, Home Secretary, Secretary DOPT and Revenue Secretary.

## Kui Language

### Why in News

- Kui language inclusion in 8th schedule gets approval of Odisha govt

#### Important Points

- The Odisha state cabinet gave an approval to a proposal which recommended the inclusion of the Kui language in the 8th schedule of the Constitution of India.
- The cabinet is of opinion that the inclusion of language to 8th schedule will not have any financial implications.

## About Kui Language

- Approximately 46 languages are spoken by the tribal population in Odisha, India. Among them is the Kui language, also known as Kandh, Khondi, Kanda, Kodu, or Kuinga. Kui is a South-Eastern Dravidian language primarily spoken by the Kandhas or Kondhs, residing in the hilly and forested areas of Odisha.
- The Kui language is predominantly spoken in regions such as Phulbani (Kondhamal), Boudh, Kora-put, Kalahandi, Rayagada, Nayagarh, Ganjam, Gajapati, Nabarangpur, Sonepur, Angul, and Dhenkanal districts of South and central Odisha. It is closely related to the Gondi and Kuvi languages and is written in the Odia script.
- According to the census of India, the Kui language has approximately 1 million speakers, precisely 941,488 individuals.
- The UNESCO site indicates that the language's status situation is potentially vulnerable, suggesting the need for attention and preservation efforts.
- 8th Schedule of the Indian Constitution:
- It lists the official languages of India.
- Although there are hundreds of languages spoken across the country, the eighth schedule recognises a total of 22 languages as the official languages.

अजमोशा (Assamese)	বাংলা (Bengali)
ગુજરાતી (Gujarati)	हिन्दी (Hindi)
ಕನ್ನಡ (Kannada)	كشمیری (Kashmiri)
മലയാളം (Malayalam)	মৌজোলাত (Manipuri/Methei)
मैथिली (Maithili)	मराठी (Marathi)
नेपाली (Nepali)	ଓଡ଼ିଆ (Oriya)
ਪੰਜਾਬੀ (Punjabi)	संस्कृत (Sanskrit)
সংতালী (Santali)	தமிழ் (Tamil)
తెలుగు (Telugu)	اردو (Urdu)
العربية (Arabic)	မြန်မာစာ (Burmese)
ဘာသာ မန် (Mon)	සිංහල (Sinhalese)

## Languages in 8th Schedule

- The 22 languages now included in the eighth section of the Constitution are, Manipuri, Maithili, Kashmiri, Hindi, Kannada, Gujarati, Konkani, Malayalam, Assamese, Marathi, Nepali, Bengali, Punjabi, Sanskrit, Sindhi, Telugu, Tamil, Odia, Urdu, Bodo, Dogri, and Santhali.
- Fourteen of these languages were originally listed in the Constitution. Sindhi was introduced in 1967, Konkani, Manipuri, and Nepali in 1992, and Santali, Dogri, Maithili, and Bodo by the 92nd Amendment Act of 2003.

## The Inter-Services Organisations (Command, Control and Discipline) Bill 2023

### Why in News

- The Standing Committee on Defence (headed by Jugal Kishore) has agreed to all provisions of the Inter-Services Organisations (Command, Control and Discipline) Bill, 2023, saying it must be passed without any amendment.



### Important Points

- The 39th Report (17th Lok Sabha) of the committee on the bill was presented to Lok Sabha and also laid in Rajya Sabha.

### Key features of the Bill include

- Inter-services Organisation:** Existing Inter-services Organisations will be deemed to have been constituted under the Bill.
- These include the Andaman and Nicobar Command, the Defence Space Agency, and the National Defence Academy. The central government may constitute an Inter-services Organisation which has personnel belonging to at least two of the three services: the army, the navy, and the air force.
- These may be placed under the command of an Officer-in-Command. These organisations may also include a Joint Services Command, which may be placed under the command of a Commander-in-Chief.
- Control of Inter-services Organisations:** Presently, the Commander-in-Chief or Officer-in-Command of Inter-services Organisations are not empowered to exercise disciplinary or administrative powers over the personnel belonging to other services.
- The Bill empowers the Commander-in-Chief or the Officer-in-Command of an Inter-services Organisation to exercise command and control over the personnel serving in or attached to it.



- He would be responsible for maintaining discipline and ensuring proper discharge of duties by the service personnel.
- The superintendence of an Inter-services Organisation will be vested in the central government. The government may also issue directions to such organisations on grounds of national security, general administration, or public interest.
- Other forces under central government: The central government may notify any force raised and maintained in India to which the Bill will apply. This would be in addition to army, navy, and air force personnel.
- Commander-in-Chief: The officers eligible to be appointed as the Commander-in-Chief or Officer-in-Command are: (i) a General Officer of the regular Army (above the rank of Brigadier), (ii) a Flag Officer of the Navy (rank of Admiral of the Fleet, Admiral, Vice-Admiral, or Rear-Admiral), or (iii) an Air Officer of the Air Force (above the rank of group captain).
- He will be empowered to exercise all disciplinary and administrative powers vested in: (i) General Officer Commanding the Army, (ii) Flag Officer Commanding-in-Chief of a Naval Command, (iii) Air Officer Commanding-in-Chief of an Air Command, (iv) any other officer/authority specified in the service Acts, and (v) any other officer/authority notified by the government.
- Commanding Officer: The Bill provides for a Commanding Officer who will be in command of a unit, ship, or establishment.
- The officer will also perform duties assigned by the Commander-in-Chief or Officer-in-Command of the Inter-services Organisation.
- The Commanding Officer will be empowered to initiate all disciplinary or administrative actions over the personnel appointed, deputed, posted, or attached to that Inter-services Organisation.

## Digital Time Vouchers

### Why in News

- ECI to issue digital time vouchers to National & State political parties for campaigning on Doordarshan & All India Radio during elections

### Important Points

- Allotment of time to political parties on All India Radio and Doordarshan during election will now be online.
- The Election Commission of India, has amended the existing scheme for the use of Government-owned electronic media by political parties.
- This has been done by introducing a provision to issue digital time vouchers through an Information Technology (IT) platform.
- With this facilitation, the political parties will not be required to send their representatives to ECI/CEO Offices for collection of the time vouchers physically during elections.
- This step reflects the Commission's commitment to leveraging technology for the betterment of the electoral process and ease of all stakeholders.
- Recognizing the advancements in technology, the Commission has been providing IT based options for interface with political parties.
- Recently, the Commission also introduced a web portal for online filing of financial accounts by political parties with the Election Commission.



### Background

- The scheme, which was initially notified on 16th January 1998, holds a statutory basis under Section 39A of the R.P. Act, 1951.
- It was formulated after extensive consultations with recognized National and State Parties and is aimed at ensuring equitable access to government-owned electronic media during elections for campaigning.
- Under this Scheme, an equitable base time is allotted to each National Party and Recognized State Party of the state concerned uniformly on DD & AIR and the additional time to be allotted to the parties is decided on the basis of the poll performance of the parties in the last assembly elections from the respective States/UT or in the last general Elections to Lok Sabha, as the case may be.
- The actual date and time during which the above telecasts/broadcasts will be made by the authorised

representatives of any party is predetermined, by a lot, by the Prasar Bharati Corporation in consultation with ECI and in the presence of political party representatives.

- The introduction of an IT-based platform for the processing and distribution of time vouchers to entitled political parties allows for a more efficient and streamlined process, enhancing accessibility and ease of use for the political parties.

## World Election Bodies (A-WEB)

### Why in News

- Recently, Chief Election Commissioner of India led a three-member Election Commission of India (ECI) delegation to Cartagena, Colombia to attend the 11th meeting of the Executive Board of the Association of World Election Bodies (A-WEB).

### Important Points

- The Association of World Election Bodies is the largest association of Election Management Bodies (EMBs) worldwide with 119 EMBs as Members & 20 Regional Associations/Organisations as Associate Members.
- An international conference on the theme “A global view on the challenges of regional elections 2023” is also being organised by National Civil Registry, Colombia in 2023.
- A-WEB as a global association plays a critical role in fostering co-operation amongst EMBs and thereby enabling learning from each other’s experiences and best practices.
- EMBs through forums like A-WEB could work together on pressing challenges like countering fake narratives which are trying to derail the election integrity worldwide.
- During the deliberations at the Executive Board meeting, the participants discussed various agenda items including the programmes and activities to be undertaken by A-WEB during 2023-24, annual progress report of A-WEB & its regional offices including A-WEB India Centre, budget and membership related matters amongst others.



### Amongst the other agenda items in the meeting, India raised the ECI proposals namely -

- setting up an A-WEB portal which would serve as repository of electoral best practices and initiatives taken by member EMBs in various aspects of electoral management and
- establishing A-WEB Global Awards for EMBs who make significant contribution and take important initiatives in the democratic processes. Both the proposals were approved by the Executive Board.
- On the sidelines of the 11th A-WEB Executive Board meeting, a bilateral meeting was also held with the National Election Commission of the Republic of Korea on ECIs Electronic Postal Ballot System.
- India and South Korea had signed a Memorandum of Understanding (MoU) in 2012, to establish a mutually cooperative relationship in the field of election administration.
- The two EMBs have active bilateral exchanges and engagement through regular visits of officials for seminars, conferences and observer programmes.
- NEC also participated in the 3rd International Conference on ‘Inclusive Elections and Elections Integrity’ organised by ECI under the aegis of ‘Democracy Cohort on Elections Integrity’ in March 2023.

### Background: ECI and A-WEB

- A-WEB was founded in October, 2013 in Seoul, Republic of Korea on the shared vision among its members of achieving sustainable democracy around the world through the strengthening of the processes of election management in member countries.
- ECI has been very closely associated with the process of formation of A-WEB since 2011-12 and has been its Executive Board Member, since its inception in October 2013 for two consecutive terms (2013-15 and 2015-17).
- ECI took over as Vice-Chairperson of A-WEB for 2017-19 term; as Chair for 2019-22 term and is presently a member of its Executive Board for 2022-24 in its capacity as immediate former Chair of A-WEB.
- A-WEB organises capacity building programmes for its member EMBs and undertakes Election Visitor and Observation Programmes in various countries to study election management practices and share knowledge with other member EMBs.

## India A-WEB Centre

- As per the decision taken at the meeting of the A-WEB Executive Board held at Bengaluru in Sep 2019, an India A-WEB Centre has been established at New Delhi for documentation and research for sharing the best practices and training and capacity building of officials of A-WEB members.
- The Centre is bringing out several publications and documents, including a world class Journal titled 'A-WEB India Journal of Elections.' The ECI is providing all the necessary resources for the India A-WEB Centre.

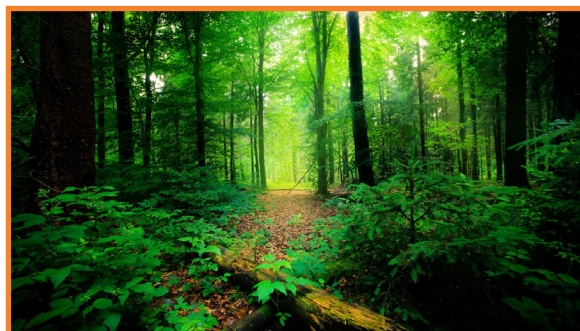
## Forest Amendment Bill

### Why in News

- The Hornets' Nests (troublesome situation) in the Forest Amendment Bill

### Important Points

- The Lok Sabha passed the Forest (Conservation) Amendment Bill, 2023, with no substantive changes from the original version.
- As the bill received both positive and negative feedbacks, it is important to understand the bill in its entirety and evaluate the issues accordingly.



#### Forest (Conservation) Amendment Bill 2023 :

- The Bill seeks to amend the Forest Conservation Act 1980 – a legislation enacted to protect India's forest.
- The 1980 Act empowers the Central government to regulate the extraction of forest resources — from timber and bamboo to coal and minerals — by industries as well as forest-dwelling communities.
- The key changes to the Act include inserting a 'preamble' that underlines –
- India's commitment to preserving forests, their biodiversity and tackling challenges from climate change
- Amending the name of the Act to Van (Sanrakshan Evam Samvardhan) Adhiniyam (translated as Forest Conservation and Augmentation) from the existing Forest (Conservation) Act.
- The amendments also say that the Act would only apply to lands notified in, any government record, as 'forest' on or after 1980.

### Key Features of Forest (Conservation) Amendment Bill, 2023

- Land under the Purview of the Act
- Land declared/notified as a forest under the Indian Forest Act, 1927 or under any other law, or
- Land not covered in the first category but notified as a forest on or after October 25, 1980 in a government record.

#### Exempted Categories of Land -

- The Bill exempts certain types of land from the provisions of the Act, such as forest land along a rail line or a public road maintained by the government.
- Forest land situated 100 km away from international borders and to be used for "strategic projects of national importance" or land ranging from 5-10 hectares for security and defence projects would also be exempted from the Act's stipulations.

#### Assignment/Leasing of Foreign Land -

- Under the Act, a state government requires prior approval of the central government to assign forest land to any entity not owned or controlled by government.
- In the Bill, this condition is extended to all entities, including those owned and controlled by government.
- It also requires that prior approval be subject to terms and conditions prescribed by the central government.

#### Permitted Activities in Forest Land -

- The Act restricts the de-reservation of forests or use of forest land for non-forest purposes.
- Such restrictions may be lifted with the prior approval of the central government.
- Non-forest purposes include use of land for cultivating horticultural crops or for any purpose other than re-afforestation.
- The Act specifies certain activities that will be excluded from non-forest purposes, meaning that restrictions on the use of forest land for non-forest purposes will not apply.
- The Bill adds more activities to this list such as – zoos and safaris under the Wild Life (Protection) Act, 1972

owned by the government or any authority, in forest areas other than protected areas, ecotourism facilities, silvicultural operations (enhancing forest growth), and any other purpose specified by the central government.

- Power to Issue Directions: The Bill adds that the central government may issue directions for the implementation of the Act to any authority/organisation under or recognized by the centre, state, or union territory (UT).

### Issues Related to the Bill

- Deviation from the Original Law (Forest Conservation Act 1980)
- The Act of 1980 adopted a protectionist stance which made forest clearances time consuming and costly to obtain.
- While current development needs and priorities must be recognised, this Bill deviates in a significant manner from the spirit of the original law.
- Three points that emerge from the Bill have caused considerable anxiety among environmental experts:
  - The narrowed definition of forests under its scope.
  - The exclusion of significant tracts of forest areas.
  - The granting of sanction to additional activities that were regulated earlier.

## No Confidence Motion

### Why in News

- Lok Sabha Speaker Om Birla has admitted a no-confidence motion against the ruling government.

### Important Points

- The motion was proposed by Congress MP Gaurav Gogoi, on behalf of opposition parties of I.N.D.I.A alliance.

#### What is a No-Confidence Motion?

- In a parliamentary democracy, a government can be in power only if it commands a majority in the directly elected House.
- Article 75(3) of the Indian Constitution embodies this rule by specifying that the Council of Ministers are collectively responsible to the Lok Sabha.
- For testing this collective responsibility, the rules of Lok Sabha provide a particular mechanism – a motion of no-confidence.
- The procedure is specified under Rule 198 of the Lok Sabha.
- The Constitution does not mention either a Confidence or a No Confidence Motion.

#### Who can move a No-Confidence Motion?

- Any Lok Sabha MP, who can garner the support of 50 colleagues, can, at any point of time, introduce a motion of no-confidence against the Council of Ministers.
- A no-confidence motion can be moved only in the Lok Sabha. It cannot be moved in the Rajya Sabha.

#### How is a No-Confidence Motion Debated and Voted?

- The motion is moved by the member who submitted it, and the government will then respond to the motion.
- The opposition parties will then have the opportunity to speak on the motion.
- After the debate, the Lok Sabha will vote on the no-confidence motion.
- The motion will be passed if it is supported by a majority of the members of the House.
- If a no-confidence motion is passed, the government must resign.
- If the government wins the vote on the no-confidence motion, the motion is defeated and the government remains in power.

#### How many No-Confidence Motions have been introduced since Independence?

- There have been 27 no-confidence motions introduced in the Lok Sabha since independence
- The first no-confidence motion against the administration of the then PM Jawaharlal Nehru was presented in the Lok Sabha in August 1963.
- The motion obtained only 62 votes in favor and 347 votes against it.
- The last no-confidence motion was moved in 2018 against the then NDA government.



## Chapter 3

# Environment & Ecology

## GEF Council

### Why in News

- GEF Council approves plans for 'game-changing' global biodiversity fund (GEFF)

### Important Points

- The Global Environment Facility's governing board has approved plans to establish a "game-changing" new fund to finance the implementation of the Kunming-Montreal Global Bio-diversity Framework, which aims to put nature on a recovery path by the end of this decade.
- The GEF Council decision, taken during a meeting in Brazil, clears the way for the launch of the Global Biodiversity Framework Fund at the Seventh GEF Assembly, to take place in Vancouver, Canada, in August.
- The Kunming-Montreal Global Biodiversity Framework was a breakthrough deal reached in December 2022 during the Convention on Biological Diversity COP15 summit in Montreal. It set new goals on the conservation, restoration, and sustainable use of biodiversity and ecosystems by 2030.
- To implement the agreement, countries will need to translate the plan into national targets and strategies, integrate biodiversity across their decision-making, and take concrete action to deliver results.
- This requires financing for budget-stressed developing countries, many of which are some of the most highly biodiverse in the world.
- That direct support will be provided through the new fund, which will be set up to draw in capital from governments, the private sector, and philanthropic organizations.



### Three principles that guide the country's allocation of resources for GBFF

- Allocation system must accommodate financial contributions on a rolling basis.
- Consider special needs of Least Developed Countries and Small Island developing States.
- Acknowledge that biodiversity is not evenly distributed across the globe and some areas have greater potential to contribute to global biodiversity benefits than others.

#### GEF -

- The GEF, which is the financial mechanism for the Convention on Biological Diversity, has already provided early action grants to support national planning around the new agreement's goals and targets.
- In addition to housing the new Global Biodiversity Framework Fund, it will continue to support bio-diversity initiatives through the projects and programs it supports through its other trust funds.
- Biodiversity is the largest component of the GEF-8 funding cycle, which runs from 2022 to 2026.
- Earlier the GEF Council approved a record work program providing \$1.4 billion in direct support for developing countries' efforts to protect and ensure the sustainable use of biodiversity, in line with commitments made in Montreal.
- The six new Integrated Programs included in the work program will support progress on 19 of the 23 targets of the Kunming-Montreal Global Biodiversity Framework, and make advances on all of its goals relating to halting and reversing nature loss.

#### Seventh GEF Assembly -

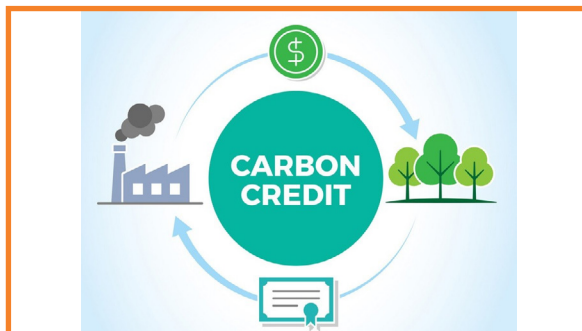
- Environmental leaders from 185 countries will gather at the Vancouver Convention Centre in Vancouver, Canada for the Seventh Assembly of the Global Environment Facility from August 22-26.
- Building on recent diplomatic breakthroughs on biodiversity loss, toxic chemicals, and the high seas, the GEF Assembly will be a critical stocktaking for 2030 goals to end pollution and nature loss, combat climate change, and propel inclusive, locally-led conservation.

## Carbon Credit

### Why in News

#### Important Points

- Under the scheme the Centre will constitute a “National Steering Committee for the Indian carbon market” to govern and oversee the functions of the market.
- The secretary, ministry of power will be the ex-officio chairperson, while the secretary for the ministry of environment, forest and climate change will be the co-chairperson.
- The committee will also have members from the ministries of finance, new and renewable energy, steel, coal and petroleum, and Niti Aayog among others.
- The steering committee will recommend the Bureau of Energy Efficiency for the formulation and finalisation of procedures for institutionalizing the Indian carbon market and formulation of greenhouse gas emission targets for “obligated entities”.
- The Central Electricity Regulatory Commission (CERC) has been mandated to regulate the market.
- It will register the power exchanges and approve the carbon credit certificate trading in the Indian carbon market from time to time.
- The power exchange shall seek approval of the Commission for their respective bylaws and rules for trading of certificates in the power exchange.
- The power exchanges shall perform functions regarding trading of carbon credit certificates, in accordance with the regulations notified by the commission.
- Further, BEE would constitute, technical committees for different areas as required under compliance mechanism for the purposes of this scheme.
- The power ministry would decide on the sectors to be included under compliance mechanism of the Indian carbon market on the basis of the recommendations of BEE.
- The bureau would also develop the trajectory and targets for the entities under compliance mechanism.
- According to experts, a carbon market would help as many leading Indian corporates have made commitments to become carbon-neutral and the market will provide flexibility to entities in hard-to-abate sectors and with high reduction costs to supplement their own reduction efforts with credits from the carbon market.
- The market is expected incentivize entities with low reduction costs to reduce emissions beyond their mandate and trading in the carbon market could reduce the overall cost of emission reductions in India.
- The focus on curbing carbon emission comes in the backdrop of the ambitious net zero target of India which it aims to achieve by 2070.



#### 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.
- The carbon credit is half of a so-called cap-and-trade program.
- Companies that pollute are awarded credits that allow them to continue to pollute up to a certain limit, which is reduced periodically. Meanwhile, the company may sell any unneeded credits to another company that needs them.
- Private companies are thus doubly incentivized to reduce greenhouse emissions.
- First, they must spend money on extra credits if their emissions exceed the cap. Second, they can make money by reducing their emissions and selling their excess allowances.
- Proponents of the carbon credit system say that it leads to measurable, verifiable emission reductions from certified climate action projects, and that these projects reduce, remove, or avoid greenhouse gas (GHG) emissions.



## Why in News

- World health organisation (WHO) releases ‘burden of disease attributable to unsafe drinking-water, sanitation and hygiene (2019 update)’ report

### Important Points

- Report sheds light on the alarming number of deaths and the lack of access to basic WASH services worldwide.

#### Child Mortality -

- Unsafe drinking water, sanitation and hygiene (WASH) were responsible for 395,000 deaths among children under the age of five in 2019 according to a new World Health Organization (WHO) report.
- Breakdown of Deaths:
  - 273,000 deaths were attributed to diarrhoea.
  - 112,000 deaths were caused by acute respiratory infections
- The report showed that half of the world’s population still does not have adequate access to drinking water, sanitation and hygiene causing the death of at least 1.4 million people in 2019.



### Impact

- Diarrhoeal diseases accounted for over a million deaths and 55 million Disability-adjusted life years (DALY).
- DALY is the sum of the number of years of life lost due to premature death and a weighted measure of the years lived with disability due to a disease or injury.
- An estimated 1.5 billion people worldwide are affected by soil-transmitted helminthiases (STH), transmitted through poor sanitation practices.
- STH are transmitted by eggs in human faeces, which in turn contaminate soil in areas where sanitation is poor.
- Inadequate WASH contributes to 10% of the disease burden associated with malnutrition.

#### Major Diseases -

- The WHO also noted other major diseases attributable to unsafe WASH — namely undernutrition and soil-transmitted helminthiases (STH). Soil-transmitted helminthiases are transmitted by eggs in human faeces, which in turn contaminate soil in areas where sanitation is poor.

#### Regional Disparities -

- Most WASH-attributable deaths were reported in the WHO African and South-East Asia regions. In LMICs, over 505,000 deaths in 2019 were attributable to unsafe drinking water, and in the Americas region, diarrheal diseases claimed the lives of 33,200 people.

#### WASH -

- WASH is an acronym that stands for the interrelated areas of Water, Sanitation, and Hygiene.
- The WHO WASH Strategy has been developed in response to Member State Resolution (WHA 64.4) and the 2030 Agenda for Sustainable Development.
- It is a component of WHO’s 13th General Programme of Work 2019–2023 which aims to contribute to the health of three billion through multisectoral actions like better emergency preparedness and response; and one billion with Universal Health Coverage (UHC).
- It also takes on board the need for progressive realization of the human rights to safe drinking-water and sanitation, adopted by the UN General Assembly in July 2010.

#### SDGs Linked to WASH -

- Goal 3: Good Health and Well-being - WASH is essential for preventing the spread of diseases and promoting good health.
- Goal 6: Clean Water and Sanitation - This goal specifically addresses the need for access to clean drinking water and adequate sanitation facilities.
- Goal 12: Responsible Consumption and Production - WASH is critical to ensure responsible consumption and production of water resources.

- Goal 13: Climate Action - Climate change can impact access to safe drinking water, sanitation, and hygiene, making WASH an important component of climate action.

#### Observations related to India -

- India among countries that increased safely managed sanitation services by more than 10 percentage points between 2015 and 2020.
- Swachh Bharat Mission could result in averting more than 300 000 deaths and 14 million DALYs between 2014 and 2019.
- Successful implementation of Jal Jeevan Mission could reduce diarrhoeal deaths and DALYs by almost half.

#### Recommendations

- Quantifying health gains associated with higher WASH service levels.
- Promoting hand hygiene for all (Driven by Hand Hygiene for All initiative, WHO Guidelines on hand hygiene etc).
- Adapt national monitoring systems to improve data on population exposure to safely managed services.

## Crop Residue Management Guidelines

### Why in News

- Government revises the Crop Residue Management guidelines enabling efficient ex-situ management of paddy straw generated in the States of Punjab, Haryana, UP and Delhi

#### Important Points

- As per the revised guidelines, techno-commercial pilot projects for Paddy Straw Supply Chain will be established under the bilateral agreement between the Beneficiary/Aggregator (Farmers, rural entrepreneurs, Cooperative Societies of Farmers, Farmers Producer Organizations (FPOs) and Panchayats) and Industries utilizing the paddy straw.
- Govt shall provide financial assistance on the capital cost of machinery and equipment.
- The required working capital may be financed either by the Industry and Beneficiary jointly or utilizing the Agriculture Infrastructure Fund (AIF), NABARD Financial or Financing from the Financial Institutions by the beneficiary.
- The land for storage of the collected paddy straw will be arranged and prepared by the beneficiary as may be guided by the end use industry.
- Project proposal based financial assistance will be extended for machines and equipments such as Higher HP Tractor, Cutters, Tedder, Medium to Large Balers, Rakers, Loaders, Grabbers and Telehandlers which are essentially required for establishment of paddy straw supply chain.
- State Governments shall approve these projects through project sanctioning committee.
- Government (jointly by Central and State Governments) will provide financial support of @ 65% of the project cost, Industry as primary promoter of the project will contribute 25% and will act as the Primary consumer of the feedstock collected and Farmer or group of Farmers or Rural Entrepreneurs or Cooperative Societies of Farmers or Farmers Producer Organizations (FPOs), or Panchayats will be the direct Beneficiary of the project and will contribute the balance 10%.



#### The Outcomes of the above interventions are -

- The initiative will supplement the efforts of paddy straw management through in-situ options
- During the three-year tenure of the interventions, 1.5 million metric tonnes of surplus paddy straw are expected to be collected which would otherwise have been burnt in fields.
- About 333 biomass collection depots of capacity 4500 MT will be built in the States of Punjab, Haryana, Uttar Pradesh and Madhya Pradesh.
- Air pollution caused by stubble burning will be considerably reduced.
- It would generate employment opportunities of about 9,00,000 man days.



- The interventions will encourage a robust supply chain management of paddy straw which shall further help in making paddy straw available for various end uses i.e., power generation, heat generation, bio- CNG, etc. by Power/bio-CNG/bio-ethanol producers
- Establishment of supply chain would result in new investments in Biomass to biofuel and energy sectors.

## World Resources Institute

### Why in News

- Global tropical primary forest cover continued to decline unabated in 2022

#### Important Points

- According to a new research by the WRI's Global Forest Watch, Tropical areas lost 4.1 million hectares of forest cover resulting in emission of 2.7 billion tonnes of carbon dioxide.
- Tropical areas lost 4.1 million hectares of forest cover – equivalent to losing an area of 11 football fields per minute – in 2022, new research quoted by the World Resources Institute's (WRI) Global Forest Watch has said.



#### Forest Lost -

- Primary forests: Mature, natural forests that have remained undisturbed in recent history. They store more carbon than other forests and are rich sources of biodiversity. Their loss is almost irreversible.
- Secondary forest: Forest that grows naturally at the place of primary forest after its deforestation. It is more homogeneous than a natural forest, with a limited number of species, and usually even aged stands.
- Planted forests: Forests predominantly established by planting seedlings or seeds. The trees usually belong to the same species (whether native or introduced), have the same age.

#### Distribution -

- Tropical rain forests can be found in Asia, Australia, Africa, South America, Central America, Mexico, and several Pacific Islands, all of which are around 28 degrees north or south of the equator.
- They cover about 6-7 percent of the earth's surface and are home to half of the planet's biodiversity.
- Brazil (South America), the Democratic Republic of Congo (Africa), and Indonesia are home to the world's largest rainforests.
- South America's Amazon rainforest is the world's largest, occupying an area almost two-thirds the size of the continental United States.

#### Findings -

- According to Global Forest Watch, India lost 43.9 thousand hectares of humid primary forest between 2021 and 2022, which accounts for 17% of the country's total tree cover loss in the period.
- The total global tree cover loss in 2022 declined by 10%. This includes primary, secondary, and planted forests.
- This decrease, according to Global Forest Watch, is a direct result of a decrease in fire-related forest losses which decreased 28% from 2021. Non-fire losses in 2022 increased by slightly less than 1%.
- Brazil and the Democratic Republic of Congo are the two countries with the most tropical forest cover, and both registered losses of this resource in 2022.

#### Suggestions -

- To meet the target of restoring 350 mha of forests globally by 2030, the world needs to increase tree cover by 22 mha per year, between 2021 and 2030.
- Reducing deforestation will strengthen the resilience of the Amazon rainforest and safeguard its threatened areas.
- The Brazilian government's current administration is in the spotlight, and it is being urged to implement a zero-deforestation policy to change the situation.
- Constructing knowledge about the role of trees in the Amazon ecosystem and creating awareness among students and youths of the importance of trees to the Amazon ecosystem.
- To protect them, it is also necessary to limit global greenhouse gas emissions.
- Corporates are required to follow corporate responsibility guidelines which bans them from taking part in endeavours that harm Amazon.

## Cymbidium Lancifolium

### Why in News

- Recently, an extremely rare and terrestrial orchid species *Cymbidium lancifolium* was discovered in the Chopta valley of the Western Himalayan region of Uttarakhand.

### Important Points

- This is one of the beautiful species of *Cymbidium*, also known as Lance leafed *Cymbidium*.
- Cymbidium* orchids are one of the most popular orchid species cultivated on a large scale world-wide.
- Distribution:** This species is found naturally in India in Himalayas, Assam, Sikkim, Nepal, Bhutan, China, Taiwan, Japan and many of the SE Asian countries
- They grow at altitudes of 300 to 2300 M.
- In a natural condition, they grow in broad leaf forests where the soil is rich in humus and also plenty of leaf litter.
- The plant is generally grown in cool to intermediate temperature conditions but with bright light.
- They are highly valued in horticulture and are commonly sold as cut flowers and potted plants on a commercial scale due to their long-lasting property, wide range of colours and elegant appearance, making them a favourite choice for both indoor and outdoor decoration.
- The discovery of *Cymbidium lancifolium* in Chopta valley highlights the rich biodiversity of Uttarakhand and the importance of conservation efforts to protect these rare and beautiful species.
- Cymbidium* orchids are one of the most popular orchid species cultivated on a large scale world-wide.
- They are highly valued in horticulture and are commonly sold as cut flowers and potted plants on a commercial scale due to their long-lasting property, wide range of colours and elegant appearance, making them a favourite choice for both indoor and outdoor decoration.
- Cephalanthera erecta* var. *oblanceolata* was recorded from the Mandal valley of Chamoli district in 2021. This was a new record for the flora of India, and the finding was published in 'Nelumbo'. Another rare carnivorous plant *Utricularia furcellata* from the western Himalayas was documented in 2022 and finding was published in the prestigious 'Journal of Japanese Botany'.



## Hoolock Gibbon

### Why in News

- The conservation status of India's only ape was a cause for concern at a global event on Hoolock gibbons held recently in China.

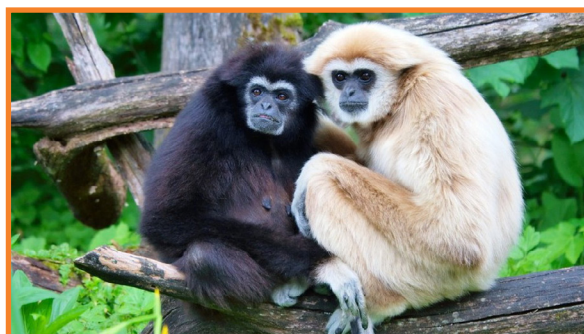
### Important Points

#### About Hoolock Gibbon:

- It is the only ape found in India.
- It is native to eastern Bangladesh, Northeast India, Myanmar, and Southwest China.
- Gibbons, the smallest and fastest of all apes, live in tropical and subtropical forests in the southeast-ern part of Asia.
- The Hoolock gibbon, unique to India's northeast, is one of 20 species of gibbons on Earth.
- It is categorised into Western Hoolock Gibbon and Eastern Hoolock Gibbon.
- Like all apes, they are extremely intelligent, with distinct personalities and strong family bonds.

#### Western Hoolock Gibbon -

- It has a much wider range, as it is found in all the states of the north-east, restricted between the south of the Brahmaputra river and east of the Dibang river.



- Outside India, it is found in eastern Bangladesh and north-west Myanmar.
- It is listed as Endangered in the IUCN Red list.

### Eastern Hoolock gibbon -

- It inhabits specific pockets of Arunachal Pradesh and Assam in India, and southern China and north-east Myanmar.
- It is listed as Vulnerable in the IUCN Red list.

## Phosphate Rocks

### Why in News

- Recently, a government organization in Norway, has unearthed extensive deposits of phosphate rocks within the country.

### Important Points

- Norge Mining, a prominent mining company, has announced the discovery of an enormous phosphate rock deposit in southwestern Norway.
- According to the company, this deposit is estimated to contain up to 70 billion tonnes of the non-renewable resource, making it a game-changer for the global demand for batteries and solar panels up to 100 years.
- The site also holds deposits of strategic minerals such as titanium and vanadium, further bolstering its significance.
- Phosphate rock, renowned for its high phosphorus concentration, is a vital component in the production of green technologies.



### Why is this a groundbreaking find ?

- Despite huge demand, phosphorus availability has been limited, resulting in significant supply challenges.
- With this groundbreaking find, Norge Mining aims to alleviate these concerns and potentially revolutionise the renewable energy industry.
- Previously, Russia held control over the world's largest ultra-pure phosphate rock deposits, raising concerns about the high supply risk associated with these "critical raw materials."
- The European Union, heavily reliant on phosphate rock imports, including from China, Iraq, and Syria, expressed apprehension about potential shortages.
- The Hague Centre for Strategic Studies published a report highlighting the EU's dependence on imports and the urgent need for alternative sources.
- Scientific journal Nature warned of impending supply disruptions, citing Russia's invasion of Ukraine and subsequent economic sanctions as factors that could lead to market volatility.
- As the global economy consumes approximately 50 million tonnes of phosphorus annually, experts have raised the alarm about a potential "phosphogeddon" if supply trends persist.
- The European Raw Materials Alliance has already voiced its support for the mining plans, highlighting the importance of securing sustainable raw material sources.
- The European Commission has welcomed the discovery, recognising its potential to support the Commission's objectives regarding raw materials.
- Norge Mining predicts that the projected ore body, reaching an impressive depth of 4,500 metres, could theoretically satisfy global demand for the next century.
- The enormous phosphate rock deposit in Norway represents a significant milestone in the pursuit of sustainable energy solutions.
- With the potential to meet the global demand for batteries and solar panels for the next 100 years, this discovery offers hope for a future powered by green technologies.

### About Phosphate :

- It is the natural source of phosphorous, an element that provides nutrients to plants for their growth and development.
- How is phosphate formed? It is a sedimentary rock formed millions of years ago by the accumulation of organic matter on the ocean floor.
- Its reserves are found in Africa, North America, Kazakhstan, the Middle East and Oceania.

- The world's largest deposits are located in Morocco, which is also one of the global leaders in phosphate extraction.

### Phosphorus in India -

- Phosphate rocks are majorly produced only from two States in India, namely Rajasthan and Madhya Pradesh.
- Rock phosphate is the key raw material for DAP and NPK fertilizers. Currently, India is 90% dependent on imports for this raw material.

### Uses -

- Most of the phosphate rock mined throughout the world is used to produce phosphate fertilizer.
- It is also used as animal feed supplements.
- Elemental phosphorus and phosphoric chemicals derived from phosphate rocks find application in detergents, insecticides etc.

## Tunicates

### Why in News

- Recently, researchers described a 500-million-year-old tunicate fossil species, which suggested that the modern tunicate body plan was already established soon after the Cambrian Explosion.

### Important Points

- The new fossil, named *Megasiphon thylakos*, revealed that ancestral tunicates lived as stationary, filter-feeding adults and likely underwent metamorphosis from a tadpole-like larva.
- In the landlocked state of Utah, within the Marjum Formation, paleontologists have made an exciting discovery—a fossil of a tunicate dating back 500 million years. Utah is situated in the Mountain West subregion of the Western United States.
- The *Megasiphon Thylacos* fossil, estimated to be approximately 500 million years old, indicates that the fundamental body structure of tunicates had already emerged soon after the Cambrian Explosion.
- This discovery offers valuable knowledge regarding the sedentary, filter-feeding habits of early tunicates, as well as their transformation from larval forms resembling tadpoles.
- *Megasiphon thylakos* resided on the seafloor, engaging in filter feeding throughout the day, before becoming preserved in the fossil record for an impressive span of 500 million years, including the remarkable preservation of its soft tissues.
- Found in the depths of the ocean, tunicates stand out as some of the most peculiar lifeforms on Earth.



### About Tunicates -

- These are commonly called sea squirts which are a group of marine animals.
- With over 3,000 existing species, these marine invertebrates, commonly referred to as sea squirts, have a distinct lifestyle.
- They spend the majority of their lives affixed to various surfaces, such as docks, rocks, or the hulls of boats.
- They are a species of marine invertebrates with an evolutionary history from at least 500 million years ago.
- These intriguing creatures predominantly inhabit shallow water habitats across the world's oceans.
- Researchers are interested in them as they are the closest relatives of vertebrates, which includes fish, mammals, and people.

### There are two main tunicate lineages namely -

- **Asciaceans:** They are often called “sea squirts” and most asciaceans begin their lives looking like a tadpole and mobile, then metamorph into a barrel-shaped adult with two siphons. They live their adult life attached to the seafloor.
- **Appendicularias:** They retain the look of a tadpole as they grow to adults and swim freely in the upper waters. These seem extremely far removed from vertebrates.

### Features -

- Tunicates are truly strange creatures that come in all shapes and sizes and have a wide variety of lifestyles.
- An adult tunicate's basic shape is typically barrel-like, with two siphons projecting from its body.
- One of the siphons draws in water with food particles through suction, allowing the animal to feed using an internal basket-like filter device.
- The other siphon expels the water.

## Chapter

## 4

# Economy

## Goods & Services Tax (GST)

### Why in News

- 6 years of Goods & Services Tax (GST) in India

### Important Points

- The nation-wide single indirect tax, Goods and Services Tax (GST) completed its 6 years run on 1st July 2023.
- It was implemented on July 1st 2017 in India. Its Council is holding meeting on 11th July 2023.

### Basics of GST

- France was the first country to implement GST to reduce tax evasion. Since then, over 160 countries have implemented GST or VAT (on both goods and services), with some countries having a du-al-GST model for example, Brazil, Canada and India.
- GST is an indirect tax which has replaced many indirect taxes in India such as the value added tax, service tax, purchase tax, excise duty, etc. GST is imposed on the supply of specific products and services.
- GST is a multi-stage tax system which is comprehensive in nature and applied on the sale of goods and services. The main aim of this taxation system is to curb the cascading effect of other Indirect taxes and it is applicable throughout India.
- The GST Council has assigned GST rates of 5% GST, 12% GST, 18% GST, and 28% to different goods and services. GST rates for goods and services have been changed few times since its implemen-tation.
- Indirect tax will be levied by Central and State Government called Central GST (CGST) and State GST (SGST), respectively. The tax is largely destination-based.



### Features of GST

- One Nation, One Tax:** GST replaced multiple indirect taxes levied by the Central and State Govern-ments, such as excise duty, service tax, value-added tax (VAT), and others. It brought uniformity in the tax structure across India, eliminating the cascading effect of taxes.
- Dual Structure:** GST operates under a dual structure, comprising the Central GST (CGST) levied by the Central Government and the State GST (SGST) levied by the State Governments. In the case of Inter-state transactions, Integrated GST (IGST) is applicable, which is collected by the Central Government and apportioned to the respective State. Import of goods or services would be treated as inter-state supplies and would be subject to IGST in addition to the applicable customs duties.
- Destination-based Tax:** GST is a destination-based tax, levied at each stage of the supply chain, from the manufacturer to the consumer. It is applied to the value addition at each stage, allowing for the seamless flow of credits and reducing the tax burden on the end consumer.
- Input Tax Credit (ITC):** GST allows for the utilization of input tax credit, wherein businesses can claim credit for the tax paid on inputs used in the production or provision of goods and services. This helps avoid double taxation and reduces the overall tax liability.
- GST would apply on all goods and services except Alcohol for human consumption. GST on five specified petroleum products (Crude, Petrol, Diesel, ATF & Natural Gas) would be applicable from a date to be recommended by the GSTC. Tobacco and tobacco products would be subject to GST. In addition, the Centre would have the power to levy Central Excise duty on these prod-ucts. Exports are zero-rated supplies. Thus, goods or services that are exported would not suffer input taxes or taxes on finished products.
- Threshold Exemption:** Small businesses with a turnover below a specified threshold (currently, the threshold is Rs 20 lakhs for supplier of services/both goods & services and Rs 40 lakhs for supplier of goods (Intra-Sate)

in India) are exempt from GST. For some special category states, the thresh-old varies between Rs10-20 lakhs for suppliers of goods and/or services except for Jammu & Kashmir, Himachal Pradesh and Assam where the threshold is Rs 20 lakhs for supplier of ser-vices/both goods & services and Rs 40 lakhs for supplier of goods (Intra-Sate). This threshold helps in reducing the compliance burden on small-scale businesses.

- **Composition Scheme:** The composition scheme is available for small taxpayers with a turnover below a prescribed limit (currently Rs 1.5 crores and Rs 75 lakhs for special category state). Under this scheme, businesses are required to pay a fixed percentage of their turnover as GST and have sim-plified compliance requirements.
- **Online Compliance:** GST introduced an online portal, the Goods and Services Tax Network (GSTN), for registration, filing of returns, payment of taxes, and other compliance-related activities. It streamlined the process and made it easier for taxpayers to fulfill their obligations.
- **Anti-Profiteering Measures:** To ensure that the benefits of GST are passed on to the consumers, the government established the National Anti-Profiteering Authority (NAA). The NAA monitored and ensured that businesses do not engage in unfair pricing practices and profiteering due to the implementation of GST. All GST anti-profiteering complaints are now dealt by the Competition Commission of India (CCI) from 1st December, 2022.
- **Increased Compliance and Transparency:** GST aims to enhance tax compliance by bringing more businesses into the formal economy. The transparent nature of the tax system, with the digitiza-tion of processes and electronic records, helps in curbing tax evasion and increasing transparen-cy.
- **Sector-specific Exemptions:** Certain sectors, such as healthcare, education, and basic necessities like food grains, are given either exempted from GST or have reduced tax rates to ensure affordability and accessibility.
- **Accounts would be settled periodically between the Centre and the States to ensure that the credit of SGST used for payment of IGST is transferred by the Exporting State to the Centre. Similarly, IGST used for payment of SGST would be transferred by the Centre to the Importing State. Fur-ther, the SGST portion of IGST collected on B2C supplies would also be transferred by the Centre to the destination State. The transfer of funds would be carried out on the basis of information contained in the returns filed by the taxpayers.**

#### **GST Council -**

- Any recommendations that are made to the State and Union Government regarding any issues that are related to GST are undertaken by the GST Council. The chairman of GST Council is Union Finance Minister of India. The other members of the GST Council are the Union State Minister of Revenue or Finance of all the states.

#### **Achievements -**

- Increasing tax base from 63.9 lakh taxpayers in 2017 to 1.40 crore currently.
- GST monthly average revenue has grown from 89.8 crore in 2017 to 1.87 Lakh crore in April 2023.
- Promote economic federalism through GST Council.
- Other benefits: Easy compliance, uniformity of tax rates and structures, removal of cascading taxes, Reduced logistics cost, E-invoicing system to check fake invoicing etc.

#### **Areas of concern -**

- Multiple slabs instead of proposed three-rate GST structure with frequent changes.
- Lack of clarity on GST Compensation to states which ended with completion of 5 years.
- Unequal Voting Structure in GST Council.
- Certain items are still out of the GST regime like Petrol and diesel.
- Other Challenges: Cumbersome filling structure, fake invoicing etc.

## CSR

### Why in News

- Corporate social responsibility (CSR) spending up, but impact limited

#### Important Points

- The Ministry of Corporate Affairs (MCA) has flagged the limited impact of corporate social responsi-bility (CSR) initiatives despite a spike in such spending in recent years, and called on India Inc to adopt a long-term approach “to yield productive results”.
- As per the ministry the CSR spending stood at Rs 26,210 crore in FY21, having grown 80% from FY16.
- The MCA has also expressed concerns over wide regional disparity in the deployment of the CSR funds and called on companies to balance their area preference with national priorities.

- According to rules, companies of a certain size are required to spend, annually, at least 2% of their average net profits made in the previous three financial years.
- The MCA has also highlighted the need to ensure the initiatives undertaken become self-sustaining so that the CSR programmes can run seamlessly without being a burden on the companies themselves.
- The emphasis should be on creating an appropriate structure for CSR, ensuring that the funds go towards the well-being of the community.
- Further, the highest quality of risk management framework needs to be adopted, so as to make the CSR projects sustainable.
- As for regional disparity, the ministry pointed out that just ten states--including industrial ones such as Maharashtra, Gujarat, Karnataka and Andhra Pradesh--grabbed over 44% of the CSR funds in FY21, while the eight north-eastern ones received a mere 0.91%.
- The MCA acknowledged the potential reason for such disparity could be the stipulation under the Section 135(5) of the Companies Act 2013 that companies should give preference to the areas around which they operate while allocating CSR funds.
- Education, healthcare, and rural development have remained the top receivers of the CSR funds.
- According to the official data, between FY15 and FY21, the education sector (including education, livelihood enhancement projects, special education and vocational skills) received Rs 47,188 crore, or about 37% of the total CSR spending.
- The health sector (including healthcare, poverty, eradicating hunger, malnutrition, sanitation and Swachh Bharat) comes next, with a 30% share in such expenditure amounting to Rs 38,011 crore. Rural development projects received Rs 12,300 crore, accounting for 9.6% of the total CSR expenditure.



### Types of CSR

- Environmental corporate responsibility: Environmental responsibility refers to the organization's commitment to sustainability and environmentally friendly operations.
- Ethical/human rights social responsibility: Ethical responsibility refers to a company's commitment to operate their business in an ethical manner that upholds human rights principles, such as fair treatment of all stakeholders, fair trade practices and equal pay.
- Philanthropic corporate responsibility: Philanthropic responsibility refers to a corporation's aims, goals and objectives for actively bettering society as a whole. One huge aspect of corporate philanthropy is donating money from company earnings to worthy causes within the local community — often in the form of a trust or foundation.
- Economic corporate responsibility: Economic responsibility refers to the practice of making financial decisions based on a commitment to doing good.

### Positive Impacts of CSR

- Enhanced Reputation and Brand Value: CSR improves a company's reputation, enhances its brand value, and builds trust among customers.
- Improved Customer Relations: CSR initiatives attract socially conscious consumers, leading to increased customer satisfaction, loyalty, and an expanded consumer network.
- Increased Employee Engagement and Retention: CSR activities create a sense of purpose, leading to higher employee engagement, job satisfaction, and better employee retention.
- Positive Impact on Communities and Society: CSR programs address societal issues and contribute to the well-being of communities, making a positive impact on society.

### Negative Impacts of CSR

- Increased administrative burden and enforcement fees: Small companies may struggle to afford the expenses associated with CSR compliance, leading to financial burdens and potential enforcement fees.
- Conflicts between different business goals: Balancing profit goals with CSR objectives can create challenges and potential disagreements among stakeholders, impacting decision-making processes.
- The 'greenwashing' impact: Consumers are increasingly wary of companies engaging in superficial or deceptive CSR practices, which can damage a company's reputation and result in negative public perception.

## FTA

## Why in News

- Rules of origin delay FTA tariff discussions with EU

## Important Points

- India and the European Union (EU) have not been able to make major progress in the tariff negotiations under the ongoing free trade agreement (FTA) discussions due to differences over the rules of origin criteria.
- This is because India wants a conservative rule of origin, while the EU wants us to follow liberal criteria.

## Rules of origin -

- Rules of origin criteria are critical to determining the country of origin of a product. The country of origin refers to the country where the products were manufactured or substantially transformed.

## Rules of origin used for -

- To implement measures and instruments of commercial policy, such as anti-dumping duties and safeguard measures;
- To determine whether imported products shall receive most-favored-nation (MFN) treatment or preferential treatment;
- For the purpose of trade statistics;
- For the application of labeling and marking requirements and
- For government procurement.

## Criteria used to qualify for the rules of origin requirements :

- Tariff level changes and minimum value additions are the two most commonly used criteria for a product to qualify for the rules of origin requirements.
- Most developed countries prefer the flexibility to use either of the criteria, as it allows flexibility for exporters. India has traditionally preferred the use of both criteria and is not given the flexibility to use either of them.



## Rupees against Yuan

## Why in News

- Rupee has appreciated 6% versus the Chinese Yuan in last three months

## Important Points

- The dollar index and treasury yields again fell with new US inflation data showing a slowdown in the seemingly relentless rise of consumer prices.
- China's growth story remains disappointing, leading to a steady fall in the yuan.
- China's economy grew 6.3 percent in the April-June quarter of the current financial year.
- The 6.3 percent growth in China's gross domestic product in April-June outpaced the 4.5 percent growth in the previous quarter, according to government data released.
- In quarterly terms, the economy grew 0.8 percent compared to the first three months of the year.
- The Chinese yuan has been depreciating against the dollar and the rupee.
- From March 31 to June 30, the rupee has appreciated 6% versus the Chinese currency, Bloomberg data showed.
- For the calendar year so far, the rupee's appreciation is at similar levels and taking into account the rupee's gains from its lows versus the yuan touched in January, the domestic currency has strengthened as much as 8%.
- While slowing Chinese growth has cast a shadow on global economic prospects, given the prevailing trade dynamics, India stands to benefit from the inflation perspective.





### Possible impact on India -

- It can lead to an increase in the import from China.
- It may help to bring down core inflation (excluding food and energy) because imported Chinese goods will be cheaper.

## Internationalisation of Rupee

### Why in News

- RBI panel recommends measures for internationalisation of rupee

#### Important Points

- A Reserve Bank of India-appointed working group recommended various measures, including inclusion of the rupee in the Special Drawing Rights (SDR) basket and recalibration of the foreign portfolio investor (FPI) regime to accelerate the pace of internationalisation of the rupee.
- The recommendations by an Inter-Departmental Group (IDG), headed by RBI Executive Director.
- Internationalisation of the rupee is a process that involves increasing use of the local currency in cross-border transactions.
- The rupee has the potential to become an internationalised currency as India is one of the fastest growing countries and has shown remarkable resilience even in the face of major headwinds.
- Higher usage of the rupee in invoicing and settlement of international trade, as well as in capital account transactions, will give the domestic current a progressively international presence.
- Last year RBI put in place a mechanism to settle international trade in rupees in order to promote growth of global trade with emphasis on exports from India and to support the increasing interest of the global trading community in the rupee.
- The country have had the rupee arrangements with Bhutan and Nepal for a long time, the recent decision by Sri Lanka to formally include the rupee as a designated foreign currency augurs well for incremental internationalisation of the domestic currency.



#### SDR (Special Drawing Rights)

- As part of the long term measures to achieve internationalisation of the rupee, the group suggested inclusion of the rupee in SDR (Special Drawing Rights) basket.
- The SDR is an international reserve asset created by the IMF (International Monetary Fund) to supplement the official reserves of its member countries.
- The value of the SDR is based on a basket of five currencies—the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.

#### Measures to internationalise the rupee :

- Short term measures: a standardised approach or /uniform template should be adopted for examining all proposals that involve bilateral and multilateral trade agreements/arrangements for invoicing, settlement and payment in the rupee and local currencies of counterpart countries, local currency settlement mechanisms and bilateral swaps. Use of the existing bilateral and multilateral payment and settlement mechanisms, such as ACU (Asian Clearing Union) help to internationalise the rupee.
- For the medium term, a review of withholding tax for masala bonds issuances, expansion of RTGS (Real Time Gross Settlement) system for settling international transactions and inclusion of the rupee in Continuous Linked Settlement (CLS) system.

## Sovereign Green Bonds

### Why in News

- Recently, the Chairman of Pension Fund Regulatory and Development Authority (PFRDA) said the regulator is keen on pension funds investing in sovereign green bonds (SGBs).



### Important Points

- The Government of India is expected to issue sovereign green bonds in the second half of the current financial year as part of the overall market borrowing programme.

### About Sovereign Green Bonds

- These are bonds issued by any sovereign entity, inter-governmental groups or alliances and corpo-rates.
- Aim: The proceeds of the bonds are utilised for projects classified as environmentally sustainable.
- These are issued with longer maturity period.
- In India, the framework for the sovereign green bond was issued by the government on November 9, 2022.

### Key Facts about the PFRDA -

- It is a statutory regulatory body set up under PFRDA Act enacted in 2014.
- Objective: To promote old age income security by establishing, developing, and regulating pension funds and to protect the interests of subscribers to schemes of pension funds and related matters.
- Composition: It consists of a Chairperson and not more than six members, of whom at least three shall be Whole-Time Members, to be appointed by the Central Government.
- Nodal Ministry: Ministry of Finance.
- Headquarters: New Delhi

### Functions

- Regulate National Pension System (NPS) and other pension schemes to which PFRDA Act applies.
- Establish, develop and regulate pension funds.
- Protect the interest of pension fund subscribers.
- Register and regulate intermediaries.
- Laying down norms for management of corpus of pension funds.
- Establish grievance redressal mechanism for subscribers.
- Settle disputes among intermediaries and also between intermediaries and subscribers.

## SEBI

### Why in News

- SEBI says tightened FPI regulations, but tax havens pose a global challenge

### Important Points

- An expert committee appointed by SC recently said that the difficulties experienced by SEBI in identifying holders of economic interest were partly because of repeal of 2014 provisions on “opaque structures” in 2019.
- The expert committee was set up to investigate if there was violation of the minimum public share-holding norms.

### SEBI's actions

- Sebi, with the regulatory changes governing FPIs in 2018 and 2019, has tightened the disclosure re-quirement for beneficial owners (BOs) of FPIs.
- In some cases entities having economic interest in an FPI are in jurisdictions where the equivalent PMLA, 2002 regulations require BO identification only on the basis of control or ownership.
- Thus, the investment manager/ trustee etc. acting through arrangements such as voting shares/ management shares, is then identified as the BO of the FPI.
- Consequently, while in compliance with the regulations, the actual investing constituents with economic interest may not be identified as BOs of the FPI.



- This issue is further accentuated if holdings of such investors are spread through multiple FPIs.
- SEBI said every FPI had to mandatorily disclose all their BOs upfront
- In the absence of any natural person BO, an SMO (Senior Managing Official) is identified as the BO.
- With this, the dispensation under FPI 2014 regulations that allowed certain FPIs to register, inter-alia, on the basis of an undertaking to provide BO details when sought, was no longer available.
- In essence, the ability of SEBI to seek additional details as required to ensure compliance with extant regulations existed both during the 2014 regime, and continue to exist currently under the 2019 regulations.

#### Views on minimum public shareholding -

- SEBI has approved the proposal for additional granular disclosures to the last investor from specified types of FPIs that either hold more than 50% of their AUM in a single corporate group, or have a total AUM of over Rs 25,000 crore subject to certain exemptions.
- The regulator also differed from the views of the expert committee on dealing with allegations of re-lated party transactions (RPTs), arrangements or deals between two entities which have a com-mon interest or a relationship, by companies.
- Sebi said if a scheme to circumvent regulations is identified, the presence of a long-standing rela-tionship in it can lend credence to the allegation of violation.
- Sebi also differed from the expert committee's observations relating to timelines for investigations and proceedings.

#### About SEBI -

- A statutory organisation formed on April 12, 1992, in compliance with the requirements of the Secu-rities and Exchange Board of India Act, 1992.
- Headquarters: Mumbai
- 4 regional offices: Ahmedabad, Chennai, Delhi, and Kolkata.

#### Functions :

- To safeguard the interests of investors in securities.
- To promote and regulate the securities market.

## Balance Sheet

### Why in News

- Indian economy has moved away from twin-balance sheet problem, banks now profitable.

#### Important Points

- Finance Minister said that the Indian economy has moved away from the twin-balance sheet prob-lem of banks and corporates to twin-balance sheet advantage because of the concerted efforts of the Modi Government.
- Profit of public sector banks increased to Rs 1.04 lakh crore in 2022-23, tripling from what it was in 2014.
- The twin-balance sheet problem refers to deterioration in financial health of banks and corporates at the same time.
- According to the Reserve Bank, the Indian economy is now benefiting from the twin-balance sheet advantage.
- There was an improvement in all critical parameters like return on asset, net interest margin and provisioning coverage ratio.



#### Twin Balance Sheet Syndrome :

- 'Twin Balance Sheet Syndrome' (TBS) is a scenario where banks are under severe stress due to:
- High levels of non-performing assets (NPAs)
- High provision requirements
- Low profits and
- Low capital adequacy ratios (CAR)

## Strategy to tackle twin-balance sheet problem

- The 4R strategy refers to recognising the problem of non-performing assets, recapitalising the banks, resolving their problems, and reforming them.
- Data collection and sharing - Introduced the Central Repository of Information on Large Credits (CRILC) to enable banks to share information on large loan accounts of Rs 5 core and above in 2014.
- RBI insisted collection of information on loans overdue up to 90 days known as Special Mention Accounts (SMA).
- Insolvency and Bankruptcy Code, 2016: The enactment of the Insolvency and Bankruptcy Code (IBC) in 2016 and the formation of the Insolvency and Bankruptcy Board of India (IBBI) helped hasten problem loan resolution.
- National Asset Reconstruction Company (NARCL) to handle bad debt.
- RBI Measures - The merger of PSBs during 2017-21 brought them down from 27 to 12 and turned PSBs into stronger entities with potential higher risk appetite.
- EASE - To perpetuate TBS, PSBs needed large capital infusion.
- Bad bank - National Asset Reconstruction Company Ltd (NARCL), also had to be formed to tackle toxic assets.

## GST Council

### Why in News

- GST council announced to levy a uniform 28% tax on online gaming companies

### Important Points

- The Goods and Services Tax (GST) Council, in its 50th meeting, decided to levy a uniform 28% tax on full face value for online gaming, casinos and horse-racing, while reducing the rate for un-cooked/ unfried snack pellets, cancer medicine and imitation zari thread.

#### Goods and Services Tax (GST) -

- It is an indirect tax (not directly paid by customers to the government), that came into effect from 1 July 2017 through the implementation of the 101st Amendment to the Constitution of India by the Indian government.
- It has actually replaced various indirect taxes such as - service taxes, VAT, excise and others in the country.
- It is levied on the manufacturer or seller of goods and the providers of services.
- It is divided into five different tax slabs for collection of tax - 0%, 5%, 12%, 18% and 28%.
- Types of GST: State Goods and Services Tax (SGST), Central Goods and Services Tax (CGST) and the Integrated Goods and Services Tax (IGST, on exports and imports).

#### GST Council -

- Article 279A of the Indian Constitution gives power to the President of India to constitute a joint forum of the Centre and States called the GST Council, consisting of the -
- Union Finance Minister - Chairperson
- The Union Minister of State, in-charge of Revenue of finance - Member
- The Minister in-charge of finance or taxation or any other Minister nominated by each State Government - Members
- The GST Council is an apex committee to modify, reconcile or to make recommendations to the Union and the States on GST, like the goods and services that may be subjected or exempted from GST, model GST laws, etc.
- Levy 28% GST on online gaming, horse racing, casinos on full value:
- The GST council agreed that there should be no distinction between 'game of skill and game of chance.'
- While the Group of Ministers (GoM) in their previous meeting broadly agreed for the proposed taxes on the said activities, there was no consensus on online gaming as Goa proposed to impose only 18% tax on platform fees.
- According to online gaming companies, 28% GST will not only hamper online gaming platforms' capacity to



develop new games and technologies but will also undermine their competitiveness in the market.

#### Tax on food and beverages in Cinema Halls:

- The council announced that the GST on restaurants inside Cineplex to attract 5% GST against 18% earlier.
- Before the change, movie tickets below Rs 100 were taxed at 12%, while those above the threshold attracted 18% GST.
- The entire supply (tickets + eatables) should be treated as composite supply and taxed as per the applicable rate of the principal supply, which in this case is cinema ticket.

#### Council to exempt GST on cancer drugs:

- Further, the meeting also decided to exempt GST on import of cancer drug Dinutuximab, and Food for Special Medical Purposes (FSMP) used in the treatment of rare diseases.
- Currently, the drug attracts a 12% integrated GST.

#### Council on Taxation on MUV :

- The GST Council also decided on the definition of utility vehicles and tightening of norms for registration.
- A clarity on taxation of Multi Utility Vehicles (MUV) was provided. The Council has agreed to the recommendation to levy a 22% compensation cess for MUV, but Sedan has not been included in the list.
- Council to set up appellate tribunal: The Finance Minister has said that many states during the meeting have requested for benches. She added that no request will be denied.

## TRAI

### Why in News

- TRAI Announces Statutory Body To Regulate AI Use Cases

#### Important Points

- Following repeated discussions on the needs to regulate artificial intelligence (AI), the Telecom Regulatory Authority of India (TRAI) has released recommendations titled 'Leveraging Artificial Intelligence (AI) and Big Data in Telecommunication Sector'.
- The advisory states that the regulatory framework should ensure that certain AI use cases that directly affect individuals are taken under a risk-based framework.



#### Highlights of report -

- Opportunities in the adoption of AI and Big data in telecom sector:
- Potential to improve efficiency, productivity and automation.
- Expected to enhance network speed, capacity and latency by providing actionable insights.
- Offers intelligent automated systems in designing, deployment, maintenance and managing network complexities including proactively securing the network.

#### Constraints :

- Policy and regulatory challenges due to absence of a Data Protection Bill in India.
- Limited AI expertise and knowledge, access to quality data and AI specific infrastructure.
- Limited access to data, inadequate computing infrastructure, and limited R&D efforts.
- Interoperability and compatibility among different AI systems and data sources.
- Lack of industry-wide standards hampers the exchange of information.

#### Recommendations :

- Regulatory framework should comprise an independent statutory authority, a Multi-Stakeholder Body (MSB) that will act as an advisory body to the proposed statutory authority, and Categorizations of the AI use cases based on their risk and regulating them according to broad principles of Responsible AI.
- The AIDAI should frame regulations on various aspects of AI, including its responsible use. Defining principles of responsible AI and their applicability to AI use cases based on risk assessment.
- AIDAI should evolve the framework based on its assessment, advice of proposed MSB, global best practices, and public consultation.

- The body should also ensure that responsible AI principles are applicable at each phase of the AI framework lifecycle. They should develop a model AI Governance Framework to guide organizations on responsibly deploying AI.
- The other functions of the body will be to set up regulatory sandboxes for testing AI-based solutions collaborating with standard-setting bodies of various sectors, collaborating with international regulators, providing a platform for industry and academic collaboration, and creating awareness of the responsible use of AI.

## Oil Trade

### Why in News

- The Dramatic Transformation of India's Oil Trade with Russia

#### Important Points

- For over a year, India, the world's third-largest consumer of crude oil with an import dependency of more than 85%, has been entangled in a passionate affair with Russian oil.
- Aftermath invasion of Ukraine, Russia began offering deep discounts to willing buyers as Western countries turned their backs on its oil. Prior to the conflict, Russia had a minor role in India's oil trade, which was predominantly dominated by West Asian suppliers like Iraq, Saudi Arabia, and the UAE. However, the discounts offered by Russia led to a drastic transformation, making it India's primary source of crude oil



#### India's Oil Trade with Russia -

- According to data from the Directorate General of Commercial Intelligence and Statistics (DGCI&S), India's oil imports from Russia surged more than tenfold since April 2022.
- This steady growth gained momentum, particularly after the G7 imposed a \$60-per-barrel price cap on seaborne Russian crude in December 2022.
- Russia's market share skyrocketed to 24.2% during the 14-month period, up from a mere 2% in FY22. In contrast, other major suppliers such as Iraq, Nigeria, and the US witnessed substantial declines in their market shares.
- OPEC's share in India's oil imports fell by almost half, from 75.3% in May 2022 to 40.3% in May 2023.
- Among the major suppliers to India, several OPEC members saw their market shares decline, while Russia's share surged from 6% to 40.4%.

#### Factors Led to the Growth in Indian Import of Russian Oil -

##### Western Sanctions on Russian Oil -

- The EU stopped importing Russian coal and banned refined oil imports.
- The US and UK banned all Russian oil and gas imports.
- Germany stopped the opening of the Nordstream 2 gas pipeline from Russia.
- In December 2022, the EU and G7 set a maximum price of \$60 a barrel for Russian crude oil.
- Huge Discounts Offered by Russia
- Russia heavily relied on countries like India, China, Turkey, and Bulgaria for oil sales since the imposition of sanctions imposed by western nations.
- Russia offered huge discounts on crude oil to interested countries. India used the opportunity to its advantage.

##### Concerns -

- India's deepening energy ties with Russia amid geopolitical tensions and international sanctions may expose India to geopolitical risks.
- The association with Russian oil could lead to diplomatic complexities with other nations.
- Despite diversifying energy sources, there is still concern about over-reliance on Russian oil.
- India's substantial imports from Russia could leave it vulnerable to supply disruptions or geopolitical developments affecting Russian exports.
- The volatility of discount levels on Russian oil adds uncertainty to India's energy trade calculations.
- The lack of transparency in the pricing of Russian oil cargoes makes determining exact discounts challenging, leading to uncertainties in trade negotiations and financial planning.

## Logistics Data Bank Project

### Why in News

- Recently, the Department for Promotion of Industry and Internal Trade (DPIIT) held a Logistics Data Bank Project (LDB) Meeting to review the measures taken by Port Authorities to improve port performance.

### Important Points

- This project was launched on 2016 at the Jawaharlal Nehru Port, Mumbai.
- Objectives: The project launched to make India's logistics sector more efficient through the use of Information Technology.
- Implementing Agency: It is being implemented through a Special Purpose Vehicle called Delhi Mumbai Industrial Corridor Development Corporation Logistics Data Services Ltd. (DLDSL) - that is jointly (50:50) owned by the Delhi Mumbai Industrial Corridor (DMIC) Trust and Japanese IT services major NEC Corporation.
- It is billed as a major 'ease of doing business' initiative aimed at boosting India's foreign trade and ensuring greater transparency.
- Nodal Ministry: Ministry of Commerce and Industry.



### Key features

- Every container is attached to a Radio Frequency Identification Tag (RFID) tag and then tracked through RFID readers - aids importers and exporters in tracking their goods in transit.
- This has, in turn, cut the overall lead time of container movement as well as reduced transaction costs that consignees and shippers incur.
- The project covers "the entire movement (of containers) through rail or road till the Inland Container Depot and Container Freight Station.
- The service integrates information available with the agencies across the supply chain to provide detailed, real-time information within a single window.

## Windfall Tax

### Why in News

- India reimposes windfall tax on petroleum crude after two months

### Important Points

- The Indian government has reimposed a windfall tax on domestic petroleum crude according to a government notification. The Special Additional Excise Duty (SAED) on crude petroleum is raised to Rs 1600/per metric tonne, from nil.
- Notification added that the government has left the windfall tax on diesel, petrol and aviation turbine fuel unchanged at zero. India had cut the windfall tax on petroleum crude to zero from Rs 4,100 per tonne in May 2023.
- India earlier had imposed the windfall tax on crude oil producers and extended the levy on exports of gasoline, diesel and ATF, joining a growing number of nations that tax super-normal profits of energy companies.
- While duties were slapped on the export of petrol, diesel and jet fuel (ATF), a Special Additional Excise Duty (SAED) was levied on locally produced crude oil.
- The tax rates are reviewed every fortnight based on the average oil prices in the previous two weeks.
- Windfall profit tax is calculated by taking away any price that producers are getting above a threshold.



- Global oil prices in recent days have risen to their highest in nearly three months after U.S. inflation data suggested interest rates in the world's biggest economy were close to their peak.
- International Brent crude futures were trading above \$80 per barrel. Data on Wednesday showed U.S. consumer prices rose modestly in June and registered their smallest annual increase in more than two years as inflation continued to subside.
- The data caused the U.S. dollar index to drop to the lowest since April 2022, which helped to boost oil prices. A weaker dollar makes crude cheaper for holders of other currencies.

#### What is it ?

- It is a higher tax levied by the government on specific industries when they experience unexpected and above-average profits.

#### When is it imposed?

- When the government notices a sudden increase in an industry's revenue, they impose this tax.
- However, these revenues cannot be linked to anything the company actively pursued, such as its business strategy or expansion.
- Consequently, a Windfall Tax is imposed on an industry's profits when it experiences a sharp increase in revenue due to unrelated external events.

#### Reason behind the imposition :

- Redistribution of unexpected gains, when high prices benefit producers at the expense of consumers;
- To fund social welfare schemes;
- As a supplementary revenue stream for the government;
- As a way for the Government to narrow the country's widened trade deficit;

## AT-1 Bond

### Why in News

- The underwhelming subscription to State Bank of India's additional tier-1 (AT-1) bond issue has dampened market sentiment and is expected to make fund-raising harder for other PSU banks

#### Important Points

- SBI raised Rs 3,101 crore against an issue size of Rs 10,000 crore.
- The AT-1 bonds had a base issue of Rs 3,000 crore and received total bids worth Rs 5,920 crore.
- Even though SBI might feel okay restricting the coupon to 8.1 per cent, unfortunately, being the first issuer for FY24 and SBI being the leader for all PSU banks has hit market sentiment.
- Investors are feeling they have not got the real value or coupon for the AT-1 bonds.
- SBI raised the funds at 8.1 per cent, 91 bps higher than the yield on the 10-year benchmark g-sec, and against bids received in the range of 7.90–8.42 per cent.
- A less than 100 bps differential in the current volatile market, combined with the huge issue size and the 10-year call option, does not seem to have gone down well with investors, especially given that SBI is considered the benchmark.
- This reflects that banks continue to misprice the risk-reward ratio for AT-1 bonds.
- AT1 instruments are loss-absorbing, so it is possible investors expect a higher return against that risk.
- The probability of losses being imposed on state banks' AT-1 is low, but it is still a risk nonetheless, should such a situation arise.



#### Cautious approach

- A lot of the other PSU banks, such as Punjab National Bank, Canara Bank, and Bank of Baroda, which have either taken the necessary approvals or are lining up bonds, might now “wait and watch” to assess if the market will pick up, look to offer higher rates, or delay their fund raising by a few weeks or months.
- Market participants believe at least a 15-20 bps premium over the current rates would help AT-1 bonds be



appropriately priced to tap market appetite in the current market environment, which is already seeing some overcrowding in the long-tenure space, leading to a pricing mismatch.

### Additional Tier – 1 Bonds

- AT-1 bonds are a type of unsecured, perpetual bonds that banks issue to shore up their core capital base to meet the Basel-III norms.

**There are two routes through which these bonds can be acquired :**

- Initial private placement offers of AT-1 bonds by banks seeking to raise money.
- Secondary market buys of already-traded AT-1 bonds.
- AT-1 bonds are like any other bonds issued by banks and companies, but pay a slightly higher rate of interest compared to other bonds.
- These bonds are also listed and traded on the exchanges. So, if an AT-1 bondholder needs money, he can sell it in the secondary market.
- Investors cannot return these bonds to the issuing bank and get the money. i.e there is no put option available to its holders.
- However, the issuing banks have the option to recall AT-1 bonds issued by them (termed call options that allow banks to redeem them after 5 or 10 years).
- Banks issuing AT-1 bonds can skip interest payouts for a particular year or even reduce the bonds' face value.
- AT-1 bonds are regulated by RBI. If the RBI feels that a bank needs a rescue, it can simply ask the bank to write off its outstanding AT-1 bonds without consulting its investors.

**Bonds -**

- A bond is simply a loan taken out by a company.
- Instead of going to a bank, the company gets the money from investors who buy its bonds.
- In exchange for the capital, the company pays an interest coupon, which is the annual interest rate paid on a bond expressed as a percentage of the face value.

## Financial Stability Board

### Why in News

- FSB Global Regulatory Framework for Crypto-asset Activities

### Important Points

- The FSB is finalising its global regulatory framework for crypto-asset activities to promote the com-prehensiveness and international consistency of regulatory and supervisory approaches.
- The framework is based on the principle of 'same activity, same risk, same regulation' and provides a strong basis for ensuring that crypto-asset activities and so-called stablecoins are subject to con-sistent and comprehensive regulation, commensurate to the risks they pose, while supporting re-sponsible innovations potentially brought by the technological change.

**It consists of two distinct sets of recommendations :**

- High-level recommendations for the regulation, supervision and oversight of crypto-asset activi-ties and markets;
- Revised high-level recommendations for the regulation, supervision, and oversight of "global sta-blecoin" arrangements.
- The recommendations focus on addressing risks to financial stability, and they do not comprehen-sively cover all specific risk categories related to crypto-asset activities.
- They take account of lessons from events of the past year in crypto-asset markets, as well as feedback received during the public consultation of the FSB's proposals.
- Central Bank Digital Currencies (CBDCs), envisaged as digitalised central bank liabilities, are not subject to these recommendations.
- This document describes how the two distinct sets of recommendations build a framework for the regulation,



supervision and oversight of global stablecoins arrangements and other crypto-asset activities.

- The FSB and the sectoral standard-setting bodies (SSBs) have developed a shared workplan for 2023 and beyond, through which they will continue to coordinate work, under their respective man-dates, to promote the development of a comprehensive and coherent global regulatory frame-work commensurate to the risks crypto-asset markets activities may pose to jurisdictions world-wide, including through the provision of more granular guidance by SSBs, monitoring and public reporting.

### About Crypto-assets and Stablecoins

- Crypto-assets are a type of private sector digital asset that depends primarily on cryptography and distributed ledger or similar technology.
- Different segments of crypto-asset markets are – unbacked crypto-assets (such as Bitcoin), stable-coins, and decentralised finance (DeFi).
- Stablecoin is a cryptocurrency whose value is pegged to the price of another asset.

#### About FSB -

- Established in 2009 under aegis of G20, it is an international body (India a member) that monitors and makes recommendations about global financial system.
- It seeks to strengthen financial systems and increase the stability of international financial markets.
- FSB's is not a treaty-based organisation and its decisions are not legally binding.

## Global Tax Deal

### Why in News

- 138 countries and jurisdictions agree historic milestone to implement global tax deal

### Important Points

- 138 members of the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) - representing over 90% of global GDP - agreed an Outcome Statement recognising the significant progress made and allowing countries and jurisdictions to move forward with historic, major re-form of the international tax system.
- The Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy will ensure a fairer distribution of profits and taxing rights among countries and jurisdictions with respect to the world's largest Multinational Enterprises (MNEs).
- The Two-Pillar Solution will provide stability for the international tax system, making it fairer and work better in an increasingly digitalised and globalised world economy.
- The OECD will also prepare a comprehensive action plan to support the swift and co-ordinated implementation, with additional support and technical assistance to enhance capacity for implementation by developing countries.
- The Outcome Statement summarises the package of deliverables developed by the Inclusive Framework to address the remaining elements of the Two-Pillar Solution:
- A text of a Multilateral Convention (MLC) developed by the Inclusive Framework, which allows jurisdictions to reallocate and exercise a domestic taxing right over a portion of MNE residual profits (Amount A of Pillar One). The Inclusive Framework will publish the text of the MLC once it has been prepared for signature, upon resolution of a small number of specific items, as a few jurisdictions have expressed concerns with some specific items in the MLC;
- A proposed framework for the simplified and streamlined application of the arm's length principle to in-country baseline marketing and distribution activities (Amount B of Pillar One); where input from stakeholders is requested on certain aspects prior to finalisation;
- The Subject-to-Tax Rule (STTR) together with its implementation framework, which will enable developing countries to update bilateral tax treaties to "tax back" income on certain in-tra-group income where such income is subject to low or nominal taxation in the other jurisdiction;
- A comprehensive action plan will be prepared by the OECD to support the swift and co-ordinated implementation of the Two-Pillar Solution, coordinating with regional and international organisations.



## Chapter 5

# Science & Technology

## 6 years of Goods & Services Tax (GST) in India

### Why in News

- CERT-In issues “Guidelines on Information Security Practices” for Government Entities for Safe & Trusted Internet

### Important Points

- Recently the Indian Computer Emergency Response Team (CERT-In) has issued “Guidelines on Information Security Practices” for Government Organizations.
- CERT-In has issued guidelines under Section 70B of the Information Technology (IT) Act, 2000.
- These guidelines apply to all Ministries, Departments, Secretariats and Offices specified in the First Schedule to the Government of India (Allocation of Business) Rules, 1961 as well as to their at-tached and subordinate offices.
- These guidelines provide a roadmap for government institutions and industries. It has the following objectives-
  - Mitigating cyber risk,
  - Protect citizen data and
  - Improve cyber security system in the country.



### Guidelines

- Designating a Chief Information Security Officer (CISO) for IT Security
- Formulation of cyber security policy.
- Assign tasks and responsibilities to the CISO and a dedicated cyber security implementation team.
- Undertake internal and external audit of the entire Information and Communication Technology (CT) infrastructure.
- Also, implementing appropriate security arrangements based on the results of the audit.
- Ensuring proper physical separation of sensitive and wireless networks.
- Data backup policy should be documented, determined and monitored.

### CERT-IN -

- Indian Computer Emergency Response Team (CERT-IN)
- It is the national nodal agency for responding to computer security incidents. It has been established under the provisions of Section 70B of the IT Act, 2000 under the Ministry of Electronics and Information Technology.

### India's other measures for cyber security :

- National Cyber Security Policy 2013
- Indian Cyber Crime Coordination Center (14C) etc.

## Euclid

### Why in News

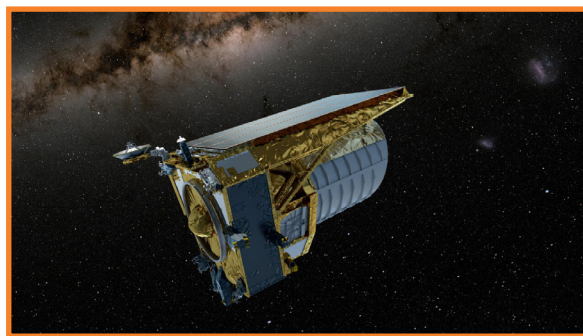
- Euclid telescope lifts off in search of the secrets of dark universe

### Important Points

- A European-built orbital satellite was launched into space from Florida on a mission to shed new light on dark energy and dark matter, the mysterious cosmic forces scientists say account for 95% of the known universe.



- The Euclid telescope, named for the ancient Greek mathematician known as the “father of geometry”, was carried in the cargo bay of a SpaceX Falcon 9 rocket which blasted off from Cape Canaveral Space Force station.
- New insights from the \$1.4bn (£1.1bn) European Space Agency (Esa) mission, designed to last at least six years, are expected to transform astrophysics and perhaps our understanding of the nature of gravity.
- After a short flight to space, Euclid was to be released from the Falcon for a month-long voyage to its destination in solar orbit nearly 1m miles (1.6m km) from Earth – a position of gravitational stability on the far side of the Earth from the sun called the Lagrange point two, or L2.
- From there, Euclid will explore the evolution of the “dark universe” using a wide-angle telescope to survey galaxies as far away as 10bn light years from Earth across an immense expanse of the sky beyond our own Milky Way galaxy.
- The 2-ton spacecraft is also equipped with instruments designed to measure the intensity and spectrums of infrared light from those galaxies in a way that will precisely determine their distances.
- The mission focuses on two foundational components of the dark universe. One is dark matter, the invisible but theoretically influential cosmic scaffolding thought to give shape and texture to the cosmos.
- The other is dark energy, an equally enigmatic force believed to explain why the expansion of the universe has been accelerating.
- The possibilities of the mission are reflected by the size of Euclid’s inquiry. Scientists estimate dark energy and dark matter together make up 95% of the cosmos, while ordinary matter that we can see accounts for just 5%.
- Dark matter and dark energy cannot be detected directly, but their properties are encoded in the shapes and positions of the galaxies.



#### About Euclid -

- Euclid was designed and built entirely by Esa, with the US space agency, Nasa, supplying photodetectors for its near-infrared instrument.
- The Euclid consortium comprises more than 2,000 scientists from 13 European nations, the US, Canada and Japan.

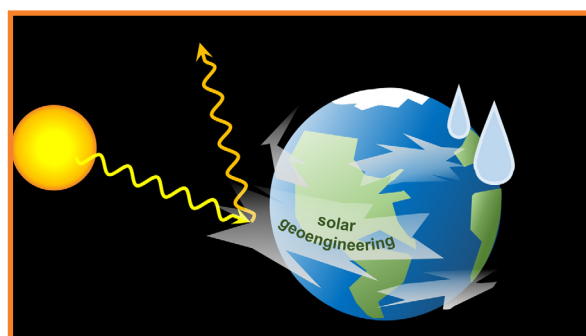
## Solar Geoengineering

### Why in News

- US government considers controversial solar geoengineering to counter global warming

#### Important Points

- The United States is eyeing a controversial tool to counter global warming: Solar radiation management (SRM), which involves reflecting a small fraction of sunlight into space.
- In a report, the White House stated that public or private actors could carry out activities such as injecting aerosols and brightening marine clouds to reflect more sunlight into space.
- Many scientists have expressed concerns over the high environmental, social, and geopolitical risks that come with SRM. The report was developed in coordination with the National Oceanic and Atmospheric Administration and other key US federal agencies.
- The document is a prelude to a research governance framework, which will be established as part of the Consolidated Appropriations Act for Fiscal Year, 2022.
- The framework is expected to provide guidance on transparency, engagement, and risk management for publicly funded work in solar geoengineering research.
- The White House report called for research to enable better-informed decisions about the potential risks and benefits of the tool as part of its climate policy, in addition to mitigation and adaptation.



- However, the USA has not changed its policy stance. The government will remain focused on reducing emissions, increasing resilience, advancing environmental justice, and achieving energy security, according to the report.

### What Is Solar Geoengineering ?

- Solar geoengineering—also referred to as solar radiation management—describes a set of proposed approaches to reflect sunlight to rapidly cool the Earth.
- Within solar geoengineering, researchers are considering two main approaches.
- The first—stratospheric aerosol injection, or SAI—would involve injecting tiny reflecting particles, known as aerosols, into the upper atmosphere to cool the planet.
- The second—marine cloud brightening, or MCB—would use sea salt to stimulate cloud formation over the ocean, which would also help reflect sunlight in the region.

### Report focuses on two methods of SGE -

- Stratospheric Aerosol Injection (SAI): Releasing particles of sulfur dioxide into upper atmosphere to reflect sunlight away from Earth.
- Marine cloud brightening: To improve reflectivity of certain clouds by injecting sea salt using ships.

### Other proposed methods of SGE include -

- High-albedo crops and buildings: Increasing albedo of buildings to reflect more sunlight back to space.
- Ocean mirror: Involves using a fleet of sea vessels to add tiny microbubbles on ocean surface to act as a mirror.
- Cloud thinning: By removing cirrus clouds from atmosphere, their absorption of long wavelength radiations can be curtailed.
- Space sunshades: Involves sending a fleet of mirrors into orbit in order to reflect away more sunlight from Earth.

## One Health

### Why in News

- FAO, UNEP, WHO and WOAHA launch research agenda for antimicrobial resistance

### Important Points

- Four multilateral agencies have launched a priority research agenda to better advocate for increased research and investment in antimicrobial resistance (AMR).
- The 'Quadripartite' — comprising the United Nations (UN) Food and Agriculture Organization (FAO), the UN Environment Programme (UNEP), the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH) — released the One Health Priority Re-search Agenda on Antimicrobial Resistance through a webinar.
- The organisations work specifically in the areas of human, animal, plant, and environmental health.
- On similar lines, WHO also launched a global research agenda for AMR in human health.
- The agenda prioritises 40 research topics for evidence generation to inform policy and interventions by 2030.
- It also aims to guide a variety of stakeholders in generating new evidence to address antimicrobial resistance, with a focus on low- and middle-income countries.
- The agenda will serve as a guide for countries, research institutes and funding bodies to support One Health AMR research. It will also allow policymakers, researchers, and the multidisciplinary scientific community to collaborate across sectors.
- It defined 'One Health' as an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems.
- The concept acknowledges the health of humans, domestic and wild animals, plants, and the larger environment, including ecosystems, are inextricably linked and interdependent.
- At this One Health interface, addressing global health issues necessitates a multisectoral, multidisciplinary response to AMR.
- Using a mixed-methods approach, global experts identified five key pillars as well as three cross-cutting themes, namely gender, vulnerable populations, and sustainability, as follows:



### Transmission

- This pillar focuses on the environment, plant, animal, and human sectors where AMR transmission, circulation and spread occur. This includes what drives this transmission across these areas, where these interactions occur, and the impact on different sectors.

### Integrated surveillance

- This pillar aims to identify cross-cutting priority research questions in order to improve common technical understanding and information exchange among One Health stakeholders. The surveillance aims for harmonisation, effectiveness, and implementation of integrated surveillance with a focus on LMICs.

### Interventions

- This pillar focuses on programmes, practises, tools, and activities aimed at preventing, containing, or reducing the incidence, prevalence, and spread of AMR. This also calls for the best use of existing vaccines, as well as other One Health-related measures to reduce AMR.

### Behavioural insights and change

- The priority research areas under this pillar are concerned with comprehending behaviour across various groups and actors involved in the development and spread of AMR at the One Health interface. It focuses on research addressing human behaviour that affects AMR, including ways to combat it.

### Economics and policy

- From a One Health standpoint, this pillar addressed investment and action in AMR prevention and control. This pillar also takes into account the cost-effectiveness of an AMR investment case, financial sustainability, and long-term financial impact.

## Time Dilation

### Why in News

- Ferocious black holes reveal 'time dilation' in early universe

### Important Points

- Scientists made that point anew in a study that used observations of a ferocious class of black holes called quasars to demonstrate "time dilation" in the early universe, showing how time then passed only about a fifth as quickly as it does today.
- The observations stretch back to about 12.3 billion years ago, when the universe was roughly a tenth its present age. Quasars – among the brightest objects in the universe – were used as a "clock" in the study to measure time in the deep past.
- Quasars are tremendously active supermassive black holes millions to billions of times more massive than our sun, usually residing at centers of galaxies.
- A supernova is the biggest explosion that humans have ever seen. Each blast is the extremely bright, super-powerful explosion of a star.
- They devour matter drawn to them by their immense gravitational pull and unleash torrents of radiation including jets of high-energy particles, while a glowing disk of matter spins around them.
- The researchers used observations involving the brightness of 190 quasars across the universe dating to about 1.5 billion years after the Big Bang event that gave rise to the cosmos.
- They compared the brightness of these quasars at various wavelengths to that of quasars existing today, finding that certain fluctuations that occur in a particular amount of time today did so five times more slowly in the most ancient quasars.
- Einstein, in his general theory of relativity, showed that time and space are intertwined and that the universe has been expanding outward in all directions since the Big Bang.



- The explosion of individual stars cannot be seen beyond a certain distance away, limiting their use in studying the early universe. Quasars are so bright that they can be observed back to the uni-verse's infant stages.

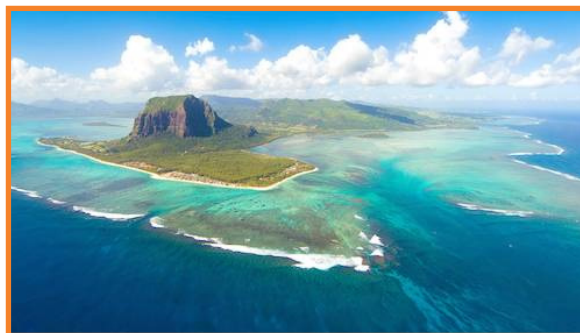
## Gravity Hole

### Why in News

- Indian Ocean's 'gravity hole' opens doors to secrets of Earth's origin

#### Important Points

- The Earth is often portrayed as a perfect sphere. However, the planet's shape is irregular. This uneven surface is caused by the planet's uneven gravity.
- These anomalies on Earth's undulating map are known as geoids. One such feature exists beneath the Indian Ocean, where the pull weakens to an extreme low, like a "gravity hole". The Indian Ocean geoid low (IOGL) spans about two million kilometres.
- The Indian Ocean harbors a colossal and enigmatic phenomenon known as the "Gravity Hole," which scientists now suspect may be the remnants of an ancient sea that vanished millions of years ago, according to a recent study.
- This groundbreaking research offers a possible explanation for the origins of the Earth's most re-markable gravity anomaly, an immense depression hidden beneath the ocean's surface.
- Known as the Indian Ocean geoid low (IOGL), this vast expanse spans over 2 million square miles and lies more than 600 miles beneath the Earth's crust.
- The study, published in Geophysical Research Letters, proposes that the IOGL comprises slabs from the Tethys Ocean, a long-lost sea that plunged into the depths of the planet millions of years ago.
- The Tethys Ocean, which once separated the supercontinents of Gondwana and Laurasia, is believed to have perturbed the African Large Low Shear Velocity province, also known as the "African blob," generating plumes beneath the Indian Ocean.
- Previous studies on the gravity anomaly focused solely on its present-day state, without delving into its origins. However, this new research utilized over a dozen computer models to provide in-sights into the ancient forces that shaped the IOGL.
- The Gravity Hole is estimated to have assumed its current form around 20 million years ago and is predicted to endure for millions more.
- Its intriguing nature has captivated scientists, shedding light on the geological history of the Indian Ocean and deepening our understanding of the complex forces at work beneath our planet's surface.
- As further research uncovers the secrets hidden within the depths, scientists hope to unravel more mysteries surrounding this awe-inspiring phenomenon.
- The "Gravity Hole" serves as a reminder that the Earth still holds many enigmas, waiting to be explored and understood.



## SARS-CoV-2

### Why in News

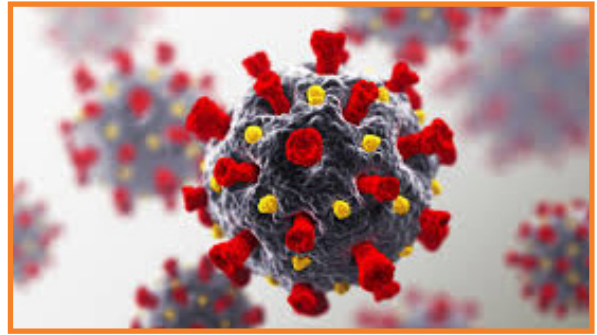
- Scientists develop novel mechanism to inactivate SARS-CoV-2 by blocking their entry to cells & reducing infection ability

#### Important Points

- Researchers have reported the design of a new class of synthetic peptides that can not only block the entry of SARS-CoV-2 virus entry into cells but also clump the virions (virus particles) together, reducing their ability to infect.
- This novel approach provides an alternative mechanism to render viruses like SARS-CoV-2 inactive, promising

a new class of peptides as antivirals.

- The rapid emergence of new strains of the SARS-CoV-2 virus has diminished the protection offered by COVID-19 vaccines calling for new approaches to prevent infection by the virus.
- It is known that protein-protein interaction is often like that of a lock and a key.
- This interaction can be hampered by synthetic peptide that mimics, competes with, and prevents the 'key' from binding to the 'lock', or vice versa. Scientists at the Indian Institute of Science (IISc), in collaboration with researchers from the CSIR-Institute of Microbial Technology, have exploited this approach to design peptides that can bind to and block the spike protein on the surface of SARS-CoV-2 virus.
- This binding was further characterised extensively by cryo-electron microscopy (cryo-EM) and other biophysical methods.
- The research was supported under the COVID-19 IRPHA call of SERB Science and Engineering Research Board (SERB), a statutory body of Department of Science and Technology (DST).
- The designed peptides are helical, hairpin-shaped, each capable of pairing up with another of its kind, forming what is known as a dimer.
- Each dimeric 'bundle' presents two 'faces' to interact with two target molecules. In the study published in Nature Chemical Biology, the researchers hypothesised that the two faces would bind to two separate target proteins locking all four in a complex and blocking the targets' action.
- The team decided to test their hypothesis by using a peptide called SIH-5 to target the interaction between the Spike (S) protein of SARS-CoV-2 and ACE2 protein, the SARS-CoV-2 receptor in human cells.
- The S protein is a trimer – a complex of three identical polypeptides. Each polypeptide contains a Receptor Binding Domain (RBD) that binds to the ACE2 receptor on the host cell surface. This interaction facilitates viral entry into the cell.
- The SIH-5 peptide was designed to block the binding of the RBD to human ACE2. When a SIH-5 dimer encountered an S protein, one of its faces bound tightly to one of the three RBDs on the S protein trimer, and the other face bound to an RBD from a different S protein.
- This 'cross-linking' allowed the SIH-5 to block both S proteins at the same time.
- Under cryo-EM, the S proteins targeted by SIH-5 appeared to be attached head-to-head, and the spike proteins were being forced to form dimers.
- Subsequently, the researchers showed that SIH-5 inactivated the viruses efficiently by cross-linking the spike proteins from different virus particles.



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August 2023

## BepiColombo

### Why in News

- Electron rains on Mercury cause X-ray auroras, finds BepiColombo during close flyby

#### Important Points

- BepiColombo, a joint mission by the European Space Agency (ESA) and the Japanese Aerospace Exploration Agency (JAXA) helped scientists discover that electrons raining down on the planet's surface can cause high-energy auroras.
- Auroras on Earth are triggered when a stream of charged particles emitted by the Sun interact with the ionosphere, the electrically charged upper layer of our planet's atmosphere.
- But Mercury has a very thin atmosphere and auroras on the planet are created when solar wind, the stream of particles, interact directly with the planet's surface.
- The BepiColombo spacecraft carried out its first close Mercury flyby on October 1, 2021.
- At the time, the spacecraft approached the planet from the night side of the northern hemisphere and made a close approach near the morning side of the southern hemisphere.





- It made observations of the magnetosphere on the daytime side of the southern hemisphere and then passed out of the magnetosphere back into the solar wind.
- The spacecraft's instruments observed the structure and boundaries of the planet's magnetosphere and its data showed that it was in an unusually compressed state. The most likely explanation is the high pressure exerted by solar wind.
- The "dawn side" of Mercury's magnetosphere seemed to be accelerating high-energy electrons, which in the end rained down on the planet's surface.
- Since there is no atmosphere to impede the electrons' progress, they interact with the material on the surface.
- This process emits an auroral glow in the form of X-rays.
- According to the Europlanet Society, this is the first time the process of X-ray auroras on the planet has been explained.

#### The BepiColombo spacecraft consists of two main components :

- Mercury Planetary Orbiter (MPO): The MPO is primarily provided by ESA and is responsible for mapping and studying Mercury's surface, as well as its composition and topography.
- Mercury Magnetospheric Orbiter (MMO): The MMO is provided by JAXA and focuses on studying Mercury's magnetic field and magnetosphere.

## Quantum Supercomputer

### Why in News

- Microsoft researchers have made significant strides in the creation of Majorana zero modes, a type of particle that could revolutionize quantum computing.

#### Important Points

- Majorana zero modes, which are their own antiparticles, possess unique properties that could make quantum computers more robust and computationally superior.

#### Background

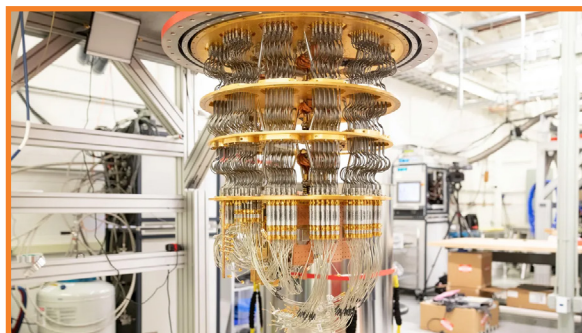
- All subatomic particles that constitute matter are known as fermions, with each fermion having an associated antiparticle that annihilates upon interaction.
- In 1937, Italian physicist Ettore Majorana discovered that certain particles, known as Majorana fermions, can satisfy specific conditions and be their own antiparticles.
- Neutrinos are one type of subatomic particle that scientists speculate may exhibit Majorana fermion behavior, although experimental confirmation is still pending.

#### Majorana Zero Modes

- All particles have four quantum numbers, with one called the quantum spin having half-integer values for fermions. This property allows any fermion, even a large entity like an atom, to be classified as a fermion.
- Bound states composed of two particles can also be classified as fermions if their total quantum spin possesses a half-integer value.
- When these bound states are their own antiparticles and do not readily de-cohere, they are known as Majorana zero modes, which have been sought after by physicists for many years.

#### Benefits for Computing

- Majorana zero modes offer increased stability for qubits, the fundamental units of information in quantum computing. Even if one entity within the bound state is disturbed, the qubit as a whole can remain protected and retain encoded information.
- Majorana zero modes can enable topological quantum computing, which takes advantage of non-Abelian statistics. These statistics introduce an additional degree of freedom, allowing algorithms to produce different outcomes based on the order in which steps are performed.



## Chandrayaan-3

### Why in News

- India's Mission To Explore The Unmapped South Pole Of The Moon

#### Important Points

- Chandrayaan-3 was successfully launched from the Satish Dhawan Space Center (SDSC) in Sri-harikota. It is a follow-up to the 2019 Chandrayaan-2 mission, which partially failed after its lander and rover couldn't execute a soft-landing on the Moon.
- The Chandrayaan-3 will reach the lunar orbit almost a month after its launch, and its lander, Vikram, and rover, Pragyaan, are likely to land on the Moon.
- Notably, the landing site of the latest mission is more or less the same as the Chandrayaan-2: near the south pole of the moon at 70 degrees latitude. If everything goes well, the Chandrayaan-3 will become the world's first mission to soft-land near the lunar south pole.



#### Why the Moon's south pole ?

- Most Moon missions usually land away from the poles, because it's a lot easier to land a spacecraft near the Moon's equator.
- The temperature and landscape in that region makes operation of technology easier.
- The south pole of the Moon is still largely unexplored - the surface area that remains in shadow there is much larger than that of the Moon's north pole, which means there is a possibility of water in areas that are permanently shadowed.
- The polar regions are tricky because many parts are in complete darkness at all times and there is never any sunlight, with temperature touching -230 degree Celsius.
- These conditions can make the operation of instruments difficult, along with the presence of large craters that are as huge as thousands of kilometres.
- ISRO scientists want to explore the polar regions of the Moon because ice molecules could be present in the deep craters in this region. This was also indicated by the Chandrayaan-1 mission.
- Also, since freezing temperatures keep everything trapped, the conditions on this region of the Moon could hold clues about the early solar system and the history of Earth.

#### Chandrayaan-1

- India's first mission to Moon, was launched successfully in 2008 from SDSC SHAR, Sriharikota.
- The spacecraft was orbiting around the Moon at a height of 100 km from the lunar surface for chemical, mineralogical and photo-geologic mapping of the Moon.
- The spacecraft carried 11 scientific instruments built in India, USA, UK, Germany, Sweden and Bulgaria.
- Country's first Moon mission in 2008, which carried out the first and most detailed search for water on the lunar surface and established the Moon has an atmosphere during daytime.
- Chandrayaan-1 was the first to discover water on the Moon in 2008, near the south pole.

#### Chandrayaan-2

- It also comprised an orbiter, a lander and a rover - was launched in July 2019 but it was only partially successful. Its orbiter continues to circle and study the Moon even today, but the lander-rover failed to make a soft landing and crashed during touchdown. It was because of "a last-minute glitch in the braking system".

## Aeolus Wind Satellite

### Why in News

- The European Space Agency's (ESA) Aeolus wind satellite, after exceeding its planned life in orbit, is making its way back to Earth.

### Important Points

- Aeolus Wind Satellite:
- Aeolus is a satellite mission launched by the European Space Agency (ESA) to study Earth's winds and their influence on the planet's climate and weather patterns.
- The mission is named after Aeolus, the ruler of the winds in Greek mythology.
- Aeolus was launched on August 22, 2018, from the Guiana Space Centre in French Guiana.
- It is a 1,360-kilogram satellite.



### Objectives

- The primary goal of the Aeolus mission is to measure global wind profiles from space.
- It aims to provide accurate and comprehensive data on wind patterns in the Earth's atmosphere to improve weather forecasting, understand climate dynamics, and enhance our knowledge of the Earth's atmospheric circulation.
- It is the first satellite mission to acquire profiles of Earth's wind on a global scale.

### Instrumentation

- Aeolus is equipped with a single instrument called the Atmospheric Laser Doppler Instrument (ALADIN).
- ALADIN is a Doppler wind lidar, which stands for Light Detection and Ranging, that will measure the winds sweeping around the planet.

## Carbon-based Perovskite solar cells (CPSCs)

### Why in News

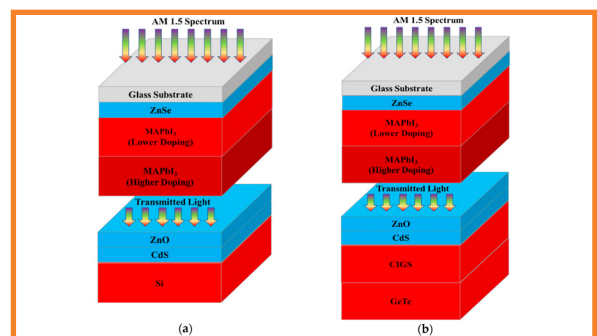
- Recently, Indian scientists have indigenously developed highly stable, low-cost Carbon-based perovskite solar cells with superior thermal and moisture stability.

### Important Points

- Recently, Indian scientists successfully developed low-cost Carbon-based perovskite solar cells (CPSCs) with exceptional thermal and moisture stability. This breakthrough can help address the challenges of degradation faced by perovskite photovoltaic cells during operation.

### Key Points

- Overcoming Degradation Challenges: Perovskite solar cells, considered third-generation solar cells, offer promising potential for increasing solar energy production. However, they are prone to degradation when exposed to environmental factors such as heat, moisture, and light during operation, hindering large-scale commercialization.
- Advancing the Green Energy Footprint: Perovskite solar cells hold promise as an emerging technology to increase solar energy production. By overcoming stability challenges, indigenous research and development in this field can significantly contribute to expanding India's green energy footprint.
- Paving the Way for Stability: The indigenously developed CPSCs demonstrate superior stability, reducing device stability issues and fabrication costs.



- This achievement is a significant step toward practical implementation and commercialization of perovskite-powered niche products in India.
- India's Role in Renewable Energy: With India playing a leading role in promoting renewable energy to reduce carbon emissions and protect the environment, perovskite solar cells offer a futuristic solution to enhance green energy production.
- Importance of Stable Solar Cells: The stability of solar cells is crucial for long-term performance and durability, especially in adverse environmental conditions. The newly developed CPSCs can withstand humidity and thermal stress, enhancing their potential for widespread adoption in the solar energy industry.

### What is Perovskite ?

- A perovskite is a material that has the same crystal structure as the mineral calcium titanium oxide also known as Perovskite.
- It was first found in the Ural Mountains and named after Lev Perovski who was the founder of the Russian Geographical Society.
- Because of their unique crystal make-up, perovskites often display a number of interesting properties, including superconductivity, giant magnetoresistance, and ferroelectricity.
- Generally, perovskite compounds have a chemical formula  $ABX_3$ , where 'A' and 'B' represent cations, and X is an anion that bonds to both.
- A large number of different elements can be combined together to form perovskite.
- Due to its compositional flexibility, scientists can design perovskite crystals to have a wide variety of physical, optical, and electrical characteristics from insulating, semiconducting, metallic, and superconducting characteristics.

### What are Perovskite Solar Cells(PSC) ?

- Perovskite Solar Cells(PSC) is a type of solar cell that includes a perovskite-structured compound, most commonly a hybrid organic-inorganic lead or tin halide-based material, as the light-harvesting active layer.
- Perovskite Solar Cells(PSC) offer a promising alternative to traditional silicon solar cells as they have higher efficiencies and very low production costs.

### Issues with Perovskite photovoltaic cells

- They face the problem of degradation during operation when they come in contact with heat, moisture, light, and other environmental factors.
- This long-duration stability is a major hindrance in the large-scale commercialisation of the product.

## Non-Fungible Tokens (NFTs)

### Why in News

- Google recently said it will allow developers to offer games on the Play Store where players can buy, sell and earn tokenized digital assets—like non fungible tokens.

### Important Points

- NFTs are unique cryptographic tokens that exist on a blockchain and cannot be replicated.
- They can represent digital or real-world items like artwork, photograph, song, video, real estate, individuals' identities, property rights, and more.
- Thus, NFTs are assets that have been tokenized via a blockchain. They are assigned unique identification codes and metadata that distinguish them from other tokens.
- The term 'non-fungible' simply means that each token is different as opposed to a fungible currency such as money (a ten-rupee note can be exchanged for another and so on).
- NFTs can be traded and exchanged for money, cryptocurrencies, or other NFTs—it all depends on the value the market and owners have placed on them.
- NFT transactions are recorded on blockchains, which is a digital public ledger, with most NFTs being a part of the Ethereum blockchain.



- NFTs became popular in 2021, when they were beginning to be seen by artists as a convenient way to monetise their work.

## What is Blockchain Technology ?

- A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain.
- Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger.
- Decentralized blockchains are immutable, which means that the data entered is irreversible.
- This means if one block in one chain was changed, it would be immediately apparent it had been tampered with.

## Bard Chatbot

### Why in News

- Google's parent company Alphabet is rolling out its artificial intelligence chatbot Bard in Europe and Brazil.

### Important Points

- Bard and ChatGPT, both generate human-like answers with ease using generative artificial intelligence. The chatbots are capable of holding conversations with users and can answer myriad prompts.
- The launch of ChatGPT last year proved to be a blockbuster with it being the first such product to be available to the masses.
- Google's parent company has announced the rollout of its chatbot rival to ChatGPT in the European Union and Brazil, as tech firms ramp up their competition to dominate artificial intelligence.
- Bard's expanded rollout comes hours after Elon Musk announced the launch of AI company xAI to challenge ChatGPT creator OpenAI, which the billionaire has accused of being biased in favour of "woke" politics.
- Google rival Microsoft, which announced a \$10bn investment in OpenAI, has been working to integrate AI functions across its products, including the search engine Bing.
- Meta, the owner of Facebook, is also working on a commercial version of its AI model LLaMA to compete with OpenAI and Google.



### Bard Chatbot :

- It is an Artificial Intelligence (AI) chatbot developed by Alphabet, parent company of Google.
- It is an example of generative AI that can respond to questions in a human-like way.

### Features

- Bard is now available in 27 EU countries and Brazil, as well as 40 new languages, including Arabic, Chinese, German, Hindi and Spanish.
- Users can change the tone and style of Bard's responses to either simple, long, short, professional or casual.
- They can pin or rename conversations, export code to more places and use images in prompts.
- Google include the ability for the chatbot to speak its answers back to you and for it to respond to prompts that also include images.

### Generative AI -

- Generative AI (GenAI) is a type of AI that can create a wide variety of data, such as images, videos, audio, text, and 3D models.
- It does this by learning patterns from existing data, then using this knowledge to generate new and unique outputs.
- GenAI is capable of producing highly realistic and complex content that mimics human creativity, making it a valuable tool for many industries such as gaming, entertainment, and product design.

## National Policy for Rare Diseases 2021

### Why in News

- Recently, the GST Council said the Integrated Goods and Services Tax (IGST) on medicines and Food for Special Medical Purposes (FSMP) used for treating rare diseases enlisted under the National Policy for Rare Diseases, 2021, will be exempt when imported for personal use.

### Important Points

- It aims to lower the high cost of treatment for rare diseases with increased focus on indigenous re-search.
- It offers financial support for one-time treatment of up to Rs. 20 lakhs, introduces a crowd funding mechanism, creates a registry of rare diseases and provides for early detection.

**The rare diseases have been identified and categorized into 3 groups namely :**

- Group 1: Disorders amenable to one-time curative treatment.
- Group-2: Diseases requiring long term/lifelong treatment having relatively lower cost of treatment and benefit has been documented in literature and annual or more frequent surveillance is required.
- Group 3: - Diseases for which definitive treatment is available but challenges are to make optimal patient selection for benefit, very high cost and lifelong therapy.
- In order to receive financial assistance for treatment of rare disease, the patient of the nearby area may approach the nearest Centre of Excellence to get him assessed and avail the benefits.
- Eight (08) Centres of Excellence (CoEs) have been identified for diagnosis, prevention and treatment of rare diseases.
- Centres of Excellence: The Centres of Excellence would be provided a one-time grant to a maximum of Rs. 5 crore each for infrastructure development for screening, tests, treatment.

### National Policy for Rare Diseases 2021 approved



Provides for financial support upto Rs 20L to individuals with certain rare diseases that require one-time treatment.

Assistance to be extended to not just BPL families, but to about 40% of the population who are covered under Pradhan Mantri Jan Arogya Yojana

The financial support will be provided under the umbrella scheme of Rastriya Arogya Nidhi & not PM-JAY

## Moderate Resolution Imaging Spectroradiometer

### Why in News

- Recently, scientists' have analyzed data generated from the Moderate Resolution Imaging Spectroradiometer and said that climate change has altered the colour of 56 per cent of the world's oceans.

### Important Points

- The waters in the tropics have turned green and the southern Indian Ocean, in particular, has seen a significant colour change.
- Changes in the ocean colour indicate alterations to the phytoplankton communities - since phyto-plankton are essential for most life in the ocean as the base of the marine food web.
- Human eyes are not sensitive enough to differentiate subtle colour changes.
- The oceans appear blue, but the true colour may contain a mix of subtler wavelengths, from blue to green and even red.
- The green hue comes from chlorophyll, a pigment that helps phytoplankton make food.
- A change in colour due to an increase or decline in the population will impact organisms that feed on plankton.
- Though the southern Indian Ocean is seeing a significant change, the waters near India are not following the same trend.



### What is Moderate Resolution Imaging Spectroradiometer (MODIS) ?

- It is a key instrument aboard the Terra (originally known as EOS AM-1) and Aqua (originally known as EOS

PM-1) and Aqua (originally known as EOS PM-1) satellites.

- Terra's orbit around the Earth is timed so that it passes from north to south across the equator in the morning, while Aqua passes south to north over the equator in the afternoon.
- Terra MODIS and Aqua MODIS are viewing the entire Earth's surface every 1 to 2 days, acquiring data in 36 spectral bands, or groups of wavelengths.
- These data will improve our understanding of global dynamics and processes occurring on the land, in the oceans, and in the lower atmosphere.
- Significance: It is playing a vital role in the development of validated, global, interactive Earth system models able to predict global change accurately enough to assist policy makers in making sound decisions concerning the protection of our environment.

## Long March 10 Rocket

### Why in News

- China recently carried out a trial test on the main engine of the Long March-10, a new carrier rocket designed for manned moon landing missions.

### Important Points

- China's rocket scientists and engineers carried out a major test on a new type of engine, which will be the most important component in the nation's attempt to land its astronauts on the moon.
- The multiple-ignition test took place at an engine testing facility in Fengxian county in Shaanxi province and successfully verified the engine's operating procedures.
- It is China's new carrier rocket designed for manned moon landing missions.
- The rocket will be capable of ferrying a crew module along with a lunar lander to Earth-Moon transfer orbit.



### Features

- It has a modular design, consisting of a service capsule, a return capsule and an escape tower, making it like a miniature space station on its own.
- The command module and living quarters form one half, while the energy and the power modules form the other half.
- The flexible approach allows for components to be reused.
- The crew capsule has been designed for operations in orbit around the Moon, as well as the Earth. The crew module has a capacity of between four and seven humans.
- The vehicle will use liquid hydrogen, liquid oxygen and kerosene as propellants.
- It will have a length of 92 meters, and will be able to deliver a minimum of 27 tonnes to the Earth-Moon transfer orbit.
- There is also a configuration of the vehicle without a booster that can ferry Taikonauts (Chinese word for astronaut) to the Tiangong space station.

### About Tiangong space station

- Tiangong (Chinese for "Heavenly Palace") is a modular space station being constructed by the China National Space Administration (CNSA).
- It is the first space station built by China.
- Tiangong is currently in low Earth orbit (LEO), and it is expected to be operational until 2028.
- It is a three-module space station. The core module Tianhe launched in April 2021, followed by the Wentian and Mengtian experiment modules in 2022.
- The station is about the size of the International Space Station (ISS), and it can accommodate up to three astronauts.
- China is only the third country to have put both astronauts into space and to build a space station, after the Soviet Union (now Russia) and the US.

## Chapter

## 6

# Social Issues

## Data Act

### Why in News

- EU reaches agreement on Data Act - new rules for industrial data use forthcoming

### Important Points

- The European Commission is progressing closer towards its proposed EU Data Act, after the Euro-pean Parliament and the Council of the EU reached political agreement this week on new rules for the use of industrial data across the trading bloc.
- The rules were proposed by the Commission in February 2022 and are now subject to formal ap-approval by the two co-legislators.



### The European Commission (EC) outlines that the Data Act includes

- Measures that enable users of connected devices to access the data generated by these devices and by services related to these devices - the EC says that users will be able to share such data with third parties with the hope that this will boost aftermarket services and innovation.
- Measures to provide protection from unfair contractual terms that are unilaterally imposed - the EC aims to safeguard EU companies from unjust agreements, fostering fair negotiations and enabling SMEs to participate more confidently in the digital marketplace.
- Mechanisms for public sector bodies to access and use data held by the private sector - public sector organizations will be able to access and use data in cases of public emergencies such as floods and wildfires, or when implementing a legal mandate where the required data is not readily available through other means
- New rules that grant customers the freedom to switch between various cloud data-processing service providers - the EC says that these rules aim to promote competition and choice in the market while preventing vendor lock-in. Additionally, the Data Act includes safeguards against unlaw-ful data transfers, with the aim of ensuring a more reliable and secure data-processing environ-ment.
- Measures to promote the development of interoperability standards - the aim being to encourage more data-sharing and data processing, in line with the EU Standardization Strategy.

#### Fines -

- The EC will also introduce penalties for breaches of the proposed EU Data Act, where the supervi-sory data protection authorities in each member state can impose fines.
- The fines will fall in line with GDPR penalties, which are up to €20 million or 4% of global annual turnover (whichever is greater).

#### Significance of the Act -

- Ensuring protection of trade secrets and intellectual property rights.
- Ensure fairness in allocation of value from data and stimulate a competitive data market
- Open opportunities for data-driven innovation and make data more accessible to all.



## Data Scraping

### Why in News

- Twitter announced temporary reading limits to combat data scraping.

### Important Points

- The number of tweets that each user can see in a day will now be restricted, termed “rate limits”.
- These restrictions could result in users being locked out of Twitter for the day once they have ex-hausted their daily limit.
- If the amount refers to the tweets one user scrolls past, such limits could get exceeded quickly for ac-tive users.



### What does data scraping mean ?

- Musk has blamed data scraping, a practice through which large amounts of data are taken from websites, such as platforms like Facebook, Twitter and Instagram.
- Websites can be ‘scraped’ by organisations to retrieve data that can help them keep track of competitors, better understand a specific audience, follow market trends and compare prices, according to a 2023 Bloomberg report.
- However, scraping can pose a privacy risk when it targets personal information such as contact de-tails and runs afoul of EU law if companies don’t make an effort to prevent that through tech-nical and legal means. In November 2022, Meta was fined €265 million (\$277 million) by the EU for failing to protect user data from being scraped by third parties.

### Did rates exist on Twitter earlier ?

- Yes, but only for functions like the number of tweets one could post per day, the number of accounts one could follow in a day and the number of direct messages one could send out to others per day. This was because “limits alleviate some of the strain on the behind-the-scenes part of Twitter and reduce downtime and error pages,” according to the website, basically to not overwhelm the website with too much data.
- But no such limit was set on the number of tweets one viewed and until December 2022 views could not be seen for tweets. Only retweets, likes on tweets and quote tweets were visible.

### Who can access tweets beyond the limits now ?

- This is available to verified Twitter users, those who are paying the \$8 per month subscription ser-vice that was introduced after Musk’s takeover in October 2022 in order to boost revenue.
- While Twitter Blue, the paid subscription service, first came about in 2021, Musk has rolled it out with new features at a breakneck speed. Unlike earlier, now the service also provides a user with a verified badge, the blue tick.
- But the changes have often been introduced with little warning and often been reversed as quickly, leading to confusion. It is also questionable whether these attempts have improved the revenue options for the company.

## Performance Grading Index (PGI)

### Why in News

- Recently, the Union Ministry of Education released report on Performance Grading Index 2.0 for States/UTs for the year 2021-22.

### Important Points

- Recently, the Ministry of Education (MoE), Government of India has released the Performance Grading Index for Districts (PGI-D) combined report for 2020-21 & 2021-22, assessing the per-formance of the school education system at the District level.
- The MoE has also released a report on Performance Grading Index (PGI) 2.0 for States/UTs for the year 2021-22.



- PGI 2.0 aims to propel States & UTs towards undertaking multi-pronged interventions to achieve optimal education outcomes in terms of improving quality and also to motivate States and UTs to adopt best practices followed by the top performing States/UTs which can be replicated wherever possible in shortest possible time.
- To give emphasis to teacher education in school education, a separate category and domain on Teacher Education & Training (TET) is now added in PGI 2.0



### About Performance Grading Index

- The Performance Grading Index is prepared by the Department of School Education & Literacy, Ministry of Education. It was first released for the year 2017-18.
- It assesses the performance of the school education system at the State/UT level by creating an index.
- The PGI 2.0 structure comprises total weightage of 1000 points across 73 indicators, which are grouped under 2 Categories viz., Outcomes and Governance & Management.
- These categories are further divided into 6 domains, viz., Learning Outcomes (LO), Access (A), In-frastructure & Facilities (IF), Equity (E), Governance Processes (GP) and Teacher Education & Training (TET).
- Scores obtained by States/UTs have been classified into 10 grades with the highest achievable Grade is Daksh, which is for State/UT scoring more than 940 points out of a total of 1000 points.
- The lowest grade is Akanshi-3 which is for a score up to 460.

### Grades attained by States/UTs – 2021-22

#### Inter-state disparity :

- The maximum and minimum scores obtained by the States/UTs in 2021-22 are 659.01 and 420.64 respectively.
- The deviation between the maximum and minimum scores obtained by States/UTs is 238.37 or 23.8% of the maximum points, indicating that, States Arunachal Pradesh, Meghalaya and Mizoram has to put more effort to reach the top slot.
- This disparity was 51 % in 2017-18 indicating that, PGI also helped to bridge the performance gap amongst States/UTs over the years which may be due to efforts of the Government such as look East policy.
- The reduction in InterState differential is also due to close monitoring of schemes through evidence based PGI which might have helped both the performing and aspiring States and UTs to improve their performance.

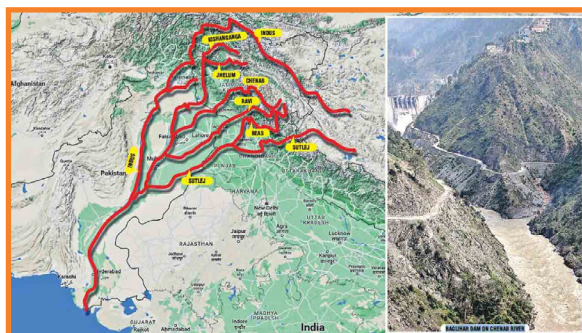
## Indus Waters Treaty

### Why in News

- India raised objection when Pakistan initiated arbitration at the Permanent Court of Arbitration to address the interpretation and application of the IWT.

### Important Points

- India announced that it wants to modify the 62-year-old Indus Waters Treaty (IWT) with Pakistan, citing what it called Pakistan's "intransigence" in resolving disputes over the Kishenganga and Ratle hydropower projects, both in Jammu and Kashmir.
- Pakistan initiates arbitration at the Hague-based Permanent Court of Arbitration regarding the interpretation and application of the Indus Waters Treaty (IWT) to certain design elements of two hydroelectric projects – Kishanganga and Ratle.



### Indus Water Treaty (IWT)

- The Indus Waters Treaty is a water-distribution treaty between India and Pakistan, brokered by the World Bank signed in Karachi in 1960.

- According to this agreement, control over the water flowing in three eastern rivers of India the Beas, the Ravi and the Sutlej was given to India.
- The control over the water flowing in three western rivers of India the Indus, the Chenab and the Jhelum was given to Pakistan.

### India's objection to Pakistan's intransigence

- The Indian government has issued a notice to Pakistan, calling for negotiations to amend the Indus Waters Treaty.
- Disputed Hydropower Projects: Kishanganga and Ratle: The notice is in response to Pakistan's objections to two Indian hydropower projects in Jammu and Kashmir: the 330MW Kishanganga hydroelectric project and the 850MW Ratle hydroelectric project.
- India has argued since 2006 that these projects comply with the treaty's provisions, but Pakistan has refused to conclude negotiations with India in the bilateral mechanism — the Permanent Indus Commission of experts that meets regularly.
- World Bank Intervention: The World Bank appointed a neutral expert, but Pakistan insisted on the case being heard at The Hague, leading to disagreements with India.
- India's Boycott: India attended hearings with the neutral expert but decided to boycott the Court of Arbitration at The Hague, claiming that talks have hit a dead-end.
- The Court of Arbitration unanimously passes a binding decision, rejecting each of India's objections.
- The court determines that it has the competence to consider and determine the disputes presented in Pakistan's request for arbitration

## Heavy Rainfall

### Why in News

- Heavy rainfall in India due to western disturbance, monsoon surge interaction

### Important Point

- The India Meteorological Department (IMD) explained the reason behind the extremely heavy rain-fall that has wreaked havoc in the northwestern states including Himachal, Uttarakhand, Pun-jab, and Haryana.
- IMD said that the extremely heavy rainfall over the region was due to the confluence of monsoon winds and the western disturbance.



### What are Western Disturbances ?

- A Western Disturbance is a low-pressure system that originates in the Mediterranean Sea and moves eastward across Central Asia. As it travels across the region, it brings changes in weather patterns, particularly in Northern India, Pakistan, and Nepal.
- The WD is known for moisture usually being carried in the upper atmosphere, contrary to its tropical counterparts where the moisture is carried in the lower atmosphere. WDs are frequent, and their spells can be long or short.

### How are Western Disturbances different from the monsoon ?

- In India, it is confirmed that the monsoon arrives in July and lasts till September. However, WDs have no fixed time of arrival. Also, while the monsoon period is around three months, WDs can last for very short spells.

### How is a Western Disturbance forecast ?

- According to the weather department, the prediction of an upcoming Western Disturbance can only be made around six days before its arrival. To keep tabs on it, the weather departments concerned monitor the activities over the Mediterranean region every half an hour.
- Most winter and pre-monsoon season rainfall in North-West India is due to Western Disturbances.
- During this time, pre-monsoon rain is caused by instability in the atmosphere following heating of the surface. This year, long spells of rain or thundershowers are also rare because the pre-monsoon activity is normally brief and intermittent in north India.

## Multidimensional Poverty Index 2023

### Why in News

- Recently, the Global Multidimensional Poverty Index (MPI) 2023 has been released by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).

### Important Points

- The latest update of the global Multidimensional Poverty Index (MPI) highlights India's extraordinary achievement in poverty reduction.

#### Global Scenario :

- Globally, 1.1 billion people (18% of the total population) out of 6.1 billion people, are acutely multi-dimensionally poor and live in acute multidimensional poverty across 110 countries.
- Sub-Saharan Africa has 534 million poor and South Asia has 389 million.
- These two regions are home to approximately five out of every six poor people.
- Children under 18 years old account for half of MPI-poor people (566 million).
- The poverty rate among children is 27.7%, while among adults it is 13.4 %.

#### India's Performance :

- The country has lifted a staggering 415 million people out of poverty within a span of 15 years, demonstrating significant progress in improving living conditions.
- Poverty in India: India still has more than 230 million people who are poor.
- The UNDP defines, "Vulnerability — the share of people who are not poor but have deprivations in 20 - 33.3% of all weighted indicators — can be much higher.
- India has some 18.7% population under this category.
- India is among 25 countries, including Cambodia, China, Congo, Honduras, Indonesia, Morocco, Serbia, and Vietnam, that successfully halved their global MPI values within 15 years.
- Some 415 million Indians escaped poverty between 2005-06 and 2019-21.
- The incidence of poverty in India declined significantly, from 55.1% in 2005/2006 to 16.4% in 2019/2021.
- In 2005/2006, approximately 645 million people in India experienced multidimensional poverty, a number that decreased to about 370 million in 2015/2016 and further to 230 million in 2019/2021.

#### Improvement in Deprivation Indicators :

- India has shown significant progress in all three deprivation indicators: health, education, and standard of living.
- The percentage of people deprived of nutrition decreased from 44.3% in 2005/2006 to 11.8% in 2019/2021, and child mortality fell from 4.5% to 1.5%.

#### Recommendations :

- There is a need for context-specific multidimensional poverty indices that reflect national definitions of poverty.
- While the global MPI provides a standardized methodology, national definitions offer a comprehensive understanding of poverty specific to each country.
- It is crucial to consider these context-specific indices to evaluate and address poverty effectively.

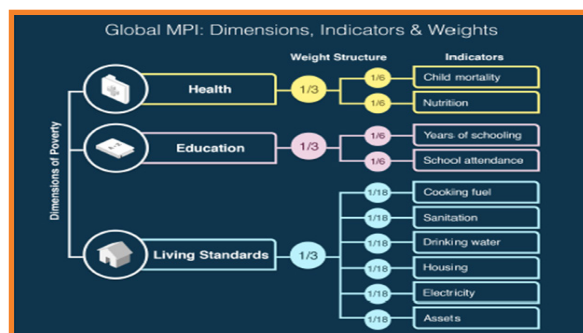
- MPI Indicators and Dimensions :** The MPI incorporates a diverse range of indicators and dimensions to comprehensively assess poverty. While the specific indicators may vary across countries, the following are commonly included:

#### 1. Health Indicators:

- Nutrition and food security
- Child mortality
- Access to healthcare

#### 2. Education Indicators:

- School attendance
- Years of schooling completed



**3. Standard of Living Indicators:**

- Access to clean water and sanitation
- Electricity and cooking fuel availability
- Housing quality
- Assets ownership

**Fibromyalgia****Why in News**

- Fibromyalgia may be associated with an elevated risk of mortality owing to sensitivity to accidents, infections, and, in particular, suicide, according to a pooled data analysis.

**Important Points**

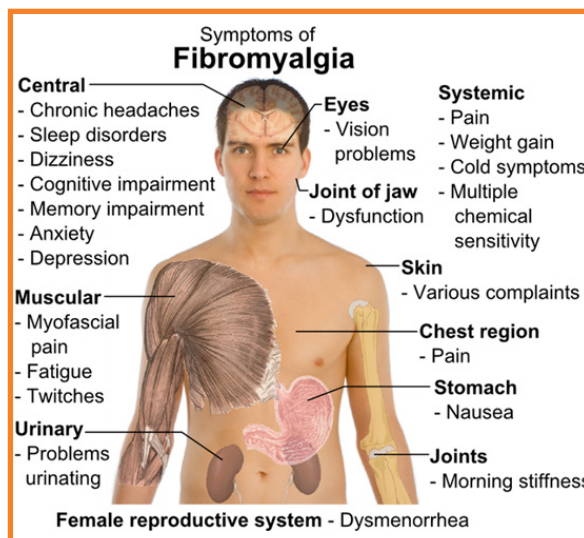
- Fibromyalgia, a disorder that produces persistent, widespread pain and exhaustion, may be associated with an elevated risk of mortality owing to sensitivity to accidents, infections, and, in particular, suicide, according to a pooled data analysis of the current evidence.
- It is a long-term (chronic) health condition that causes pain and tenderness throughout your body.
- It causes musculoskeletal pain and fatigue.
- In order to reduce these risks, the researchers recommend routine evaluation of patients' physical and mental health.
- It's not clear what causes fibromyalgia, but its prevalence is increasing, say the researchers.
- And there's growing recognition that the condition often coexists with other health problems, including rheumatic, gut, neurological, and mental health disorders.
- Given the extent of the pain they experience and the likelihood of other painful and debilitating conditions in these patients, it is thought that they are probably at heightened risk of dying before their time.
- To strengthen this hypothesis, the researchers reviewed the findings of 8 relevant studies, published between 1999 and 2020, out of an initial haul of 33. They pooled the results from 6 of them, involving a total of 188,751 adults, all of whom had other coexisting conditions.
- The analysis showed that fibromyalgia was associated with a 27 per cent heightened risk of death from all causes over time, although this wasn't true for those diagnosed by the 1990 criteria.

**Symptoms: The two most common symptoms of fibromyalgia are pain and fatigue. Other symptoms include,**

- Muscle pain or tenderness.
- Fatigue.
- Face and jaw pain (temporomandibular joint disorders).
- Headaches and migraines.
- Digestive problems, including diarrhoea and constipation.
- Bladder control issues.

**Treatment :**

- While there is no cure for fibromyalgia, a variety of medications can help control symptoms.
- Treatment typically involves a combination of exercise or other movement therapies, psychological and behavioural therapy, and medications.



## National Multidimensional Poverty Index 2023

### Why in News

- National Multidimensional Poverty Index: A Progress Review, 2023, released by NITI Aayog recently.

### Important Points

- India has registered a remarkable decline of 9.89 percentage points in the number of multidimensionally poor.
- This decline took place between 2015-16 and 2019-2021, bringing down the figure from 24.85% to 14.96%.
- The report highlights the efforts made to identify and address acute deprivations in health, education, and standard of living using United Nations-approved parameters.
- Based on the latest National Family Health Survey [NFHS-5 (2019-21)], this second edition of the National Multidimensional Poverty Index (MPI) represents India's progress in reducing multidimensional poverty between the two surveys, NFHS-4 (2015-16) and NFHS-5 (2019-21).
- It builds on the Baseline Report of India's National MPI launched in November 2021. The broad methodology followed is in consonance with the global methodology.
- Between 2015-16 and 2019-21, the MPI value has nearly halved from 0.117 to 0.066 and the intensity of poverty has reduced from 47% to 44%, thereby setting India on the path of achieving the SDG Target 1.2 (of reducing multidimensional poverty by at least half) much ahead of the stipulated timeline of 2030.
- It demonstrates the Government's strategic focus on ensuring sustainable and equitable development and eradicating poverty by 2030, thereby adhering to its commitment towards the SDGs.



### Decline in Multidimensional Poverty

- The study reveals that approximately 13.5 crore individuals have emerged from multidimensional poverty during the assessment period.
- The report emphasizes the use of internationally recognized parameters to identify acute deprivations in health, education, and standard of living.
- This approach allows for a comprehensive understanding of poverty that extends beyond income-based measures.
- By focusing on various dimensions, such as access to healthcare, quality education, and basic living standards, the report provides a nuanced perspective on poverty eradication.

### Regional Disparities

- The report highlights the varying rates of progress in different regions of India.
- Rural areas experienced the fastest decline in poverty, with the percentage falling from 59% to 19.28%.
- This positive trend can be attributed to the reduction in the number of multidimensionally poor individuals in states like Bihar, Uttar Pradesh, Madhya Pradesh, Odisha, and Rajasthan. On the other hand, Delhi, Kerala, Goa, and Tamil Nadu, along with the Union Territories, demonstrated the lowest rates of multidimensional poverty.
- Bihar, Jharkhand, Meghalaya, Uttar Pradesh, and Madhya Pradesh were identified as the states with the highest percentages of multidimensional poverty.

### Urban Progress

- The report also reveals encouraging developments in urban areas. Multidimensional poverty in urban regions decreased from 8.65% to 5.27% during the same assessment period.
- Uttar Pradesh emerged as a frontrunner in poverty reduction, with 3.43 crore individuals escaping multidimensional poverty. These findings indicate that efforts to address poverty have been effective across rural as well as urban areas, resulting in tangible improvements in the quality of life for many people.

### Initiatives

- The Government's dedicated focus on improving access to sanitation, nutrition, cooking fuel, financial inclusion,

drinking water, and electricity has led to significant advancements in these areas.

- All 12 parameters of the MPI have shown marked improvements. Flagship programmes like the Poshan Abhiyan and Anaemia Mukh Bharat have contributed to reduced deprivations in health. Initiatives such as Swachh Bharat Mission (SBM) and Jal Jeevan Mission (JJM) have improved sanitation across the country.
- The impact of these efforts is evident in the swift 21.8 percentage points improvement in sanitation deprivations.
- The provision of subsidized cooking fuel through the Pradhan Mantri Ujjwala Yojana (PMUY) has positively transformed lives, with a 14.6 percentage points improvement in cooking fuel deprivations.
- Initiatives like Saubhagya, Pradhan Mantri Awas Yojana (PMAY), Pradhan Mantri Jan Dhan Yojana (PMJDY), and Samagra Shiksha have also played a major role in significantly reducing multi-dimensional poverty in the country.
- The remarkable progress achieved through extremely low deprivation rates especially for electricity, access to bank accounts and drinking water, reflects the Government's unwavering commitment to improving citizens' lives and creating a brighter future for all.
- Consistent implementation across a diverse set of programmes and initiatives that have strong inter-linkages has led to significant reduction in deprivations across multiple indicators.

## Conjunctivitis

### Why in News

- Amid heavy rainfall in Delhi and nearby areas over the past few weeks, multiple cases of conjunctivitis are being reported in the National Capital Region.

### Important Points

- Conjunctivitis, commonly known as Pink Eye, is an infection or inflammation of the transparent membrane that covers the eyelid and eyeball. This membrane is called the conjunctiva.

#### Why do eyes appear Pink ?

- When small blood vessels in the conjunctiva become swollen and irritated, they're more visible.
- This is what causes the whites of the eyes to appear reddish or pink.

#### Causative Agent :

- It can be caused by viruses, bacteria or by allergies.
- Both bacterial and viral conjunctivitis are highly contagious, while allergic conjunctivitis is not.

#### Transmission :

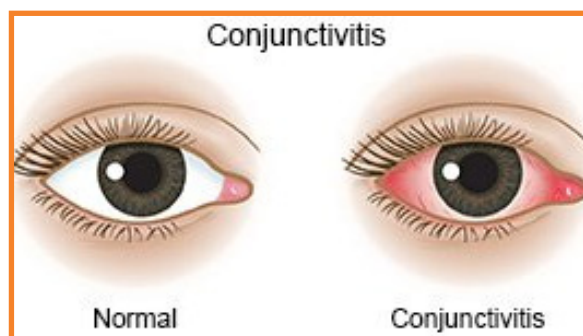
- It usually occurs through direct or indirect contact.
- Direct transmission happens through droplets from the cough or sneeze of an infected person or through hand-to-eye contact.
- Indirectly, it can spread via shared personal items like towels, makeup, pillows or contact lenses.

#### Signs and symptoms :

- Most common signs are redness, swelling and itching in the eyes.
- The eyes can also feel watery during the start of the flu.

#### Treatment :

- For the treatment of conjunctivitis, one needs to use a combination of medicines.
- One of the most useful treatments is using artificial tears or even any lubricating eye drops; these can help the infected person to maintain moisture.
- A warm or cold compress will also help in giving relief from inflammation and swelling



## Chapter 7

# International Relation

## 23rd Shanghai Cooperation Organisation (SCO) Summit

### Why in News

- Recently, India has chaired the Shanghai Cooperation Organization (SCO) virtual Summit, leaders called for the formation of a “more representative” and multipolar world order in the global interest.

### Important Points

- During the 23rd Summit, Iran officially joined the SCO as the Ninth Member Country.
- The theme of India's chairpersonship of SCO is 'Towards a SECURE SCO', which is derived from the acronym coined by the Indian PM at the 2018 SCO Qingdao Summit.
- It stands for: S: Security, E: Economic development, C: Connectivity, U: Unity, R: Respect for sovereignty and territorial integrity, E: Environmental protection.
- India, who hosted the summit for the first time, refused to join other members on paragraphs relating to China's Belt and Road Initiative (BRI) in the joint statement, and stayed out of a joint state-ment on SCO Economic Development Strategy 2030, indicating a lack of consensus in the grouping.
- India also took sharp aim at Pakistan for cross-border terrorism, and at China for connectivity pro-jects that do not respect sovereign boundaries.
- The SCO grouping now comprises China, India, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Ta-jikistan and Uzbekistan.



### New Delhi Declaration

- The agreements signed include the New Delhi Declaration, outlining areas of cooperation between SCO countries; a joint statement on countering radicalisation; and one on digital transformation, where India offered to share expertise on digital payment interfaces such as UPI.
- In a reference to sanctions on Russia and Iran by the U.S. and European countries, SCO members jointly criticised non-UN sanctions as “incompatible with the principles of international law”, which have a “negative impact” on other countries. SCO members also agreed to explore the use of “national currencies” for payments within the grouping, which would circumvent inter-national dollar-based payments.
- However, the declaration noted that only “interested member states” signed the economic strategy statement, while leaving India out of the paragraphs supporting China's BRI.
- India opposes the BRI over its inclusion of projects in Pakistan-occupied Kashmir.

### New world order

- The Delhi Declaration listed a number of global challenges, including new and emerging conflicts, turbulence in the markets, supply chain instability, climate change and the COVID-19 pandemic.
- SCO member States confirm their commitment to formation of a more representative, democratic, just and multipolar world order based on the universally recognized principles of international law, multilateralism, equal, joint, indivisible, comprehensive and sustainable security, cultural and civilizational diversity, mutually beneficial and equal cooperation of states with a central co-ordinating role of the UN.

### About SCO

- SCO is a permanent intergovernmental international organization.
- It's a political, economic and military organization aiming to maintain peace, security and stability in the region.



- It was created in 2001.
- The SCO Charter was signed in 2002 and entered into force in 2003.

### Objectives

- Strengthening mutual trust and neighborliness among the member states.
- Promoting effective cooperation in -politics, trade & economy, research & technology and culture.
- Enhancing ties in education, energy, transport, tourism, environmental protection, etc.
- Maintain and ensure peace, security and stability in the region.
- Establishment of a democratic, fair and rational new international political & economic order.

### SCO Secretariat

- Based in Beijing to provide informational, analytical & organizational support

## IAEA

### Why in News

- IAEA endorses Japan plan to release treated Fukushima water

### Important Points

- Japan's plan to release treated water from the Fukushima nuclear plant into the sea meets international standards and will have a "negligible radiological impact", the U.N. nuclear watchdog.
- The assessment, delivered in a final review by the International Atomic Energy Agency, comes as its chief visits Japan before the expected water release begins this summer.
- Tokyo's plan to dilute the treated water and release it into the sea over several decades is consistent with relevant international safety standards.
- Several of the Fukushima Daiichi plant's reactors went into meltdown after cooling systems were overwhelmed by a massive 2011 tsunami.
- The resulting nuclear accident was the worst since Chernobyl, and the clean-up has lasted more than a decade, with most areas declared off-limits due to radiation now reopened.
- Decommissioning the plant itself will take decades more, but the facility's operator TEPCO faces the immediate problem of more than 1.33 million cubic metres of water accumulated on the site.
- The water is a mixture of groundwater, rain that seeps into the area, and water used for cooling.
- It is processed through a facility that TEPCO says removes almost all radionuclides but tritium, which commonly remains in wastewater discharged into the sea by nuclear plants globally.
- The proposal had already been provisionally endorsed by the IAEA but the government said the re-lease would only begin after the "comprehensive review".
- A review by IAEA, given how authoritative it is in the management and application of nuclear safety standards, is critical to our efforts to foster international understanding.
- Still, the release remains controversial, with China vocally criticising the plans, and some in South Korea panicking over fears of contamination after the discharge begins.
- Fishing communities in Fukushima are also worried customers will shun their catches, despite strict testing protocols for food from the region.



## Black Sea Grain

### Why in News

- As grain deal nears deadline, U.S. appeals to India to use 'unique voice' with Russia

## Important Points

- With the clock ticking on the Black Sea Grain Initiative deal's extension, the U.S. envoy to Ukraine appealed to India on to use its influence with Russia to ensure that grain exported from Ukraine isn't blocked.
- The initiative, which was mediated by Turkey last year, after Ukrainian and Russian ships were stopped from carrying wheat exports out of the Black Sea due to the war, is set to expire on July 17 2023.
- According to the U.N. Food and Agriculture Organisation, prior to the war, Russia and Ukraine together ranked among the top global exporters of wheat, barley, maize and vegetable oils.
- Last year, Turkey brokered a deal facilitated by the United Nations Secretary-General that agreed to allow both countries to continue to export the grains.
- However, Russia has consistently complained that its ship exports are still being blocked, and the Russia warned that it has "no grounds" for a further extension after it agreed to one extension for two months in May 2023.
- Since the Russian invasion in February 2022, India has refused to criticise Russia's actions in U.N. votes, and has, in a break from U.S. and EU sanctions, increased its intake of Russian oil five-fold.
- India is among 50 countries providing humanitarian aid to Ukraine, and Indian PM met Ukrainian President on the sidelines of the G-7 plus summit in Japan, but has not so far acceded to the Ukrainian President's request to be allowed to address the G-20 summit in Delhi.
- In the India-U.S. joint statement issued in Washington, the Ukraine conflict is mentioned, but there is no reference to Russia, believed to be at New Delhi's insistence.



## Black Sea Grain Initiative

- The Black Sea Grain initiative endeavours to tackle escalating food prices emanating from supply chain disruptions because of Russian actions in the world's 'breadbasket'.
- The deal brokered by the United Nations (UN) and Turkey, was signed in Istanbul in July, 2022.

## Objective

- Initially stipulated for a period of 120 days, the deal was to provide for a safe maritime humanitarian corridor for Ukrainian exports (particularly for food grains).
- The central idea was to calm markets by ensuring an adequate supply of grains, thereby limiting food price inflation.

## Role of Joint Coordination Centre (JCC)

- The deal put in place a Joint Coordination Centre (JCC), comprising senior representatives from Russia, Turkey, Ukraine and the UN for oversight and coordination.
- All commercial ships are required to register directly with the JCC to ensure appropriate monitoring, inspection and safe passage. Inbound and outbound ships (to the designated corridor) transit as per a schedule accorded by the JCC post-inspection.
- This is done so as to ensure there is no unauthorised cargo or personnel onboard.
- Following this, they are allowed to sail onwards to Ukrainian ports for loading through the designated corridor.

## Taiwan and India

### Why in News

- Taiwan to Establish Representative Office in Mumbai, Boosting India-Taiwan Ties

## Important Points

- Taiwan has announced its decision to open its third representative office in India, this time in Mumbai. The move comes after more than a decade since Taiwan last expanded its presence in the country.
- The establishment of the Taiwan Economic and Cultural Center (TECC) in Mumbai aims to facilitate trade,



investment, and provide various services to Taiwanese nationals and Indian businesspeople and tourists.

- This development signifies a significant step toward enhancing economic linkages and strengthening relations between India and Taiwan.
- Taiwan's decision to set up the TECC in Mumbai came at a time when leading Taiwanese companies are increasingly looking at relocating their production bases from China to India, the US and countries in Europe amid Taipei's increasingly tense relations with Beijing.
- Ever since its establishment in 2012, the TECC in Chennai has witnessed a significant preference from nearly 60% of Taiwanese businesses investing in and opening factories in India.
- India, having attained the status of the world's fifth-largest economy in 2022 and becoming the most populous nation this year, has emerged as a prominent investment destination for global enterprises.
- With its vast market and associated business prospects, India offers lucrative opportunities.
- Mumbai, being India's largest city and a financial hub with a major port, has attracted consulates from various countries, including the United States, Japan, the United Kingdom, and Australia.



### Significance of TECC

- As per the Taiwan, TECC in Mumbai aims to foster expanded trade and investment opportunities between the two countries, benefiting both parties.
- It will also actively promote exchanges and cooperation in fields such as science and technology, education, culture, and people-to-people connections, aligning with Taiwan's New Southbound Policy.
- Additionally, the TECC in Mumbai will provide visa services, document authentication, and emergency assistance to Taiwanese nationals, businesspeople, and tourists in the states of Maharashtra, Goa, Gujarat, and Madhya Pradesh, as well as the union territory of Dadra and Nagar Haveli and Daman and Diu.

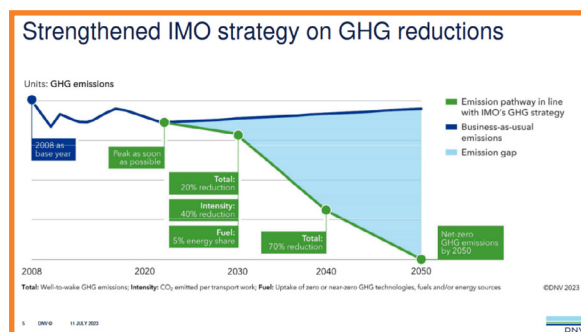
## IMO Greenhouse Gas Strategy

### Why in News

- International maritime organization (IMO) adopts revised strategy to reduce greenhouse gas emissions from international shipping.

### Important Points

- During Marine Environment Protection Committee (MEPC 80) meeting, member States of IMO have adopted the 2023 IMO Strategy on Reduction of Greenhouse Gas (GHG) Emissions from Ships.
- In 2018, an initial strategy was adopted that envisaged revision in 2023.
- MEPC addresses environmental issues such as prevention of ship-source pollution covered by MARPOL treaty, including oil, chemicals carried in bulk, emissions from ships.
- Maritime shipping is responsible for 3 percent of global anthropogenic GHG emissions.



### Goals of 2023 IMO GHG Strategy

- For Ships – Carbon intensity of the ship to decline through further improvement of the energy efficiency for new ships.
- For Shipping – Carbon intensity of international shipping to decline to reduce CO<sub>2</sub> emissions per transport work, as an average across international shipping, by at least 40% by 2030, compared to 2008.
- Technologies – Uptake of zero/near-zero Green House Gas (GHG) emission technologies or fuels to represent at least 5% (striving for 10%) of the energy used by international shipping by 2030.
- Net Zero – To peak GHG emissions from international shipping to reach net zero as soon as possible and to reach net zero emission by or around, i.e. 2050.

### Indicative checkpoints

- For 2030 – International shipping industry to reduce the total annual GHG emissions from international shipping by at least 20%, striving for 30%, by 2030, compared to 2008.
- For 2040 – To reduce the total annual GHG emissions from international shipping by at least 70%, striving for 80%, by 2040, compared to 2008.
- According to the Intergovernmental Panel on Climate Change 2022 report, maritime shipping is responsible for 3% of global anthropogenic GHG emissions and it is growing rapidly.

### International Maritime Organization

- Aim: It is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.
- Headquarters – London, U.K.
- Member States – IMO currently has 175 Member States.
- India is a member of IMO since 1959.
- The IMO Assembly consists of all Member States and is the highest governing body of the Organization.
- It is responsible for approving the work program, voting the budget and determining the IMO's financial arrangements.
- The IMO Council is elected by the Assembly for terms of 2 years.
- It acts as the Executive Organ of IMO and is responsible, under the Assembly, for supervising the work of the Organization.

## Henley Passport Index 2023

### Why in News

- The latest ranking published by Henley Passport Index, released recently, puts India's passport at the 80th spot, moving it up five places from its position in 2022.

### Important Points

- The global passport ranking for 2023 was conducted based on data provided by the International Air Transport Authority, or IATA, which ranks the world's passports based on the number of destinations their holders can access without a prior visa.
- Now if no visa is required, then a score with value is 1 for that passport.
- The same applies if you can obtain a visa on arrival, a visitor's permit, or an electronic travel authority (ETA) when entering the destination.



### Highlights of Henley Passport Index 2023

- Singapore has overtaken Japan to boast of the world's most powerful passport.
- Now Singapore passport allows holders visa-free entry to 192 destinations out of 227 in the world.
- Germany, Italy and Spain tied in second place, with their citizens being able to visit 190 global destinations.
- Japan, which topped the list last year, slipped to third place — its passport allowing visa-free access to 189 destinations, down from 193 in 2022.
- Other passports that tied with Japan to rank third place are Austria, Finland, France, Luxembourg, South Korea and Sweden.
- The UK jumped up two places to come in fourth, having turned the corner after a six-year decline.
- With 101, 102 and 103 ranks respectively, Syria, Iraq and Afghanistan are the world's weakest passports. Pakistan is on the 100th spot.

### India's rank

- India has climbed seven places to 80th rank from 87 last year.
- It shares the spot with Senegal and Togo, with visa-free access to 57 destinations.

## About the Henley Passport Index

- Invented nearly 20 years ago by Dr Christian H Kaelin, Chairman, Henley & Partners, the index is based on the exclusive and official data from the International Air Transport Association (IATA).
- It is the original ranking of all the passports according to the number of destinations their holders can visit without a prior visa. It's worth noting that the Henley Passport Index relies on data from the International Air Transport Association to calculate its rankings.
- The methodology used by this index differs from other passport rankings, such as the one published by financial advisory Artion Capital, which placed the United Arab Emirates in the top position last year.

## European Sky Shield Initiative

### Why in News

- Recently Austria and Switzerland have joined the 'European Sky Shield Initiative' (ESSI) for air defence in response to Russia's attack on Ukraine.

### Important Points

- The European Sky Shield Initiative (ESSI) is a regional grouping of European countries aimed at de-veloping a common air and missile defence system.
- It focuses on acquiring air defence equipment and missiles collectively to strengthen NATO's Inte-grated Air and Missile Defense (IAMD).
- The ESSI now has 19 member states, with the goal of leveraging existing NATO cooperation frame-works for defence. It was spearheaded by Germany in 2022.
- On October 13th, 2022, Germany and 14 NATO partners announced the initiative to "create a Eu-uropean air and missile defense system through the common acquisition of air defense equipment and missiles by European nations."
- The original members were: Belgium, Bulgaria, Czechia, Estonia, Germany, Hungary, Latvia, Lithu-ania, the Netherlands, Norway, Slovakia, Slovenia, Romania, and the United Kingdom.
- Each participating country controls the extent of its participation.
- As part of this MoU, Switzerland will now examine in which areas it will strengthen cooperation; e.g. to improve synergies in the Patriot GBAD system through the exchange of information or cooperation in operations and training. This can also lead to cost savings.
- Switzerland and Austria have set out their terms regarding neutrality in an additional declaration, stating, for example, that they will not participate or be involved in international military con-flicts.
- Sky Shield aims to create a common air defense for European partners, especially Germany which re-lies on legacy air defense systems for short range intercept.
- The Germans hope to leverage partner buying power to create strategic depth on allied territory and achieve wholesale prices on modern air defense systems for all ranges.



## De-Dollarisation

### Why in News

- Bangladesh and India launched the trade transaction in rupees, a step towards de-dollarization.

### Important Points

- Bangladesh and India have initiated trade transactions in rupees, aiming to reduce reliance on the US dollar and strengthen regional currency and trade.
- This bilateral trade agreement marks a significant milestone for Bangladesh, moving beyond the US dollar for trade settlement with a foreign country.
- Bangladesh Bank Governor Abdur Rouf Talukder describes the launch of trade settlement in rupees as the "first step in a great journey."



- The move signifies the growth and economic cooperation between India and Bangladesh, fostering mutual benefits.

### Dual Currency Card

- The introduction of the Taka-Rupee dual currency card, expected to be launched from September, will further facilitate trade between the two countries.
- The dual currency card will help reduce transaction costs during trade with India, enhancing convenience for traders and strengthening economic ties.



### Normalizing Trade in Rupees

- While frontier trading has existed between Bangladesh and India in certain areas called “border huts,” formal trade will now be conducted in rupees.
- Initially, the trade will be transacted in rupees, with a gradual shift towards using the Bangladeshi currency, Taka, as the trade gap decreases.
- Banks in both Bangladesh and India have been granted permission to open nostro accounts for foreign currency transactions.
- The exchange rate will be determined based on market demand, ensuring transparency and efficiency in the trade process.
- According to official data, Bangladesh’s exports to India amount to USD 2 billion, while imports from India are valued at USD 13.69 billion.
- Some economists express skepticism about the immediate benefits for Bangladesh due to the trade deficit. However, Governor Talukder emphasizes the broader impact on exporters and importers in both countries.

## Force Majeure

### Why in News

- Central Government is considering resuming operations at ONGC Videsh Ltd.’s exploration block in Iraq, which has been under force majeure since 2003.

### Important Points

- Indian government is considering resuming operations in Iraq for ONGC Videsh’s (OVL) hydrocarbon exploration block. Iraq has emerged as a significant supplier of crude oil to India, prompting Indian energy companies to potentially invest in oil and gas assets in Iraq.
- The resumption of operations and investments in the stalled project would involve careful consideration of various factors, including the security situation.
- The exploration block, known as 'Block 20' (previously Block 8), is a large on-land area located in Iraq's Western Desert, spanning over 10,500 square kilometers.
- OVL had acquired a 100 per cent stake in the block by signing an exploration and development contract in November 2000.
- However, due to security concerns, force majeure was declared in 2003, relieving participants of liability for unforeseeable and unavoidable catastrophes that hindered contractual obligations.
- During an India-Iraq Joint Commission Meeting (JCM) held recently, discussions took place regarding investments and the resumption of operations in stalled projects.
- The meeting emphasised the natural and traditional synergies between the two countries, considering India's status as a rapidly growing energy demand center globally.

### Force Majeure

- Force majeure is a French term that literally means “greater force.”



- The concept of force majeure refers to an extraordinary event rendering the legal obligations between two or more contractually bound parties impossible to fulfil.
- It is related to the concept of an act of God, an event for which no party can be held accountable. This type of event must be entirely beyond the parties' reasonable control.
- As a precautionary measure against breach of contract, many commercial agreements contain force majeure contract clauses enumerating a list of major events that could result in non-performance of contractual duties.
- Notable events include war, riots, criminal activity, epidemics, pandemics, and other unforeseeable events.
- For force majeure to apply, these hindering circumstances must be beyond a party's reasonable control.
- The contracting parties must also prove their reasonable efforts to mitigate the circumstances that have rendered the fulfilment of their duties impracticable.
- Such events may result in the parties delaying their obligations for a period of time, revising the contract terms, or agreeing on the contract's cancellation.
- While force majeure has neither been defined nor specifically dealt with, in Indian statutes, some reference can be found in Section 32 of the Indian Contract Act, 1872 (the "Contract Act") envisages that if a contract is contingent on the happening of an event which event becomes impossible, then the contract becomes void.
- Force majeure conflicts with the concept of "pacta sunt servanda," a principle in international law that agreements must be kept and not wriggled out of.

## Solomon Islands

### Why in News

- Recently, the leader of Solomon Islands hit back at criticism of his nation's deepening security ties with China.

#### Important Points

- Prime Minister of Solomon Islands while in China signed nine agreements and memorandums, including a police cooperation plan.
- The new agreements come after the Solomon Islands signed a security pact with China last year, raising fears of a military buildup in the region.
- The US has countered with diplomatic moves of its own, including opening an embassy in the Solomon Islands.
- The Solomon Islands switched allegiance from the self-ruled island of Taiwan to Beijing in 2019, threatening the close ties with the US that date to World War II.
- Both the US and Australia have raised concerns about the secrecy of the new police plan.
- Prime Minister of Solomon emphasised that the China's plan to help the police complemented existing Australian and New Zealand police programmes in his nation.
- Home to 700,000 people and lying about 2,000 km (1,200 miles) northeast of Australia, Solomon Islands has been one of China's biggest successes in a campaign to expand its presence in the South Pacific.



#### About Solomon Islands

- The Solomon Islands are an island nation located in Oceania. They consist of approximately 992 small islands, atolls and reefs.
- Only 347 of the islands are populated. The six major islands are Choiseul, Guadalcanal, Malaita, Makira, New Georgia and Santa Isabel.
- The Solomon Islands are the third-largest archipelago in the South Pacific.
- The first settlers of the Solomon Islands were Papuan-speaking hunter-gatherers from New Guinea. They inhabited the islands for possibly as long as 50,000 years before Austronesian-speaking early Melanesians began arriving around 4000BC.
- The first European to explore the islands was the Spanish explorer Alvaro de Mendana in 1568.
- Believing that gold was present, Mendana named the islands after the legendary King Solomon's mines.
- The Solomon Islands were colonised by the UK in the 19th century. The British Solomon Islands Protectorate was declared in 1893.
- The protectorate was informally known as "The Happy Isles".

- In 1942, during the Second World War, the Solomon Islands were occupied by Japan. There was extensive fighting, especially during the decisive Battle of Guadalcanal. The Japanese were eventually forced from the islands by the Allies in 1945 and British rule was restored.
- In 1976, the Solomon Islands became self-governing before achieving complete independence from the UK in 1978 with Prime Minister Peter Kenilorea in power.
- The national flag consists of triangles of blue, which represents the importance of water, and green, which represents trees and crops, separated by a yellow diagonal stripe which represents the sun.

## India-Myanmar-Thailand Trilateral Highway

### Why in News

- India's External affairs minister recently met his Myanmar counterpart and discussed expediting projects, especially the India-Myanmar-Thailand trilateral highway.

### Important Points

- The external minister of India met his Myanmar counterpart to discuss the expeditions projects especially the India-Myanmar-Thailand trilateral highway and the challenges faced in the smooth implementation of the project.

### India-Myanmar-Thailand Highway

- India-Myanmar-Thailand Highway is a significant regional connectivity project aims to establish a road link between India, Myanmar and Thailand.
- The highway will span a distance of approximately 1,360 kilometres (845 miles), starting from Moreh in Manipur, India, and passing through Myanmar before reaching Mae Sot in Thailand.
- It was first proposed by former Prime Minister Atal Behari Vajpayee and was approved at a ministerial-level meeting between India, Myanmar and Thailand in April 2002.
- The construction of the India-Myanmar-Thailand Trilateral Highway began in 2012 and is being implemented in several phases.
- The India-Myanmar Friendship Road forms the first segment of the IMT Highway. It runs from the border at Tamu/Moreh to Kalemeyo and Kalewa.
- In December 2020, Bangladesh showed interest towards joining this highway project in order to boost connectivity from Dhaka.
- India and ASEAN have planned to extend this route to Laos, Cambodia and Vietnam as this connectivity will generate annually an estimated US\$70 billion in incremental GDP and 20 million in incremental employment by 2025. India has offered US\$1 billion line-of-control credit for the India-ASEAN connectivity projects.



### Implementing Agencies

- On the Indian side, the project is implemented by the Ministry of External Affairs with the cooperation of its counterparts in Myanmar and Thailand. And the budget was allocated for this project from the Ministry of Finance.

### India's contribution in IMT Highway Project

- India-Myanmar Friendship Road linking the border of Tamu/Moreh to Kalmeya and Kalewa is also a part of this project.
- India has undertaken the construction of two sections of the highway in Myanmar:
  - The construction of the 74 km Kalewa-Yagyi road section.
  - The construction of 69 bridges along with the approach road on the 70 km Tamu-Kyigone-Kalewa (TKK) road section.
- By 2023, it is expected to complete the highway's Imphal-Moreh portion on the Indian side.
- India also plans to add a new connection to the IMT highway by upgrading the route from Zokhawthar in Mizoram to Tedim in the Chin state of Myanmar.

### Significance of the IMT trilateral highway

- This trilateral highway project will significantly reduce the transportation costs which will increase cross-border economic activities and trade opportunities.



- This project will also develop the friendly relations among the connected countries and also promote the tourists and cultural activities.
- This project will open new market and trading opportunities for the countries which will improve their economic growth and helps in development.

## Northern/Interaction-2023

### Why in News

- A Chinese naval flotilla recently set off to join Russian naval and air forces in the Sea of Japan to participate in the "Northern/Interaction-2023" military drills.

### Important Points

- Northern/Interaction-2023 military drills is organized by the Chinese People's Liberation Army Northern Theatre Command in the central Sea of Japan.
- The event marks Russia's second time participating in the PLA annual strategic drills, and also a first that Russia has dispatched both naval and air forces to participate in similar events.
- The drills are themed "safeguarding the safety of strategic maritime routes".
- In August 2021, Russia participated in the "Western/Interaction-2021" exercise held at Northwest China's Ningxia Hui Autonomous Region, which marked the first time that China invited foreign forces to participate in its annual strategic exercises in its territory.
- "Northern/Interaction-2023" drills are organized by the PLA Northern Theatre Command, while PLA forces participating in the previous "Western/Interaction-2021" exercise were mainly composed of forces from the Western Theatre Command.



### Sea of Japan

- Sea of Japan (East Sea) is a marginal sea of the western Pacific Ocean.
- It is located in Eastern Asia that is bounded by Japan and Sakhalin Island to the east and by Russia and Korea on the Asian mainland to the west.
- Its area is 377,600 square miles (978,000 square km).
- The sea itself lies in a deep basin, separated from the East China Sea to the south by the Tsushima and Korea straits and from the Sea of Okhotsk to the north by the La Perouse (or Sōya) and Tatar straits.
- To the east it is also connected with the Inland Sea of Japan by the Kanmon Strait and to the Pacific by the Tsugaru Strait.
- It influences the climate of Japan because of its relatively warm waters.

## Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

### Why in News

- The UK has formally agreed to become the first European country to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

### Important Points

- The United Kingdom formally signed a treaty to join a major Indo-Pacific bloc — what it said was the biggest trade deal since the country left the European Union at the beginning of 2020.
- UK Business Minister put her signature on the accession protocol for the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in Auckland, New Zealand.
- Britain has "a seat at the table in the fastest-growing region" and that other countries are queuing up to join the pact
- The pact would boost UK exports by 1.7 billion pounds (€1.9 billion, \$2.23 billion), imports to the UK by 1.6



billion pounds and gross domestic product (GDP) by £1.8 billion pounds in the long term. The pact is expected to take effect in the second half of 2024.

### What is CPTPP ?

- The CPTPP is a landmark pact agreed upon in 2018 that cuts trade barriers among 11 countries, including Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam.
- The pact requires countries to eliminate or significantly reduce tariffs and make strong commitments to opening services and investment markets.
- It also has rules addressing competition, intellectual property rights and protections for foreign companies.
- CPTPP is seen as a bulwark against China's dominance in the region, although Beijing has applied to join, along with Taiwan, Ukraine, Costa Rica, Uruguay and Ecuador.



### Why is the CPTTP so important to the UK ?

- CPTTP will cut tariffs for UK exports to Asia Pacific countries and with UK membership, the trading bloc will have a combined GDP of 12 trillion pounds and account for 15% of global trade.
- Britain is keen to deepen trade ties in the Pacific after Brexit in 2020.
- London has been pushing a “Global Britain” strategy since it gave up EU membership after nearly 50 years, leaving the bloc's single market and customs union.
- Since Brexit, the UK has sought other trade deals with countries and trading blocs around the world that the government says have faster-growing economies than the EU.
- But London will likely struggle to achieve free trade deals with large powers like China in the near term and even its closest ally, the United States has further trade liberalization with Britain is currently off the table.
- Critics say CPTTP and other deals will struggle to compensate for the economic damage sustained by leaving the now-27-member EU — the world's largest trading bloc and collective economy.
- The UK's long-term productivity is forecast to be reduced by 4% as a result of Brexit.
- The UK already has trade deals with 10 of the 11 other CPTTP members and the eventual economic boost is likely to increase GDP by just 0.08% annually.
- In 2022, Britain exported 340 billion pounds of goods and services to the EU, 42% of total UK exports.
- The global growth is forecast to come from the Indo-Pacific by around the middle of 2030 and growth will continue into the middle of the century.

### What else was announced at the CPTTP meeting ?

- Trans-Pacific trade pact members were gathering intelligence on those countries interested in joining the agreement to see whether they were able to meet the bloc's “high standards.”
- The membership is currently undertaking an information-gathering process on whether aspirant economies can meet the CPTTP's high standards, taking into account their experience on their trade commitments.

## India-USA

### Why in News

- India-USA Strategic Clean Energy Partnership Ministerial Joint Statement

### Important Points

- During the meeting, the sides noted the growing importance of bilateral energy cooperation between the countries while underscoring the critical importance of bilateral clean energy engagement and the achievements of the SCEP in strengthening energy security, creating opportunities for clean energy innovation, addressing climate change and creating employment generation opportunities.
- The sides welcomed the growing energy trade between the countries which has been consistently scaling new heights and welcomed the commercial partnerships facilitated by the SCEP.
- The sides renewed their commitment to work towards a just, orderly and sustainable energy transition, which prioritises access to reliable, affordable, and clean energy supply.
- Highlighting that India and the US represent the largest democracies, and the largest and fastest growing economies

in the world, the sides underscored the importance of joint action and col-laboration not only for bilateral progress but also for navigating the global energy transition.

- The sides reviewed the ambitious and dynamic SCEP mandate, which over the years has deepened and strengthened collaboration across a wide breadth of clean energy work streams, including clean and renewable energy, energy efficiency, increased collaboration in emerging technologies like battery storage and swapping technologies, gas hydrates, advanced biofuels, and hydrogen and electrolyzer production.
- In this context, the sides recognised the importance of producing green/clean hydrogen as a critical energy source for global decarbonisation and agreed to support each other's national hydrogen missions.
- The sides also welcomed the work done by the five pillars of the SCEP towards deepening the coop-eration between the Public and Private sectors to support decarbonization in both countries, in-cluding through public-private task forces, reverse trade missions, India-US Business Roundtables chaired by the Ministers, and other commercial dialogues.
- The sides emphasized the importance of promoting energy access, affordability and energy justice in each country.
- The sides also acknowledged that successfully achieving ambitious climate and clean energy aspira-tions necessitates coordinated efforts on development of energy transition roadmaps, capacity building, job skilling, and sharing of best practices at all levels of government.
- In that context, the sides agreed to work toward development of net zero villages in India to support the clean energy transition.
- The sides discussed ways of advancing the positive agenda outlined by Prime Minister of India and President of USA in their Joint Statement of June 22, 2023 which welcomed efforts under the SCEP to develop and deploy energy storage technologies, expand collaboration in support of their respective national hydrogen strategies and cost reduction goals, and accelerate cooperation on new and emerging renewable energy technologies.



### To that end, the Ministers welcomed

- establishment of the public-private Energy Storage Task Force and related efforts to support large-scale integration of renewable energy needed to support the clean energy transition;
- deepened collaboration to scale and accelerate deployment of hydrogen technologies through the public-private Hydrogen Task Force and other efforts in support of their national hydrogen strategies, in-cluding a focus on common cost reduction goals;
- launch of the U.S.-India New and Emerging Renewable Energy Technologies Action Platform (RETAP) to accelerate development of key technologies to advance common ambitious clean energy goals.

### The sides also welcomed ongoing collaboration in such areas as

- modernizing the power system to improve reliability, resilience, flexibility, affordability, and sus-tainability of clean energy systems;
- promoting energy efficiency and conservation, including in buildings, appliances, and the indus-trial sector;
- reducing emissions across the oil and gas sector, including through examining methane abate-ment and transfer and deployment of technologies under voluntary and mutually agreeable terms; and
- advancing emerging technologies to support electrification and decarbonization of hard-to-abate sectors.
- Both sides launched the South Asia Group for Energy (SAGE) to deepen the engagement between Indian agencies and US national laboratories to support research, analysis and capacity building activities such as building modelling capacity in Life Cycle Assessment of low carbon technolo-gies and analytics on energy consumption in building sector.
- The sides praised the longstanding joint R&D under the Partnership to Advance Clean Ener-gy-Research (PACE-R), including the US-India Collaborative for Smart Distribution System with Storage (UI-ASSIST) consortium co-led by Indian Institute of Technology, Kanpur and Washing-ton State University. Welcoming the importance of such R&D Initiatives, the sides welcomed the successes of PACE-R to date and highlighted the final year of the R&D track on advanced smart grid and energy storage technologies.

**Agencies from across the U.S. and Indian governments demonstrated a number of accomplish-ments across the five technical pillars of cooperation on:**

- Power & Energy Efficiency,
- Renewable Energy,
- Responsible Oil & Gas,
- Sustainable Growth, and
- Emerging Fuels and Technologies.

## Chapter 8

# Government Scheme

## Scheme for Girl Child Victims

### Why in News

- Government launches scheme for shelter, aid to pregnant minor rape victims

### Important points

- The proposal for critical care and support for accessing justice to rape/gang rape survivors and minor girls who get pregnant has been approved by the WCD Ministry with an outlay of Rs 74.10 crore and will be applicable across the country in a week's time.
- Recognising the physical and emotional trauma that minor victims of rape or aggravated assault undergo, and in certain circumstances where such victims become pregnant, we in the ministry have decided to provide medical infrastructural support, apart from the financial support that such minor victims are in need of, under the aegis of the Nirbhaya fund.
- The scheme aims to provide shelter, food, daily needs, safe transportation for attending court hearings and legal aid to minor girls who have been abandoned by their family due to forced pregnancy, either due to rape or gang rape, or due to any other reason, and have no other means to support themselves.
- In 2021, the National Crime Records Bureau (NCRB) reported 51,863 cases under the POCSO Act. The WCD Ministry officials revealed that 64% or 33,348 cases out of those were reported under sections 3 and 5 of the Act, which pertains to penetrative sexual assault and aggravated penetrative sexual assault, respectively.
- According to officials, the fund will help in setting up shelters for such victims. This could be in the nature of standalone shelters, or wards earmarked for such victims in existing child care institutions (CCIs), as state governments see fit. In case of wards inside existing CCIs, the person in-charge of the institution will ensure that a separate safe space is provided to minor rape victims, "as her needs may be different from other children residing there".



### POSCO Act

- The Protection of Children from Sexual Offences Act, 2012 is legislation which aims at protecting children from all types of sexual abuse. Although the Convention on the Rights of the Child was adopted by the United Nations in 1989, the offences against children were not redressed by way of any legislation in India till the year 2012.
- It provides stringent deterrents for the commission of offences against children ranging from a minimum of 20 years of imprisonment to the death penalty in case of aggravated penetrative sexual assault.

## Fire Services

### Why in News

- Ministry of Home Affairs Launches Scheme for Expansion and Modernization of Fire Services in States

### Important Points

- The Ministry of Home Affairs has introduced the "Scheme for Expansion and Modernization of Fire Services in the States" with a significant allocation of Rs. 5,000 Crore.
- This scheme was announced by Union Home Minister and Minister of Cooperation during a meeting with Ministers of Disaster Management of the States/Union Territories in New Delhi.



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- The objective of the scheme is to strengthen fire services across the country and make India disaster-resilient.

### Objective of the Scheme

- The primary goal of the scheme is to expand and modernize fire services in the States by enhancing preparedness and capacity-building components of the National Disaster Response Fund (NDRF).

### Funding and Contribution

- For project proposals under the scheme, State Governments need to contribute 25% of the total cost, except for the North-Eastern and Himalayan (NEH) States, which will contribute 10% from their budgetary resources.
- The scheme is based on the recommendation of the Fifteenth Finance Commission (XV-FC), allowing an allocation of 12.5% from the National Disaster Response Fund (NDRF) and State Disaster Response Fund (SDRF) for the Funding Window of Preparedness and Capacity Building.

### Allocation and Utilization

- An amount of Rs. 5,000 Crore has been earmarked from the National Disaster Response Fund (NDRF) corpus for the priority project of “Expanding and Modernization of Fire Services.”
- It is essential to note that there will be no spill-over of liabilities for projects sanctioned beyond the specified award period.



## Digital India

### Why in News

- Digital India mission celebrated 8th anniversary

### Important Points

- Over the past eight years, the Digital India initiative has achieved remarkable progress in advancing technology and empowering millions of Indian citizens through digital means.
- The program, aimed at creating a digitally inclusive society, has revolutionized governance, connectivity, and service delivery, marking significant milestones.
- It has made impressive strides, across all its three core pillars digital infrastructure creation, digital delivery of services, and digital capacity building through literacy, setting a strong foundation for all future endeavors.



### Antyodaya : Growth with inclusion

- This ambitious program was introduced in India at a time when smartphones and 4G were becoming popular in the urban areas and the transition from 2G and 3G was just unfolding.
- The program intended to change the idea of paying a premium for high quality smartphones and high speed data and make these accessible to a wider audience by creating real use cases which would ensure the rise and development of the last person in society.
- What followed was a smartphone and data revolution, connecting hundreds of millions of Indians through affordable smartphones and cheap data tariffs.
- It is important to note that Digital India was introduced at a time when technology and innovation was still a very urban prerogative and thus its essential to acknowledge the substantial efforts that went into building infrastructure, promoting adoption, and nurturing an ecosystem conducive to innovation and growth.
- The Digital India program embodies this spirit of lighting a candle in the darkness and bringing millions of new internet users online and empowering them.
- On the eighth anniversary of Prime Minister transformative initiative delve into the eight major areas that have undergone significant transformation under the Digital India program:

- **Bridging the Digital Divide:** Digital India has played a vital role in narrowing the digital divide, bringing urban and rural areas closer through expanded internet connectivity. Infra-structure development, exemplified by the BharatNet project, has enabled broadband access for over 1,72,000 village panchayats, empowering millions of rural Indians to leverage the internet for education, livelihoods, and communication as per the last available data sets. This ambitious project, when completed will provide ICT access through broadband connectivity across all 250,000 village gram panchayats covering 630,000 inhabited villages of India terminating at Community Development Blocks (CDB).
- **The Data Revolution:** In the past decade, India has witnessed a revolution in affordable smartphones and data tariffs. As of July 2023, the country counts 850 million broadband subscribers, a staggering growth of nearly 250% from 2015, representing the highest growth in the world. In 2022, data consumption per user per month, on an average, was 19.5 GB and the pan-India mobile data usage per month has grown from 4.5 exabytes in 2018 to 14.4 exabytes in 2022. This is expected to double by 2024 on the back of 5G adoption.
- **Digital Payments:** The digital payments landscape has experienced a significant shift under the Digital India program. With over 82 billion digital transactions in 2023 alone, the implementation of platforms like the Unified Payments Interface (UPI) has revolutionized financial transactions and service delivery. In a single month, UPI transactions exceeded INR 14.3 trillion, surpassing the total value of all digital transactions in the entire fiscal year of 2015.
- **Digital Governance & Service Delivery:** Digital India has transformed governance by leveraging technology to enhance transparency, efficiency, and citizen participation. Government processes infused with technology have streamlined service delivery and facilitated citizen-centric governance. Platforms such as e-Government Procurement (GeM), e-Hospital, and DigiLocker have simplified procedures, reduced red tape, and made essential services accessible to all. In FY 2021 alone, e-transactions related to government services crossed the 3 billion mark, exemplifying the program's impact.
- **Digital Private Infrastructure (DPI):** Recognizing the potential of carefully designed DPI, India's G20 leadership has embraced this concept to drive positive change. The India Stack serves as the foundation for DPI, enabling seamless access to government services and promoting inclusive development. Technologies like Aadhaar, DigiLocker, DigiYatra, UPI, BharatNet, AarogyaSetu, and CoWIN have empowered citizens to access critical services remotely, revolutionizing India's digital landscape.
- **Digital Skills and Workforce Reforms:** Digital India places significant emphasis on digital literacy and skilling initiatives. Programs such as the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) have empowered millions, especially in rural areas, with essential digital skills, enabling active participation in the digital economy. The National Digital Literacy Mission (NDLM) and Skill India have further strengthened the nation's workforce by providing training in emerging technologies and fostering entrepreneurship.
- **Financial Inclusion:** The Digital India Program has played a crucial role in promoting financial inclusion in India through the JAM trinity. Initiatives like the Pradhan Mantri Jan Dhan Yojana have made sure that the poorest people have access to financial services. This government initiative has facilitated the opening of over 430 million bank accounts for previously unbanked individuals, promoting digital transactions and financial empowerment.
- **Employment:** India's digital revolution has provided new opportunities for its workforce, thanks to affordable and accessible high-speed internet. The expansion of online education, gig economy, and e-commerce has created job opportunities and reduced the gender gap. The online work sector is projected to reach \$455 billion by the end of 2023, impacting various sectors such as customer service, digital marketing, and online education.

## Credit Guarantee Scheme

### Why in News

- First ever "Credit Guarantee Scheme" for Livestock Sector launched for rebooting rural economy by leveraging MSMEs.

### Important Points

- Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry and Dairying is implementing the Credit Guarantee Scheme under Animal Husbandry Infrastructure Development Fund (AHIDF) to strengthen credit delivery system and facilitate smooth flow of credit to the Micro, Small & Medium Enterprise (MSMEs) engaged in Livestock sector without hassles of collateral security.
- For operationalizing the scheme, DAHD has established a Credit Guarantee fund Trust of Rs. 750.00 crores,

which will provide credit guarantee coverage up to 25% of the credit facilities extended to the MSMEs by the eligible lending institutions.

#### Eligibility :

- The scheme targets underserved sections of society, including first-generation entrepreneurs and underprivileged individuals, who often lack collateral security for their ventures.

#### Aims :

- It aims to strengthen the credit delivery system and ensure smooth access to finance for entrepreneurs engaged in the Livestock sector.

#### Objective :

- The main objective is to encourage lenders to focus on the viability of projects and provide credit facilities based on the primary security of the assets being financed.
- By providing access to financial assistance, it promotes investments in various areas of the livestock sector, such as dairy and meat processing, animal feed plants, breed improvement technology, waste management, and veterinary vaccine and drug manufacturing facilities.

#### Funding -

- The DAHD has set up a credit guarantee fund trust of Rs 750 crore, which will cover up to 25 per cent of credit facilities extended to eligible MSMEs by lending institutions.
- The trust, formed in partnership with NAB Sanrakshan Trustee Company Private Ltd, a subsidiary of NABARD, ensures credit guarantee for MSMEs under the AHIDF scheme.



### Key features include

- Interest subvention of three per cent
- Loan of up to 90 per cent of the total project cost from any Scheduled Bank, National Cooperative Development Corporation (NCDC).

## Advance Authorisation Scheme

### Why in News

- Recently, the Directorate General of Foreign Trade (DGFT) implemented the Advance Authorisation Scheme under the Foreign Trade Policy, which allows duty-free import of inputs for export purposes.

### Important Points

- To make the norms fixation process more efficient, the DGFT has created a user-friendly and search-able database of Ad-hoc Norms fixed in the previous years.
- These norms can be used by any exporter without requiring a Norms Committee review as outlined in the Foreign Trade Policy 2023.
- The database is hosted on the DGFT Website and allows users to search using Export or Import Item Description, Technical Characteristics, or Indian Tariff Classification ITC (HS) codes.
- It allows duty free import of inputs, which are physically incorporated in an export product. In addition to any inputs, packaging material, fuel, oil, catalyst which is consumed / utilized in the process of production of export product, is also be allowed.
- They are not allowed to sell the products in the domestic market.
- To access the database, the exporter or public may visit the DGFT Website under Services --> Advance Authorisation/DFIA --> Ad-hoc norms.
- If an ad-hoc norm matches the item description, specified wastages, and complies with the provisions outlined in the Handbook of Procedures (HBP), applicants may choose to apply for an Advance Authorisation under the



"No-Norm Repeat" basis.

- The Advance Authorization is valid for 12 months from the date of issue of such Authorization.
- This trade facilitation measure simplifies the advance authorisation and norms fixation process, re-sulting in shorter turnaround times for exporters, improved ease of doing business, and reduced compliance burden.
- This scheme is available to either a manufacturer exporter directly or a merchant exporter tied with a supporting manufacturer.
- It includes physical exports, intermediate supply, supplies made to specified categories of deemed exports.
- Duties exempt: The inputs imported are exempt from duties like Basic Customs Duty, Additional Customs Duty, Education Cess, Anti-dumping duty, Safeguard Duty and Transition Product-Specific Safeguard duty, Integrated tax, and Compensation Cess, wherever applicable, subject to certain conditions.

## PM-MITRA Scheme

### Why in News

- Recently, the Prime Minister of India has lauded the foundation stone laying of 2 mega textile parks in Maharashtra and Gujarat under the PM Mega Integrated Textile Regions and Apparel (PM MITRA) scheme.

### Important Points

- Over the last few days, foundation stones for 2 PM-MITRA mega textile parks have been laid. These parks will come up in Amravati, Maharashtra and Navsari, Gujarat. They will bolster productiv-ity, foster innovation and generate many employment opportunities.
- It will offer the opportunity to create an Integrated Textiles Value Chain right from spinning, weav-ing, processing/dyeing and printing to garment manufacturing etc. at one location and will re-duce the logistics cost of the Industry.
- A Special Purpose Vehicle owned by the Centre and State Government will be set up for each park which will oversee the implementation of the project.

### Funding

- The Ministry of Textiles will provide financial support in the form of Development Capital Support up to Rs. 500 crores per park to the Park SPV.
- A Competitive Incentive Support (CIS) of up to Rs 300 crore per park to the units in PM MITRA Park shall also be provided to incentivise speedy implementation.
- State governments will provide a contiguous and encumbrance-free land parcel of at least 1000 acres of land.
- Nodal Ministry: Ministry of Textiles



## Production Linked Incentive Scheme 2.0

### Why in News

- Recently, the Operational Guidelines of Production Linked Incentive Scheme 2.0 for IT Hardware has been finalized.

### Important Points

- The scheme proposes a financial incentive to boost domestic manufacturing and attract large in-vestments in the value chain.
- The target segments under PLI 2.0 Scheme shall include Laptops, Tablets, All-in-One PCs and Serv-ers and Ultra Small Form Factor.



- Implementation: Companies, both global and domestic, that meet the eligibility criteria specified in the PLI 2.0 Scheme guidelines will receive support for manufacturing goods in India within the specified target segment.
- The classification of applicants into the Hybrid (Global/Domestic) category will be determined by whether the company is domestic or global.
- A comprehensive ranking of all applicants will be maintained based on the eligibility criteria outlined in the scheme guidelines.
- Subsequently, the selection of applicants in each category—global, hybrid, and domestic—will be based on their ranking and overall PLI projection, subject to the availability of the budget.
- Tenure: The incentives provided under the PLI 2.0 Scheme will be applicable for a period of 6 years
- Base year: For the calculation of net incremental sales of manufactured goods, the base year will be the financial year 2022-23.



### Incentives payout:

- The incentive granted to each company will be based on the net incremental sales of manufactured goods in the target segment, compared to the base year.
- The maximum incentive amounts will be capped at INR 45 billion for global companies, INR 22.50 billion for hybrid (global/domestic) companies, and INR 5 billion for domestic companies.

## BHARAT Campaign

### Why in News

- Recently, Ministry of Agriculture & Farmers Welfare launched a new campaign for banks under Agriculture Infrastructure Fund titled BHARAT (Banks Heralding Accelerated Rural & Agriculture Transformation).

### Important Points

- It is a one month-long Campaign with a target of Rs 7200 crore.
- It aims to get active involvement and support of members of commercial Banks in the public and private sector, Regional Rural Banks, Small Finance Banks, NBFCs and select cooperative Banks in promoting the Scheme of Agriculture Infrastructure Fund.
- The duration of the Scheme shall be from FY2020 to FY2032 (10 years).



### Agriculture Infrastructure Fund -

- It is a Central Sector Scheme which was launched in 2020
- The scheme shall provide a medium - long term debt financing facility for investment in viable projects for post-harvest management Infrastructure and community farming assets through interest subvention and financial support.

### Benefits

- All loans under this financing facility will have interest subvention of 3% per annum up to a limit of Rs. 2 crores. This subvention will be available for a maximum period of seven years.
- Further, credit guarantee coverage will be available for eligible borrowers from this financing facility under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for a loan up to Rs. 2 crores. The fee for this coverage will be paid by the Government.
- In case of FPOs the credit guarantee may be availed from the facility created under FPO promotion scheme of Department of Agriculture, Cooperation & Farmers Welfare (DACFW).
- Moratorium for repayment under this financing facility may vary subject to minimum of 6 months and maximum of 2 years.

## Amrit Bharat Station Scheme (ABSS)

### Why in News

- Southern Railway has identified 90 stations for development under the Amrit Bharat Station Scheme (ABSS).

### Important Points

- It envisages development of stations on a continuous basis with a long-term vision.
- The scheme will subsume all previous redevelopment projects where work is yet to begin.
- The scheme aims at preparation of Master Plans of the Railway stations and implementation of the Master Plan in phases to enhance the facilities including and beyond the Minimum Essential Amenities.
- However, plans and consequent budgets will only be approved on the basis of factors such as footfall and inputs from stakeholders.
- Zonal railways have been given the responsibility of selecting stations, which will then be approved by a committee of senior railway officials.
- The model envisages low-cost redevelopment of stations which can be executed timely.
- The scheme shall cater for introduction of new amenities as well as upgradation and replacement of existing amenities.



### Facilities Planned under Amrit Bharat Station Scheme

- Provision for Roof Plaza to be created in future.
- Free Wi-Fi, space for 5G mobile towers.
- Smooth access by widening of roads, removal of unwanted structures, properly designed signages, dedicated pedestrian pathways, well planned parking areas, improved lighting etc.
- Attempts shall be made to club different grades/types of waiting halls and provide good cafe-teria/retail facilities as far as possible.
- Better furniture will be installed in waiting rooms, platforms, rest rooms and offices.
- High level platforms(760-840 mill meter) shall be provided at all categories of stations.
- Special amenities for the disabled as per guidelines issued by the Railway Board from time to time.

## Pradhan Mantri Fasal Bima Yojana (PMFBY)

### Why in News

- UNDP INDIA signed memorandum of understanding (MOU) to strengthen pradhan mantri fasal bima yojana (PMFBY)

### Important Points

- United Nations Development Programme (UNDP) and Absolute, a bioscience company, have signed a memorandum of understanding (MoU) to strengthen the Pradhan Mantri Fasal Bima Yojana (PMFBY) and enhance the resilience of farmers.
- The partnership between UNDP India and Absolute aims to enhance the implementation of the PMFBY and the Restructured Weather Based Crop Insurance Scheme (RWBCIS) by building technical capabilities of the scheme and digitalising service delivery of crop insurance and agri-cultural credit processes to increase reach and uptake of the schemes.
- It will also promote credit profiling of farmers, agri-entrepreneurs, and farmer producers organisations (FPOs), for accurate crop loss assessment and risk evaluation to mobilise agriculture financing.



- UNDP and Absolute will also use advanced technology and data-driven solutions to facilitate farm-land identification and enhance farm monitoring, research and development, and analytical capabilities to facilitate data-driven policymaking and fraud analytics, ensuring efficient and transparent delivery of government support to vulnerable farmers.
- This will help India move one step closer to achieve the goal of empowering farmer communities and making agriculture climate resilient.

### Issues with PMFBY

- Some states have opted out due to financial constraints.
- Low compensation, delayed pay-outs, and denial of claims by insurance company.
- Yield-related disputes between insurance companies and States.
- Lack of awareness among farmers on correct methodology for reporting claims.
- Failure to forecast rainfall etc. hinders assessment of crop loss and delays payment.

#### MoU will help in -

- Digitalising service delivery of crop insurance and agricultural credit processes to increase reach and uptake of scheme.
- Advancing technology and data-driven solutions to facilitate farmland identification and enhance farm monitoring, R&D.
- Promoting credit profiling of farmers, agri-entrepreneurs, and farmer producers organisations (FPOs), for accurate crop loss assessment and risk evaluation.

#### About PMFBY -

- Introduced in the 2016-17 with an aim of providing financial support to farmers suffering crop loss/damage arising out of unforeseen events.
- Available for all States and farmers on a voluntary basis.
- Farmers have to pay a maximum 2% premium for kharif, 1.5% for rabi food and oilseed crops, and 5% for commercial/horticultural.

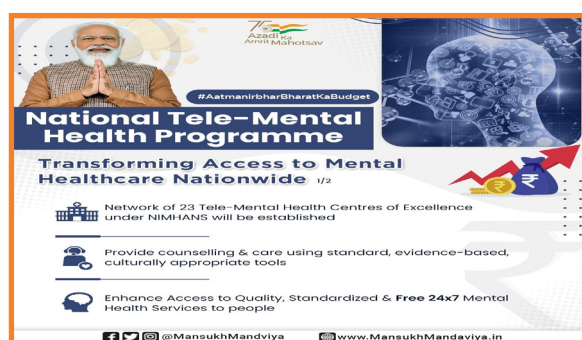
## National Tele Mental Health Programme

### Why in News

- Recently, the union health ministry said the Tele-Manas helpline under the National Tele Mental Health Programme has received over 200,000 calls since its launch in October 2022.

### Important Points

- The National Tele Mental Health Programme (Tele Mental Health Assistance and Networking Across States: Tele MANAS, the digital arm of the 'District Mental Health Programme') – launched by the Government of India in October 2022, to strengthen mental health service delivery in the country – has reached a significant milestone.
- The toll-free service has received over 2,00,000 calls from various parts of the nation since the launch, portraying a consistently progressive trend.
- There has been an exponential increase in the number of calls received with a mere gap of 3 months from reaching 1 lakh calls (in April 2023) to 2 lakh calls.



### About National Tele Mental Health Programme

- Tele Mental Health Assistance and Networking Across States (Tele MANAS) has been launched during October 2022.
- Aims: It aims to provide free tele-mental health services all over the country round the clock, particularly catering to people in remote or under-served areas.
- There are 42 active Tele Manas cells across 31 states and Union Territories.
- The service is accessible through the toll-free numbers with options to choose preferred languages (20 languages

included till now).

**Tele-MANAS will be organised in two tier system :**

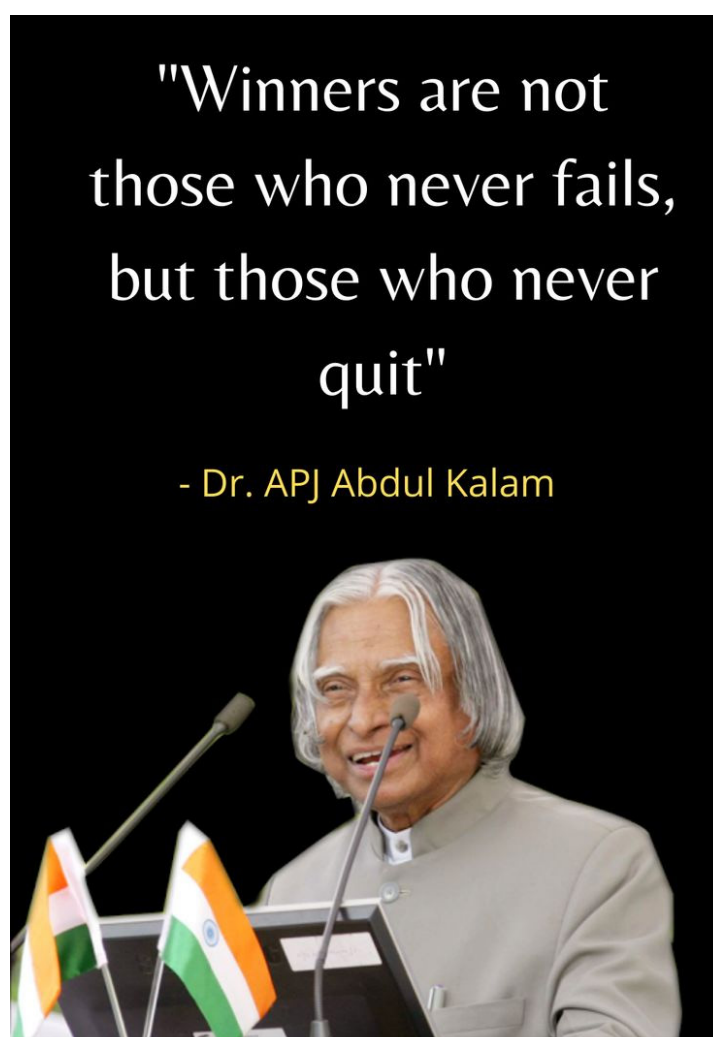
- Tier 1: It comprises of state Tele-MANAS cells which include trained counsellors and mental health specialists.
- Tier 2: It will comprise of specialists at District Mental Health Programme (DMHP)/Medical College resources for physical consultation and/or e-Sanjeevani for audio visual consultation.

**Services offered by Tele MANAS :**

- Tele counselling by trained counsellors.
- Tele Consultation by Mental Health professionals when required.
- Referral Services to other Mental Health Establishments such as Medical Colleges, District Mental Health Program (DMHP) services and speciality institutes.

### About National Mental Health Programme (NMHP)

- The Government of India has launched the National Mental Health Programme (NMHP) in 1982, with the following objectives:
- To ensure the availability and accessibility of minimum mental healthcare for all in the foreseeable future, particularly to the most vulnerable and underprivileged sections of the population;
- To encourage the application of mental health knowledge in general healthcare and in social development;
- To promote community participation in the mental health service development and to stimulate efforts towards self-help in the community.



## Chapter 9

# Miscellaneous

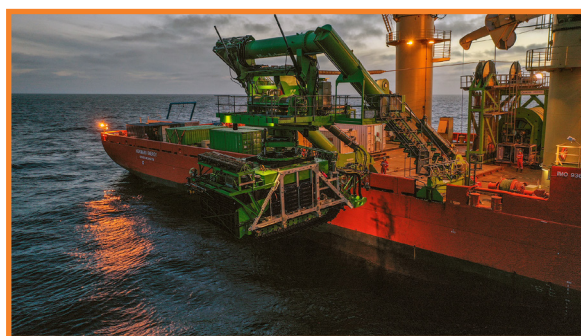
## Deep Sea Mining

### Why in News

- International seabed authority (ISA) to resume negotiations to regulate deep sea mining

### Important Points

- The International Seabed Authority - the United Nations body that regulates the world's ocean floor - is preparing to resume negotiations that could open the international seabed for mining, including for materials critical for the green energy transition.
- Years long negotiations are reaching a critical point where the authority will soon need to begin accepting mining permit applications, adding to worries over the potential impacts on sparsely re-searched marine ecosystems and habitats of the deep sea.



### What is deep sea mining ?

- Deep sea mining involves removing mineral deposits and metals from the ocean's seabed. There are three types of such mining: taking deposit-rich polymetallic nodules off the ocean floor, mining massive seafloor sulphide deposits and stripping cobalt crusts from rock.
- These nodules, deposits and crusts contain materials, such as nickel, rare earths, cobalt and more, that are needed for batteries and other materials used in tapping renewable energy and also for everyday technology like cellphones and computers.
- Engineering and technology used for deep sea mining are still evolving. Some companies are looking to vacuum materials from seafloor using massive pumps. Others are developing artificial intelligence-based technology that would teach deep sea robots how to pluck nodules from the floor. Some are looking to use advanced machines that could mine materials off side of huge underwater mountains and volcanoes.
- Companies and governments view these as strategically important resources that will be needed as onshore reserves are depleted and demand continues to rise.

### How is deep sea mining regulated now ?

- Countries manage their own maritime territory and exclusive economic zones, while the high seas and the international ocean floor are governed by the United Nations Convention on the Law of the Seas.
- It is considered to apply to states regardless of whether or not they have signed or ratified it. Under the treaty, the seabed and its mineral resources are considered the "common heritage of man-kind" that must be managed in a way that protects the interests of humanity through the sharing of economic benefits, support for marine scientific research, and protecting marine environments.
- Mining companies interested in deep sea exploitation are partnering with countries to help them get exploration licenses.
- More than 30 exploration licenses have been issued so far, with activity mostly focused in an area called the Clarion-Clipperton Fracture Zone, which spans 1.7 million square miles (4.5 million square kilometers) between Hawaii and Mexico.

### What are the environmental concerns ?

- Only a small part of the deep seabed has been explored and conservationists worry that ecosystems will be damaged by mining, especially without any environmental protocols.
- Damage from mining can include noise, vibration and light pollution, as well as possible leaks and spills of fuels

and other chemicals used in the mining process.

- Sediment plumes from the some mining processes are a major concern. Once valuable materials are taken extracted, slurry sediment plumes are sometimes pumped back into the sea. That can harm filter feeding species like corals and sponges, and could smother or otherwise interfere with some creatures.
- The full extent of implications for deep sea ecosystems is unclear, but scientists have warned that bi-odiversity loss is inevitable and potentially irreversible.

## Organic Nanogenerator

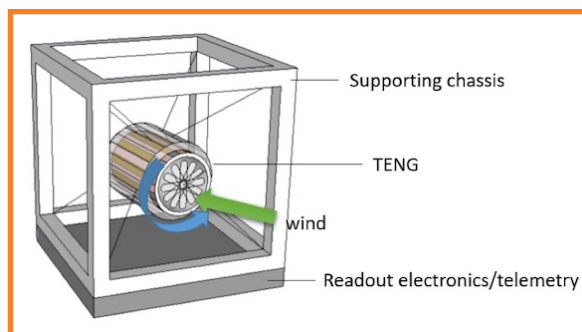
### Why in News

- Recently, scientists at the Institute of Advanced Study in Science and Technology (IASST) have developed a Nano generator device for harvesting light energy using organic material.

### Important Points

#### About Organic Nano generator :

- The device can generate current and voltage from minute amounts of heat or light that fall on it.
- The experimental exploration of energy materials has led to the successful synthesis of an organic energy material called polyaniline-rubrene, and they have fabricated an Organic Pyroelectric Nanogenerator (OPyNG).
- The pyroelectric effect of the device is induced by the light-induced change in spontaneous polarization occurring in the ultra-thin oxidized surface layer of the polyaniline-rubrene thin film.



### What is pyroelectric effect ?

- The pyroelectric effect is the change in polarization due to the change in temperature.
- Ferroelectric materials are expected to be strongly pyroelectric because ferroelectric materials have a large range of temperature-dependent spontaneous polarization
- This effect holds a unique advantage in the pyroelectric nanogenerator (PyNG), as it can optically induce the pyroelectric effect, which is useful for energy harvesting.
- The fabricated OPyNG device utilizing organic material provides new insights and opens up new avenues for harvesting energy from organic materials.
- The OPyNG operates in the UV-visible-NIR region in self-powered mode, and it offers significant advantages as it can function as a self-sustainable standalone device.

## STAR-C Initiative

### Why in News

- India is considering expanding its Solar Technology and Application Resource Centres (STAR -C) initiative to a number of Pacific Island countries.

### Important Points

- The programme aims to boost solar power ecosystems in the poorest countries.
- The initiative is run by the International Solar Alliance in partnership with the United Nations Industrial Development Organisation (UNIDO).
- It aims to create a strong network of institutional capacities within ISA member states to enhance quality infrastructure for the uptake of solar energy products and services.
- The project is also funded by France.



- Programme's objectives: Building solar workforces, standardizing products, setting up infrastructure, and raising awareness among policymakers in developing countries.
- Through this initiative, India aims to enhance the institutional capacities of International Solar Alliance member states and contribute to the development of quality infrastructure for solar energy uptake.

### Key Facts about International Solar Alliance

- It was conceived as a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions.
- It was conceptualized on the side-lines of the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris in 2015.
- With the amendment of its Framework Agreement in 2020, all member states of the United Nations are now eligible to join the ISA.
- Headquarter: India

## Crimean-Congo haemorrhagic fever (CCHF)

### Why in News

- As Europe reels under a heat wave and wildfires, the rising temperatures have also raised fears of spread of viral haemorrhagic fever generally not found in colder climates.

### Important Points

- It is a viral haemorrhagic fever usually transmitted by ticks.
- It can also be contracted through contact with viraemic animal tissues (animal tissue where the virus has entered the bloodstream) during and immediately post-slaughter of animals.
- The disease was first detected among soldiers in the Crimean Peninsula (near the Black Sea) in 1944.
- In 1969, it was found that an ailment identified in the Congo Basin was caused by the same patho-gen. Thus, the disease was named the Crimean-Congo haemorrhagic fever.
- Its outbreak constitute a threat to public health services as the virus can lead to epidemics, has a high case fatality ratio (10–40%).



### Transmission

- Animals such as cattle, goats, sheep and hares serve as amplifying hosts for the virus.
- Transmission to humans occurs through contact with infected ticks or animal blood.
- It can be transmitted from one infected human to another by contact with infectious blood or body fluids, such as sweat and saliva.
- The ticks can also be hosted by migratory birds.

### Symptoms

- Include fever, muscle ache, dizziness, neck pain, backache, headache, sore eyes and sensitivity to light.
- After 2–4 days the agitation may be replaced by sleepiness, depression and lassitude.

#### Treatment :

- There is no vaccine for the virus in either humans or animals, and treatment generally consists of managing symptoms.
- According to the WHO, “the antiviral drug ribavirin has been used to treat CCHF infection with apparent benefit.”

## Pilot Whales

### Why in News

- Seventy-eight long-finned pilot whales, a species of oceanic dolphins, were slaughtered near the capital of Faroe Islands recently.

### Important Points

- Passengers of a British cruise ship witnessed a horrific and gruesome event of pilot whales slaughtering in Faroe Islands.
- 78 pilot whales were slaughtered as a part of centuries-old hunting tradition in the Faroe Islands, near the capital of Torshavn Denmark.
- Many environmental organizations and experts condemned this outdated and cruel practice.
- British cruise ship also has apologised to passengers to dock its ship in Faroe Islands during this event.
- On an average 800 whales are killed annually, number could go up to 1400.
- After killing the meat and blubber is distributed among the islanders or participants of this practice.



### Pilot whales -

- These whales are a species of oceanic dolphins and are a part of cetaceans.
- These belong to the family Delphinidae and genus Globicephala.

### Features/Characteristics

- Having Long-fins, they have bulbous type heads and sickle-shaped flippers.
- Pilot whales are considered second largest members of the dolphin family after killer whale
- NOAA (National Oceanic and Atmospheric Administration), estimates their weight upto 5000 pound
- They are medium-sized whales and can be in the range of 19-25 feet.
- By nature they live in a group of generally 20 individuals.

### Habitat and distribution -

- They are distributed across oceans of the world.
- However these are mainly found in North Atlantic.
- They are also spotted off the coasts of Chile, Argentina, South Africa, Australia, and New Zealand.
- Also have presence in temperate and tropical waters of the Indian, Atlantic and Pacific Oceans.

### Conservation Status -

- The size of population in 2006 was estimated to be more than 200,000 In 1989 the population was estimated at 778,000
- IUCN's red list of threatened species categorised long finned pilot whales as 'Least concern'.

## Alaska Peninsula

### Why in News

- A powerful 7.2-magnitude earthquake recently struck the Alaska Peninsula region.

### Important Points

- It is a long, narrow strip of land located in the southwestern part of the U.S. state of Alaska.
- It extends about 800 kilometres (500 miles) in a southwest direction from the mainland of Alaska.
- It separates the Pacific Ocean from Bristol Bay, an arm of the Bering Sea.
- Physiography: The peninsula is largely mountainous, with numerous active and dormant volcanoes, rugged coastlines, deep fjords, and vast expanses of wilderness.
- The volcanic Aleutian Range runs along its entire length.



- The Pavlof Volcano, near the peninsula's southwestern edge, rises to more than 8,260 feet (2,518 metres) and is the most active volcano in the Aleutian volcanic arc.

#### Population :

- It has been inhabited for thousands of years by indigenous peoples, primarily the Aleut and Alutiiq (Sugpiaq) communities.
- It is sparsely populated, with small communities scattered along its coastline.

#### Biodiversity :

- It is home to diverse wildlife, including brown bears, caribou, moose, wolves, bald eagles, and various marine mammals.
- The famous Katmai National Park and Preserve, known for its brown bear population and the Valley of Ten Thousand Smokes, is located on the northeastern part of the peninsula.

#### Peninsula :

- A peninsula is a piece of land that is almost entirely surrounded by water but is connected to the mainland on one side.
- It is an extension of land that juts out into a body of water, such as an ocean, sea, lake, or river.
- Peninsulas are typically narrow and elongated in shape, although their size can vary significantly.



## Nomadic Elephant

### Why in News

- India-Mongolia joint military exercise “Nomadic Elephant – 2023” to commence at Ulaanbaatar, Mongolia

#### Important Points

- Indian Army contingent comprising of 43 personnel left for Mongolia.
- The contingent will participate in the 15th edition of bilateral joint military exercise “NOMADIC ELEPHANT-23”.
- The exercise is scheduled to be conducted at Ulaanbaatar, Mongolia from 17 to 31 July 2023.
- Exercise NOMADIC ELEPHANT is an annual training event with Mongolia which is conducted alternatively in Mongolia and India, the last edition was held at Special Forces Training School, Bakloh in October 2019.
- Soldiers of the Mongolian Armed Forces Unit 084 from and Indian Army soldiers from the JAMMU AND KASHMIR LIGHT INFANTRY Regiment will be participating in the exercise.
- Indian Army contingent reached Ulaanbaatar by an Indian Air Force C-17 aircraft.
- The aim of this exercise is to build positive military relations, exchange best practices, develop inter-operability, bonhomie, camaraderie and friendship between the two armies.
- The primary theme of the exercise will focus on counter-terrorism operations in mountainous terrain under United Nations mandate.
- The scope of this exercise involves Platoon level Field Training Exercise (FTX). During the exercise, Indian and Mongolian troops will engage in various training activities designed to enhance their skills and capabilities.
- These activities include endurance training, reflex firing, room intervention, small team tactics and rock craft training. Soldiers from both sides will learn from each other's operational experience.
- India and Mongolia have a shared commitment to regional security and cooperation. Exercise NO-MADIC ELEPHANT-23 will be yet another significant milestone in the defence cooperation between the Indian Army and Mongolian Army which will further foster bilateral relations between the two nations.



S.No	Country	Exercise
1.	Australia	AUSTRA HIND, AUSINDEX, PITCH BLACK
2.	Bangladesh	SAMPRTI, TABLE TOP, SAMVEDNA
3.	Brazil and South Africa	IBSAMAR
4.	China	HAND IN HAND
5.	Egypt	CYCLONE
6.	France	SHAKTI, VARUNA, GARUDA
7.	Indonesia	GARUDA SHAKTI, IND-INDO CORPAT
8.	Israel	BLUE FLAG
9.	Japan	DHARMA GUARDIAN, JIMEX
10.	Kazakhstan	KAZIND
11.	Kyrgyzstan	KHANJAR
12.	Malaysia	HARIMAU SHAKTI
13.	Maldives	EKUVERIN,
14.	Mongolia	NOMADIC ELEPHANT
15.	Myanmar	IMBEX, TABLE TOP
16.	Nepal	SURYA KIRAN
17.	Oman	AL NAGAH, NASEEM-AL-BAHR, EASTERN BRIDGE
18.	Qatar	ZA'IR AL BAHR
19.	Russia	INDRA, AVIANDRA
20.	Seychelles	LAMITIYE
21.	Singapore	SIMBEX
22.	Sri Lanka	MITRA SHAKTI, SLINEX, SAMVEDNA
23.	Thailand	MAITREE, SIAM BHARAT
24.	UAE	DESERT EAGLE
25.	UK	AJEY WARRIOR, KONKAN, INDRADHANUSH
26.	USA	YUDHABHAYAS, VAJRA PRAHAR, SPITTING COBRA, SANGAM, RED FLAG, COPE INDIA
27.	Uzbekistan	DUSTLIK
28.	Vietnam	VINBAX,

## Umiam Dam

### Why in News

- Authorities recently informed that the water from Umiam Dam may be released any time in case there is further rise in water level in the reservoir above the safe level.

### Important Points

- The warning comes as a proactive measure to ensure the safety and well-being of the community amidst the potential threats associated with rising water levels.
- The public has been strongly advised to avoid areas near streams, drains, and culverts. Furthermore, in the event of flooding, individuals are urged to stay away from electric poles or power lines to minimize the risk of electrocution.
- Residents residing in the downstream areas of Umiam Dam are urged to remain updated with the latest information from local authorities and follow any further instructions or warnings issued by the concerned authorities.
- By exercising caution and adhering to the safety guidelines, individuals can help mitigate risks and ensure their personal safety during this period of increased water levels.
- Location: The Umiam Dam, also known as the Barapani Dam, is a large reservoir located in the state of



Meghalaya in northeastern India.

- It is situated on the Umiang River, about 15 kilometres north of Shillong, the capital city of Meghalaya.
- Purpose: The primary purpose of the Umiang Dam is to provide hydroelectric power generation and supply drinking water to the region. It serves as a major water source for Shillong and its surrounding areas.
- The construction of the dam began in 1964 and was completed in 1965.
- It was built by the Assam State Electricity Board (ASEB) with technical assistance from the North Eastern Electric Power Corporation Limited (NEEPCO).
- Reservoir Capacity: The dam creates a reservoir known as the Umiang Lake, which has a storage capacity of approximately 9.6 billion cubic feet of water. The lake stretches over an area of about 220 square kilometres.
- Hydroelectric Power Generation: The Umiang Dam has a hydroelectric power station with a total installed capacity of 2x30 megawatts.

## Duchenne's Muscular Dystrophy

### Why in News

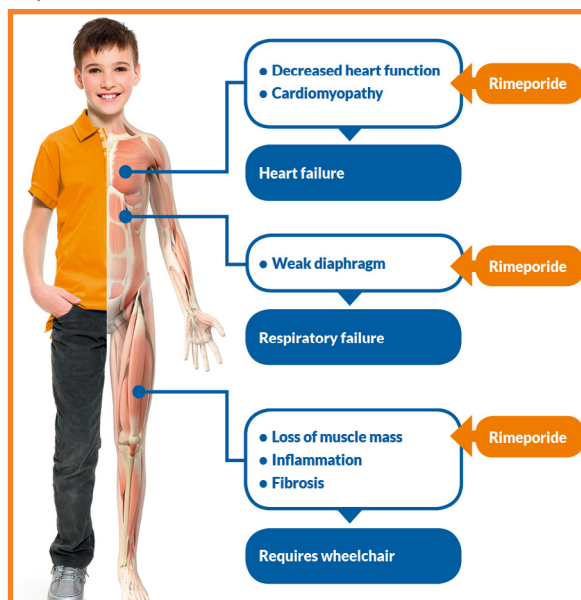
- Recently, a team of doctors from Tamil Nadu along with scientists from Japan have developed a disease-modifying treatment for Duchenne Muscular Dystrophy (DMD).

### Important Points

- Doctors from Tamil Nadu along with scientists from Japan have developed a disease-modifying treatment by using a food additive a beta-glucan produced by N-163 strain of a yeast *Aureo-basidium pullulans*.

#### About Duchenne's Muscular Dystrophy :

- It is a rare genetic disorder.
- It was first described by the French neurologist Guillaume Benjamin Amand Duchenne in the 1860.
- It is characterized by progressive muscle degeneration and weakness due to the alterations of a protein called dystrophin that helps keep muscle cells intact.
- It is a multi-systemic condition, affecting many parts of the body, which results in deterioration of the skeletal, heart, and lung muscles.
- The dystrophin gene is found on the X-chromosome, it primarily affects males, while females are typically carriers.



### Symptoms

- It can begin as early as age 2 or 3, first affecting the proximal muscles (those close to the core of the body) and later affecting the distal limb muscles (those close to the extremities).
- Usually, the lower external muscles are affected before the upper external muscles.
- The affected child might have difficulty jumping, running, and walking.
- Other symptoms include enlargement of the calves, a waddling gait, and lumbar lordosis (an inward curve of the spine).
- Later on, the heart and respiratory muscles are affected as well.
- Treatments: Presently available treatments are gene therapy, exon skipping, stop codon read-through and gene repair.

## Grand Cross of the Legion of Honour

### Why in News

- PM Modi conferred with France's highest award, Grand Cross of the Legion of Honour



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August 2023

### Important Points

- A warm gesture embodying the spirit of Indo-French partnership. PM Narendra Modi conferred with the Grand Cross of the Legion of Honour, the highest award in France by President Em-manuel Macron.
- The National Order of the Legion of Honour, or simply The Legion of Honour is the highest French decoration, both civil and military, and is one of the most famous national honours in the world.
- Legion of Honor is the reward for outstanding merit acquired in the service of the nation in a civilian or military capacity.



#### Award criteria for Foreigners :

- Foreigners may be decorated with the Legion of Honor if they have rendered services (e.g. cul-tural or economic) to France or supported causes defended by France, such as human rights, freedom of the press, or humanitarian action.
- State visits are also an occasion for conferring the Legion of Honor upon official figures, pursuant to diplomatic reciprocity and thereby supporting the foreign policy of France.
- Five Degrees: The Legion of Honour has five degrees of increasing distinction: three ranks — Cheva-lier (Knight), Officier (Officer), and Commandeur (Commander) — and two titles — Grand Of-ficier (Grand Officer) and Grand-croix (Grand Cross). The Prime Minister has been honoured with the highest French honour, akin to the Bharat Ratna in India.
- Origin: The Order was established by Napoleon Bonaparte in 1802, and has been presented for more than the past two centuries on behalf of the French Head of State to its most deserving citizens in all fields of activity.
- The motto of the Order is: Honneur et Patrie, French for Honour and Fatherland.

#### Award :

- There is no material or financial benefit attached to the award.
- The award badge is a five-armed Maltese asterisk hung on an oak and laurel wreath.
- On the obverse is the effigy of the Republic and on the reverse two tricolour flags surrounded by the motto. The colour of the ribbon is red.

## Hwasong-18

### Why in News

- North Korea has tested Hwasong-18, a new solid-fueled intercontinental ballistic missile.

### Important Points

- North Korea tested its latest Hwasong-18 intercontinental ballistic missile (ICBM). This ICBM is the first to use solid propellants.

### What is the Hwasong-18 ICBM ?

- The Hwasong-18 is a solid-fuelled ICBM and was first unveiled at the 75th anniversary of the founding of the Korean People's Army in DPRK's capital Pyongyang.
- The use of solid propellants in the Hwasong-18 allows for faster deployment of missiles.
- Solids were used for many military applications, such as short-range rockets, but they were not used for any long-range applications, and certainly not for spaceflight due to their comparative lack of power.
- Despite this, solid propellants were extremely attractive for military missile use primarily because they were storable.



### Solid Fuel Advantages

- Solid fuel is dense and burns quite quickly, generating thrust over a short time.
- Solid propellants can fire faster and accelerate more quickly at liftoff.

- Solid fuel can remain in storage for an extended period without degrading or breaking down - a common issue with liquid fuel.
- Solid-fuel missiles are easier and safer to operate, and require less logistical support, making them harder to detect and more survivable than liquid-fuel weapons.

## Ballistic Missile

- It is a rocket-propelled self-guided strategic-weapons system that follows a ballistic trajectory to deliver a payload from its launch site to a predetermined target.
- Ballistic missiles are powered initially by a rocket or series of rockets in stages, but then follow an unpowered trajectory that arches upwards before descending to reach its intended target.
- Ballistic missiles can carry either nuclear or conventional warheads.

### ICBMs :

- ICBMs are ballistic missiles that have a range of over 5,500 km and have nuclear weapons delivery technology.
- Presently, in addition to the DPRK, Russia, the United States, France, the United Kingdom, China, India and Israel are the only countries that are in documented possession of land-based ICBMs.

## Cannabis Medicine Project

### Why in News

- Recently, Union Minister of State (Independent Charge) Science & Technology said that Jammu is going to pioneer India's first Cannabis Medicine Project.

### Important Points

#### About Cannabis Medicine Project :

- 'Cannabis Research Project' of CSIR-IIIM Jammu is a first of its kind in India initiated under the leadership of Science & Technology Ministry in Private Public Partnership with a Canadian firm, which has a great potential to put substance of abuse for the good of mankind especially for patients suffering from neuropathies, cancer and epilepsy, malignancies.
- This project of CSIR-IIIM is also important from the perspective of Atma- Nirbhar Bharat as it will be able to produce export quality drugs meant for different kinds of neuropathies, diabetic pains etc.
- This project will explore the therapeutic properties of Cannabis, a plant which is otherwise prohibited and known for abuse.



#### Cannabis Cultivation :

- Cannabis, weed, pot, and marijuana all refer to the same group of plants known for their relaxing and calming effects.
- Cannabis contains at least 120 trusted Source active ingredients, or cannabinoids. The most abundant ones are cannabidiol (CBD) and delta-9-tetrahydrocannabinol (THC).
- Cannabidiol (CBD) - This is a psychoactive cannabinoid, yet it's non-intoxicating and non-euphoric.
- THC- This is the main psychoactive compound in cannabis.

#### Legal provisions in India :

- The central law that deals with cannabis is the Narcotic Drugs and Psychotropic Substances Act, 1985.
- The NDPS Act prohibits the sale and production of cannabis resin and flowers, but the use of leaves and seeds of the cannabis plant is permitted.
- However, different states have their own laws relating to the consumption, possession, sale or purchase of it.
- States like Uttarakhand, Uttar Pradesh, Manipur, Madhya Pradesh and Himachal Pradesh have started making the policy and rules for the use of Cannabis for scientific purposes.

#### About CSIR-Indian Institute of Integrative Medicine(CSIR-IIIM) :

- It is the oldest scientific research institute in India with a history of discovering mint way back in 1960s, the centre of purple revolution and now the Cannabis Research Project.
- It was first established as a research and production centre in 1941 but later taken over by the Council of

Scientific & Industrial Research (CSIR) in 1957.

- Mandate: To discover new drugs and therapeutic approaches from Natural Products, both of plant and microbial origin, enabled by biotechnology, to develop technologies, drugs and products of high value for the national and international markets.

## India Climate Energy Dashboard (ICED) 3.0

### Why in News

- NITI Aayog recently launched India Climate Energy Dashboard (ICED) 3.0.

### Important Points

- It is the country's one-stop platform for near real-time data on the energy sector, climate, and related economic datasets based on government published sources.
- It was developed by NITI Aayog in collaboration with the energy and climate think-tank Vasudha Foundation.



### Features

- Developed as a user-friendly platform, ICED 3.0 enables users to freely access and analyses datasets using an analytical engine.
- It will facilitate insights and enhance understanding about the energy and climate sectors while identifying the key challenges.
- The Portal will draw insights from the available data parameters and hence immensely useful in monitoring the progress of India's clean energy transition journey.
- This dashboard offers more than 500 parameters, over 2000 infographics, and a number of interactive visualizations, allowing users to gain a holistic understanding of India's energy sector.
- Besides energy and climate, the dashboard also offers information on economy and demography for comparative study and its combined analysis along with the energy and climate issues.

## Maputo Protocol

### Why in News

- 2023 marks the 20th anniversary of Protocol to African Charter on Rights of Women in Africa (Maputo Protocol).

### Important Points

- To mark the 20th anniversary of Maputo Protocol to promote the continued adaptation and implementation of its progressive provisions, a landmark report has been prepared by the Solidarity for African Women's Rights Coalition (SOAWR), Equality Now and Make Every Women Count (MEWC), titled 20 years of the Maputo Protocol.
- The report summarizes the progress that has been made in Africa to date towards the ratification, domestication and implementation of the Maputo Protocol with a series of detailed case studies illustrating some key achievements and challenges along the way.
- The evidence is presented alongside recommendations from SOAWR Member Organizations to support states in their continued efforts towards advancing gender equality on the continent.



### About the Maputo Protocol :

- The protocol to the African Charter on Human and People's Rights of Women in Africa, known as Maputo Protocol is an international human rights instrument established by the African Union.

### Adoption :

- It was adopted by the African Union in Maputo, Mozambique in 2003 in the form of a protocol to the African Charter on Human and People's Rights.
- It went into effect in 2005.

#### **Ratification :**

- Of the 55 member states, 44 have ratified or acceded to the protocol on gender equality, becoming one of the most ratified instruments in the AU.
- Full domestication of the protocol in many of the states has been slow or ineffective.
- Some states of the Africa are yet to ratify or accede to the protocol.

#### **Mandate :**

- It guarantees comprehensive rights to women including the right to take part in the political process, to social and political equality with men, improved autonomy in their reproductive health decisions and end-to-end female genital mutilation.

#### **African Women's Rights under Maputo Protocol :**

- The Protocol provides extensive rights to African Women and Girls and includes progressive provisions on:
  - Harmful traditional practices e.g. child marriage and female genital mutilation (FGM).
  - Reproductive health and rights.
  - Roles in political processes.
  - Economic empowerment.
  - Ending violence against women.
- Findings of the Report:

#### **Regarding Ratification :**

- The protocol has a target of universal ratification of African States by However, with just five years to the target there are still 12 countries are yet to ratify.
- Maputo Protocol is considered as the fastest human rights treaty to enter into force, if ratification and entry into force are considered.



कामयाबी हाथों की लकीरों में नहीं

माथे के पसीने में होती है!!

## Chapter 10

# Yojana

## Sahakar se Samridhi : From Planning to Realisation

- For harnessing cooperation for prosperity and progress, the Ministry of Cooperation (MoC) was established as a separate administrative body in July 2021, with a call for “Sahakar se Samridhi” (prosperity through cooperation). By embracing the cooperative-led movement, India has the potential to promote balanced regional development and empower local entrepreneurs to expand globally.

### Overview of the cooperative movement

- India is home to 8.54 lakh cooperatives present in 98% of the villages and has 29 crore members. 80% of these cooperatives are non-credit cooperatives and 20% are credit cooperatives.
- The first recognition of the cooperative movement started in 1904 with the promulgation of the Co-operative Credit Societies Act.
- After the Maclagan Committee Report on Cooperatives (1914-15), the cooperative movement underwent a transition from primarily focusing on providing relief to becoming a movement with the aim of improving socio-economic welfare.
- Post-independence, the cooperative movement received due recognition in the perspective plans of the Government of India.



### Principles of Cooperation

- Addressing hurdles and challenges through appropriate policies and effective government interventions is necessary to unleash the full potential of cooperatives. This can be achieved by utilizing the 4 Ps and 4 Es framework.

### Government commitments to Indian cooperative movements

- Cooperative ‘SQUAD’: The government has formulated a plan which prioritises and explores new emerging areas for cooperatives through the ‘SQUAD’ framework.
- National cooperation policy: Suresh Prabhu committee has been set up to formulate an all-inclusive policy for the uniform cooperative movement.

### Strengthening Primary Agriculture Credit Societies (PACS)

- Model By-laws for PACS: 22 states have adopted model-by-laws to enhance operational efficiency, transparency, and responsibility towards collective community development.
- PACS as Common Service Centres (CSC): PACS can register as CSCs to diversify their business for self-sustenance.
- Integrating PACS with FPOs: This will help PACS to extend their scope of activities and take up high-income enterprises like beekeeping, mushroom cultivation, etc.
- PACS in the Oil and Energy Business: PACS can avail licenses for petrol and diesel dealerships and LPG distributorships, and they will also be engaged in the implementation of various renewable energy schemes.
- National Cooperative University: It will help to establish a comprehensive, integrated, and standardized structure of cooperative teaching and training and meet the demand for capacity building of the existing workforce.
- Cooperative database: The Ministry of Cooperation is developing a comprehensive cooperative database to capture authentic and updated data on cooperatives of all sectors to support policy formulation.



## Other initiatives

- Computerization of 63,000 functional primary agricultural credit societies.
- Cooperative societies as registered buyers and sellers on the Government e-market platform (GeM).
- Setting up the National Export Cooperative Society to promote exports from cooperatives.
- Establishing a national organics cooperative society to promote organic products.
- Setting up the National Export Seed Cooperative Society to promote production preservation certification and distribution of quality seeds.
- Creating 2 lakh new multi-purpose PACs to cover all 2.54 lakh panchayats.
- Challenges in ensuring smooth and sustainable growth of the cooperative sector:
  - Addressing regional and sectoral imbalances in cooperative expansion.
  - Navigating complex regulatory landscape across states.
  - Enhancing governance, leadership, and operational systems and ensuring professional management of cooperatives.
  - Establishing effective dialogue and coordination among central, regional, and state registrars of co-operatives.
  - Strengthening basic infrastructure and fostering the formation and promotion of new cooperative societies and social cooperatives.

## Conclusion

- The contribution of cooperatives will have a multiplier effect on the goal of achieving a five trillion dollar Indian economy while boosting farmers' income.
- The true fulfilment of the Sahakar se Samridhhi vision hinges on community business units effectively tapping into the inherent potential of people's collective action and aligning with the core philosophy of the cooperative-based model for socio-economic progress.

## Empowering Agriculture Cooperatives through Digitisation

- Cooperative credit institutions have long been instrumental in driving social and economic development in India. These institutions, particularly in rural areas, play a crucial role in credit mobilization for agricultural production.

## About Cooperative Credit Institutions

- The short-term rural cooperative credit structure (STCCS) is a 3 tier structure which comprises State Cooperative Banks (StBs), District Central Cooperative Banks (DCCBs) and Primary Agriculture Credit Societies (PACs) at the village level.
- They are regulated by the Reserve Bank of India (RBI) and supervised by the National Bank for Agriculture and Rural Development (NABARD).
- They provide essential credit mobilization in agriculture production but also serve as catalysts for self-help, grassroots community participation, and social control over resource allocation and mobilization.



## Challenges Confronting Cooperative Credit Institutions

- Face stiff competition from commercial banks and microfinance institutions in the rural credit sphere.
- Inability to adopt cutting-edge technologies.
- Reliance on conventional services (short-term loans) rather than tapping into services such as financial advisory and marketing.
- Lack of innovation.

## Digitization of STCCS

- Centralized Online Real-time Exchange (CORE) based Banking Solutions (CBS) have automated State Cooperative Banks (StBs) and District Central Cooperative Banks (DCCBs), improving regulatory mechanisms

and enabling anytime, anywhere banking.

- Efficiency and governance across cooperative banks can be improved by adopting standardized technology-driven office management systems.

### Technology Adoption for PACS

- While DCCBs require the digitization of business processes, PACS need to be computerized as a fundamental step towards efficiency.
- The computerization of PACS aims to enhance service delivery, digitize operations, and integrate them with DCCBs and StBs.
- However, challenges such as inadequate rural infrastructure, power supply, internet connectivity, and computer skills must be addressed.
- Technology Adoption for Customer Interface, Service Delivery, and Decision Making:
- Need to adopt technologies such as mobile banking, internet banking, drones for field monitoring, and blockchain for cybersecurity and transparency.
- Need for collaborative partnerships with fintech firms to facilitate customer acquisition, credit pro-filing, advisory services, financial products, and development of user-friendly digital interfaces.

## Developing Pathways for Non-Credit Cooperatives

- With approximately 8.5 lakh cooperative societies and a membership of 29 crore people, cooperatives have played a significant role in the Indian economy.
- However, the growth and evolution of cooperatives vary across states due to diverse focus areas adopted by state administrative machinery.

### Structure of Cooperatives in India

- Cooperatives operate under the Cooperative Society Act 1912, which includes the Cooperative Thrift Society Act and the Multi-State Cooperative Societies Act 2002.

**There are two types of cooperative structures :**

- State Cooperative Societies (come under state government)
- Multi-State Cooperative Societies (come under the central government)



### Impact of Globalization on Cooperatives

- Amul, HOPCOMS, and IFFCO have been success stories despite the fear that globalization would affect the growth of cooperatives.
- Their success can be attributed to
  - well-functioning end-to-end supply integration chain
  - diversification of products and marketing
  - technological advancements
  - professional management
- These success stories highlight the potential of cooperatives, especially in the food processing sector, to contribute to India's economy.
- Non-credit cooperatives in India require a tailored approach due to their diversity. Recognizing this, it was decided to establish a national-level cooperative society for agriculture products.

### Convergence

- Cooperatives in India can register as MSMEs on the Udyam Portal
- Cluster-based programs provide funding for common facilities, processing centers, and skill development.
- Udyam certification can be considered as the primary document to access program benefits.
- This streamlined approach aligns with the "Whole of the Government Approach" and grants cooperatives MSME status for priority sector lending.

## Awareness, Training, and Mentoring

- Creating awareness about cooperatives among students as a viable career option.
- Capacity building through training programs and skill development to cooperative staff.
- Mentorship programs can foster collaboration between larger cooperatives and state-level cooperatives engaged in similar activities.
- Promoting knowledge exchange and creative cooperation.

### Government of India has announced formation of -

- National level Multistate Cooperative Seed Society, which would act as an apex organization for production, procurement, processing, branding, labeling, packaging, storage, marketing and distribution of quality seeds; and strategic research and development.
- A Multi State Cooperative Organic Society to act as an umbrella organization for aggregation, certification, testing, procurement, storage, processing, branding, labeling, packaging, logistic facilities, and marketing of organic products.

### Technology and Digitization :

- Upgrading technology, production, and business models while embracing digitization are vital for cooperatives to remain competitive.
- Government support, including subsidies and credit facilities, can assist cooperatives in this transition.
- Creating physical infrastructure and linking cooperatives with relevant cluster schemes.

## Fishery Cooperatives

- The fisheries sector in India is diverse, with sub-sectors like marine, inland, and brackish water, besides cold water and ornamental fisheries.
- The sector has immense economic potential in India, with a coastline of over 8,000 km, an exclusive economic zone of over 2 million square km, and extensive freshwater bodies.

### Role of Fishery Cooperatives

- Fishery cooperatives can provide livelihood security, nutritional security, and social security to vulnerable groups in society.
- Around 4 million people are economically benefited through primary fishery cooperatives in India.
- The role of fishery cooperatives must be considered at every level in the changed economic scenario, and they should be supported with funds to develop infrastructures and a progressive supply and value chain for sustainability.



### Government of India's Thrust

- Atmanirbhar Bharat Abhiyaan: The Prime Minister announced a Rs 20 lakh crore economic package to create jobs in the fisheries sector.
- The Pradhan Mantri Matsya Sampada Yojana (PMMSY): Launched in 2019-20 with a total project outlay of Rs 20,050 crore to boost India's economy through the fisheries sector. Know more about the Pradhan Mantri Matsya Sampada Yojana in the link.
- Fisheries & Aquaculture Infrastructure Development Fund (FIDF): A dedicated fund of Rs 7,522 crore was established to develop fisheries and aquaculture infrastructure.
- Blue Revolution: Introduced in 2014, it promotes fish production and infrastructure development in the fisheries sector. Read more about the blue revolution in the link.

### Fishery Cooperative Movement in India

- The fishery cooperative movement in India began as early as 1913 when the first fishermen's society was organised under the name of the 'Karla Machhimar Cooperative Society' in Maharashtra.

### National Database of Fisheries Cooperatives :

- A decision has been taken to organise fishery cooperatives covering each panchayat of the country to reach a figure of 2 lakhs in the coming five years.
- The National Fisheries Development Board (NFDB) and FISHCOPFED have been assigned to speed up the work in coordination with the concerned State/UT authorities.
- The database can help identify the gaps in the sector, and efforts will be made to bridge the gaps.

#### **Fishery Success Stories :**

- Fishery cooperatives have received priority attention and real focus since the establishment of the Ministry of Cooperation in 2021.
- Matsyafed-Kerala: Established in 1984, this state-level federation excels in fish sales, exports, and re-tail outlets, and operates its own mat-making and processing plants.
- Gujarat Fisheries Central Cooperative Association (GFCCA): Registered in 1956, GFCCA operates diesel outlets for fishing boats and successful fish retail outlets in Delhi.
- With the establishment of the Ministry of Cooperation, fisheries cooperatives have received priority attention and real focus.

### **One Pacs One Drone**

- A drone is an unmanned aerial vehicle (UAV) that operates without a human pilot, crew, or passengers onboard and can be operated remotely or autonomously.
- The Indian government's initiatives to promote the manufacturing of drones and strengthen Primary Agricultural Credit Societies (PACS) are paving the way for a brighter future for the rural economy.



#### **Indian Government's Initiatives :**

##### **Strengthening Primary Agricultural Credit Societies (PACS):**

- Financial assistance and training are being provided to strengthen PACS.
- This will enhance services to farmers and promote rural development.

##### **Liberalised Drone Rules 2021 :**

- The Ministry of Civil Aviation announced the liberalised Drone Rules 2021.
- The rules aim to make India a global drone hub by 2030.
- Easier and faster approvals for drone operations in India.
- Creation of a drone promotion council to facilitate a regulatory environment for the drone industry.

##### **Production-Linked Incentive (PLI) Scheme :**

- The Central Government approved a PLI scheme worth Rs 120 crore for drones and components.
- Aims to boost drone manufacturing in India and reduce import dependence.
- Strengthening Cooperative Movement:
- The government is giving increasing focus to strengthen the cooperative movement nationwide.

### **Drone in Agriculture**

- Low yield, soil erosion, lack of irrigation facilities, inefficient use of inputs, unscientific use of fertilizers, lack of post-harvest management, and limited access to financial services.
- Digital tech-based agriculture can unlock a value of \$65 billion by 2025, with a significant impact on GDP.
- Drones offer solutions such as land mapping, agrochemical spraying, seeding, crop yield assessment, and drone-based analytics.
- Benefits of agrochemical spraying with drones: Cost savings of 25-90% on inputs, 90% reduction in skin exposure, and improved crop yield.
- Precision agriculture and the reduction of land disputes can be achieved through drone-based land mapping.
- Low levels of farm mechanization in India: Northern states have adoption rates of 70-80%, but still lower compared to countries like China, Brazil, and the United States. Drones can help increase productivity and minimize input costs.

- Drones can effectively spray pesticides, fungicides, and liquid fertilizers to combat pest infestations and their impact on crops.
- Drones offer cost reduction and optimization of input use, with various applications like surveying, seeding, spraying, and pollination.

### One PACS One Drone : Action Required & Benefits

- Multipurpose PACS establishment nationwide with one drone each
- Grant of 75% of agricultural drone cost for PACS, similar to FPOs
- Drones can transform Indian agriculture, increase GDP by 1-1.5%
- Create 5 lakh new jobs and usher in a digital era of prosperity
- Eligible rural entrepreneurs with pilot licenses can fly agricultural drones
- Guidelines provide a net annual profit range of Rs 5 to 6 lakhs for PACS members.

## Regenerative Agri-Supply Chain management

- Agriculture Supply Chain Management (ASCM) is concerned with the effective flow of agricultural commodities from farm to fork via logistics flows, transporters, shops, procurement, warehousing, inventory management, and processing.
- Factors such as climate change, supply chain disruptions, market volatility create challenges for supply chain.
- The transition to smart regenerative supply chain relieves agriculture from social and environmental pressures.

### Importance of Supply Chain Management

- It provides food security and long-term agricultural development by connecting stakeholders.
- It helps farmers in procuring, marketing, and distributing commodities.
- It necessitates the proper allocation of resources to deal with storage issues, transportation issues, and inventory management.



### Role of Cooperatives in Agriculture Supply Chain

- Cooperatives help the agricultural supply chain by offering technical, financial, and operational support services.
- Cooperatives like Farmer Producer Organizations (FPOs) are responsible for business activities such as bulk purchasing of agricultural inputs, and facilitating credit requirements.
- They serve as a platform for information transmission, marketing, transportation, and distribution of commodities.
- They help to get quality produce by supplying agri input (seeds, fertilisers, etc.) and extending credit facilities. Their focus has shifted to quality produce in addition to marketing and processing.
- Cooperative marketing societies have progressed towards better storage facilities, efficient management of resources, timely payment to farmers and minimisation of waste.
- They have transformed to regenerative supply chains by adopting sustainable practices.

### Primary Agricultural Credit Society (PACS) Storage & Supply Chain Management

- Multi-service centres: Primary Agricultural Credit Society (PACS) act as multi-service centres that assist the farmers in procuring and marketing of agricultural produce along with meeting the credit requirements.
- Quality inputs for farmers: The storage of agriculture implements, and agri-inputs by PACS can help ensure availability of quality inputs for farmers.
- Common service centers: PACS are functioning as common service centres by facilitating the delivery of services to villages.

### Initiatives taken

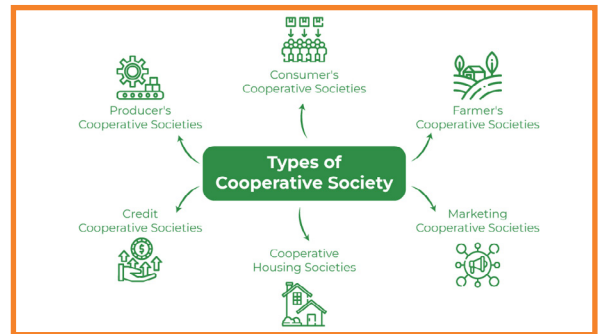
- The Ministry of Cooperation has set up of three sector-specific national level cooperative societies:
- Seed societies: helps with seed production, processing, storage and distribution
- Export societies: helps in procurement, storage, processing, marketing, branding, packaging
- Organic societies: offers certification and standardization to the market via laboratory networks.

## Cooperative Entrepreneurships for Economic Development

- India has a long history of both entrepreneurship and cooperative movements. In India, the cooperative movement has always used financial and social resources to promote inclusion and community growth.

### Cooperative Entrepreneurship

- Cooperative entrepreneurship is a type of collective or joint entrepreneurship. A “cooperative entrepreneur” is a social leader with the vision to develop effective plans for running businesses democratically rather than just for one’s benefit. Democratic governance based on one person, one vote, and equality are the pillars of governance of cooperatives.



### Focus and Importance of Cooperative Entrepreneurship

- Focuses on quality employment generation.
- Wealth creation.
- Optimal use of available resources at the community level.
- Potential to deliver goods and services at the grassroots.
- Social bonding and cohesion.
- Control and dignity of the workplace.

#### Current Situation :

- In India, cooperatives account for:
  - 19% of our agricultural financing
  - 35% of fertiliser distribution and 30% of fertiliser production
  - 40% of sugar production
  - 13% of wheat procurement and 20% of paddy procurement

#### Growth Potential :

- Finding opportunities for the formation of cooperatives can be done effectively through the solving of community problems and the observation of sectoral trends.
- There is a substantial opportunity to establish and grow cooperatives in developing economic sectors such as manufacturing, services, renewable energy, tourism, transportation, handloom, handi-craft, health, student/campus consumer cooperatives, etc.
- There is tremendous potential in the social welfare sector that is usually not economically viable for other types of commercial enterprises.

#### Challenges :

- Difficulty in gaining access to capital.
- There are often legal restrictions on the range of operations or membership.
- The operations and processes are expensive and time-consuming due to democratic decision-making, etc.

## Chapter 11

# Kurukshetra

## Millets: Future of Sustainable Agriculture

- Millets are a type of small-seeded grass that is also known as nutri-cereals or dry-land cereals. They have the potential to improve nutritional balance, reduce dependence on water-intensive crops like rice, and ensure food security for all.

### Overview of millet cultivation in India

- India is the world's leading producer of millet, accounting for 19% of global production and 20% of the world's millet-growing area.
- The three most popular varieties of millet produced in India are pearl millet (bajra), sorghum (jowar), and finger millet (ragi).
- The top 10 millet-producing states in India are Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, and Uttarakhand. These 10 states account for 98% of millet production in India.
- Of these states, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh account for 83% share of millet production.
- The recent drive for the promotion of millet is due to nutritional values, environment-friendly crop-ping patterns, and its remunerative potential.



### Nutritional value of millets

- Most millets have a high content of proteins, fibres, vitamins, and essential minerals. They are also an attractive gluten-free substitute for cereals and have the benefits of low absorption of fats and low glycemic indices. This makes them a good source of nutrition for people of all ages.

### Environmental Sustainability

- **Adaptability :** Millets are versatile crops that can be grown in a variety of conditions. They are drought-resistant and can tolerate a wide range of temperatures.
- **Mixed cropping:** Millets can be grown in mixed cropping systems, which helps to improve soil fertility and reduce pest pressure.
- **Irrigation:** Millets require less irrigation than other cereals, such as rice and wheat. This makes them a good choice for farmers in areas with limited water resources. Eg: Paddy requires a temperature above 25 degrees with an annual rainfall of above 100 cm whereas jowar can be grown even in areas with less than 20 cm of annual rainfall.
- **Cropping duration:** Millets have a shorter cropping duration than other cereals thereby making them ideal for adopting crop rotation.

### Initiatives for promoting millet production and consumption

#### Production :

- Millets are supported under the Minimum Support Price scheme of the government which ensures that farmers receive a fair price for their crops and reduces risks in growing millet.
- Return over cost for the crops covered under MSP is higher for millets when compared to other crops like paddy.
- The total production of millets in India has increased from 137 lakh tons in 2018-19 to 160 lakh tons in 2021-22. The total area under cultivation has also increased during this period.

## Consumption

- The government of India is promoting the consumption of millet through various programs, such as the Targeted Public Distribution System (TPDS), Pradhan Mantri Poshan Shakti Nirman (PM-POSHAN), In-tegrated Child Development Scheme (ICDS), One District One Product (ODOP) scheme and Sub-mission on Nutri-Cereals under National Food Security Mission.
- The Indian Institute of Millets Research (IIMR) will be established in Hyderabad to conduct research on millets and to share best practices with other countries.
- Awareness campaigns like publishing commemorative coins and stamps on millet, nutritional pro-grammes by the Food Corporation of India, etc. are being conducted to raise awareness about the benefits of millet to consumers.

## Technologies for Sustainable Agriculture Development

- Agriculture is the backbone of the Indian economy employing 42.1% of the Indian population. However, traditional agricultural practices in India are unsustainable and negatively affect the environment and human health.
- Sustainable agricultural practices (which focus on soil, environment and community's long-term health) are required to ensure the long-term viability of agriculture in India.

## Role of Technology in Developing Sustainable Agriculture

- Technology can help in reducing the use of fertilizers and pesticides, improves water management, and increases yields, benefits soil, bio-conservation and carbon sequestration.
- Precision Farming: It involves sensors, GPS mapping and data analytics to monitor and optimize crop performance.
- Agroforestry: Agroforestry is a land-use integrated management system that combines trees and shrubs with crops and livestock to create a more sustainable and productive farming system.
- Vertical Farming: It cultivates crops in stacked controlled conditions.
- Hydroponics: It involves growing plants in nutrient-rich water without soil. This approach can allow for year-round crop production.
- Renewable Energy: Renewable energy can be used to power farming operations. This approach can reduce greenhouse gas emissions and dependence on fossil fuels.
- Robotics and Automation: These can help reduce labour costs, improve crop yields.



## Gaps in Adopting Sustainable Agriculture

- Lack of Awareness and Knowledge: Many farmers do not know the benefits of sustainable agriculture or implement it effectively.
- Limited Access to Finance: Sustainable agriculture requires significant investments in infrastructure and technology. This is difficult for tiny and marginal farmers.
- Inadequate Policy and Regulatory Framework: Lack of support through policy and the regulatory framework.
- For example, the National Mission for Sustainable Agriculture receives only 0.8% of the Ministry of Agriculture and Farmers' Welfare (MOAFW) budget.
- Limited Research and Development: There is a need for more research and development in sustainable agriculture practices that are appropriate for the Indian context.
- Lack of Infrastructure and Technical Support: Inadequate infrastructure, such as rural roads, storage facilities, and cold chains, is a significant challenge for the agriculture sector in India.
- Low Productivity: Agriculture in India is characterized by low productivity.
- Fragmented Landholdings: With the average landholding size being small, it becomes difficult to adopt modern farming techniques.
- Lack of Market Access: The lack of access to markets is a significant challenge for farmers in India.
- Climate Change: Climate change poses significant challenges in terms of water availability, pest and disease management, and crop yields.



- The changing weather patterns, including erratic rainfall and rising temperatures, affect crop productivity and increase farmers' vulnerability.

#### Initiatives :

- National Mission for Sustainable Agriculture (NMSA)
- Pradhan Mantri Krishi Sinchayee Yojana
- Integrated Watershed Management Programme
- Initiatives to promote sustainable agriculture practices:
- National Food Security Mission,
- Pradhan Mantri Fasal Bima Yojana
- Soil Health Card Scheme

#### Agri Tech Start-up Case Studies :

- AgriApp Technologies: It works to make the farmers ready for high-efficiency technology-enabled agriculture production and marketing.
- Khetee promotes agroecological farming through the agroforestry model.
- Pudhuvai Green Gas: It produces organic waste agro-raw materials and bio-fertilisers.

## Climate Sustainable Agriculture

- Agriculture faces formidable challenges due to climate change and population growth. There is a need for sustainable agriculture to address food security and environmental concerns.

### Challenges in Agriculture

- Food production needs to increase by 70% by 2050 for global food security.
- Rising temperatures decrease crop yields: maize (-7.4%), wheat (-6.0%), rice (-6.2%), soybeans (-3.1%).
- Climate change causes annual agriculture losses of US\$ 9-10 billion, with potential cereal grain re-ductions of 20-40%.
- Agriculture, forestry, and land-use changes contribute 25% of human-induced greenhouse gas emissions.



### Climate-Smart Agriculture (CSA)

- Climate-Smart Agriculture (CSA) aims to achieve sustainable agriculture by addressing climate change and environmental concerns.
- CSA focuses on three main outcomes: increased productivity, enhanced resilience, and reduced emissions.
- Breeding resilient crop varieties is crucial to combat climate change impacts on agriculture.
- Climate-smart crops should tackle various challenges like pests, frosts, and extreme weather events.
- Efficient production and distribution are necessary to make climate-smart crop varieties accessible to farmers.

**To effectively implement a climate-smart agriculture strategy, there are some components that are recommended by FAO :**

- Develop climate-resistant crop varieties and involve farmers in decision-making.
- Diversify crops and organisms to promote farm resilience and profitability.
- Holistically combat climate change effects on pests, diseases, and weeds.
- Prioritize water resource management to address increasing water scarcity.
- Protect soil through integrated landscape planning and sustainable management practices.
- Enhance productivity and reduce emissions through appropriate machinery and precision farming.

### Initiatives by the Government of India

- National Innovation on Climate Resilient Agriculture (NICRA): Launched in 2011 with an outlay of Rs. 350 crore with the aim to enhance the resilience of Indian agriculture to climate change. Focuses on research and development of climate-resilient technologies and practices.
- Sub-Mission on Agro-forestry: Launched in 2016-17 with the objective of planting trees on farm bunds and

aims to bring sustainability in agriculture and mitigate the impact of climate change.

- **National Livestock Mission:** Launched in 2014-15 with a focus on livestock development through sustainable approach and aims to protect the natural environment, conserve animal biodiversity, and ensure farmers' livelihood. Know more about the National Livestock Mission in the link.
- **National Water Mission (NWM):** Launched to ensure Integrated Water Resource Management (IWRM) for conserving water sources and minimizing wastage. Aims to optimize Water Use Efficiency (WUE) by 20% including the agriculture sector. Read more about the National Water Mission in the link.

### Other Initiatives

- **Biotech-KISAN Hubs:** Established under the National Biotechnology Development Strategy 2015-2020. Aims to provide farmers with access to modern agricultural technologies and practices.
- **Pradhan Mantri Fasal Bima Yojana (PMFBY):** Launched in 2016 to provide insurance coverage and financial support to farmers in case of crop loss due to natural calamities. Aims to promote sustainable agriculture and reduce the burden of risk on farmers. Know more about the Pradhan Mantri Fasal Bima Yojana in the link.

## Contribution of Women to Sustainable Agriculture Development

- The agriculture sector in India employs 45.6 percent of the workforce and contributes 17.32 percent to gross value added.
- Recognizing the importance of gender dividend (contribution of women) in agriculture is crucial as it could boost agri productivity by 2.5% and increase farm yields by 20 to 30 percent.

### The Importance of Women in Agriculture and Allied Services

- With the 'feminisation of agriculture,' women's roles have been growing as they work as paid workers, unpaid workers (on family owned land) and as managers in agricultural production and post harvest operations.
- Women also play a crucial role in land and water management, collecting water, firewood, and fodder, which are essential for agriculture.
- They undertake a wide range of activities related to livestock production, vegetable cultivation, fish processing, dairy production, etc.



### Challenges Faced by Rural Women in Agriculture

- **Lack of recognition:** Women's roles as primary producers are often overlooked, and are treated merely as consumers of social services.
- This perpetuates a cycle of drudgery, limited skill development, and exclusion from decision-making processes.
- **Skill development:** Limited avenues for skill development lead to women being relegated to low-skilled, time-consuming, and monotonous farm activities.
- The increasing mechanization of agriculture threatens their participation unless they are provided with opportunities to acquire new skills, such as operating machinery.
- **Land ownership and records:** Women own only 13.9 percent of operational holdings, reflecting a gender disparity in land ownership and prevailing land fragmentation practices.
- Though the Hindu Succession Act, 2005 allows daughters equal rights in ancestral property, the same is not true for agricultural land.
- **Poor credit access:** Lack of asset ownership makes credit facilities inaccessible to women.
- Rural financial institutions hesitate to serve female clients due to stringent requirements and their limited borrowing experience.
- **Inequality in market access:** Gender discrimination restricts women's mobility, limiting their access to marketplaces and hindering economic opportunities.

### Government Initiatives to empower female farmers

- The SHG-Bank linkage program by NABARD has relaxed collateral requirements for availing loan
- The Mahila Kisan Sashaktikaran Pariyojana

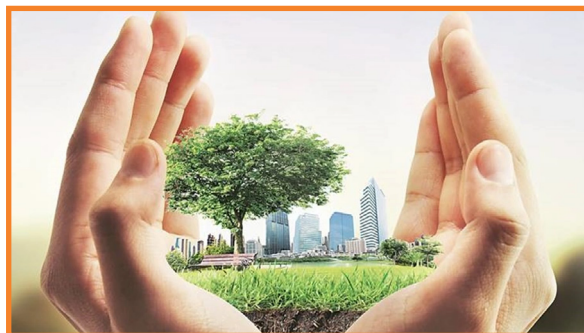
- Encouraging women's leadership roles in farmer producer organizations
- Skill development programs under the Pradhan Mantri Kaushal Vikas Yojana
- Financial inclusion schemes like Pradhan Mantri Jan Dhan Yojana and Pradhan Mantri Mudra Yojana

## Paving the Way for Sustainable Growth

- Agriculture remains a vital component of India's economy, supporting over half of the workforce. Although its contribution to GDP (64.64% in 1950-51 to 17.92% in 2021-22) and employment have declined, it remains significant compared to the global average.

### Trends in Agriculture Production

- The major commercial crops in India are cotton, jute, tea, rubber, sugarcane, oil seeds, etc.
- Among commercial crops, potatoes witness the highest annual compound growth rate of 5.0 percent followed by rubber which is 3.97% and cotton which is 3.33% from 2020-21 to 2021-22.



### Trends in Horticulture Production

- Over the past two decades, the horticulture sector in India has seen remarkable growth.
- Horticulture production reached 342.33 million tonnes in 2021-22, up from 145.79 million tonnes in 2001-02.
- The production of horticulture crops has exceeded foodgrain production since 2012-13.
- India is now the second-largest global producer of fruits and vegetables, trailing only China.
- Additionally, it holds the top positions in spice production, consumption, and exportation.

### Trends in Livestock Production

- Livestock plays a crucial role accounting for nearly 30% of India's agriculture and allied services output.
- India has been the world's largest milk producer for the past two decades.
- The poultry sector has also witnessed remarkable growth, with egg production showcasing an impressive annual compound growth rate of 6.18%.
- The aquaculture and fishery sector contribute 7% to the overall output, with India ranking second globally in fish production at 7.58%.
- The Pradhan Mantri Matsya Sampada Yojana promotes sustainable development in the fishery sector to bring about the blue revolution.

### Trends in Agricultural Trade

- India's export portfolio encompasses a diverse range of products such as rice, pulses, fruits, vegetables, tea, coffee, tobacco, spices, sugar and molasses, cashew, raw cotton, fish meat, and processed food.
- Notably, agriculture exports have been growing steadily at a rate of 14.27% per year in 2022-23.
- India has emerged as the 7th largest exporter of agricultural products globally.
- India's agriculture and allied products find major export markets in countries such as Bangladesh, China, Indonesia, Malaysia, Iran, Japan, Nepal, Pakistan, Netherlands, Thailand, UK, USA, and UAE.
- Despite its immense agricultural potential, India's agriculture exports currently account for 2.5% of global agri trade and less than 1.7% of world total exports.
- To enhance its agricultural export share, the Mission for Integrated Development of Horticulture (MIDH) was launched.
- Additionally, to promote horticulture products, several centres for perishable cargoes and post-harvest storage facilities have been established with assistance from APEDA.

## Dryland Farming

- Dryland farming is a challenging practice that requires understanding local climate and soil conditions, selecting suitable crops, and utilizing appropriate technologies. This article explores the significance of dryland farming in India, the constraints faced, and the potential for sustainable food security.



## Dryland Farming

- Differentiating Dry Farming, Dryland Farming, and Rainfed Farming:
- Dry farming: Practiced in areas with an annual rainfall of less than 750 mm and a crop growing season under 200 days.
- Dryland farming : Cultivation in regions with rainfall ranging from 750 mm to 1150 mm, including semi-arid areas.
- Rainfed farming: Crop cultivation without irrigation in areas receiving rainfall around 1150 mm, mainly in humid and sub-humid regions.



## Major Crops in Dryland Agriculture

- Millets, oilseeds, pulses, maize, cereals, and cotton are important crops.
- Millets are drought-resistant, climate-resilient, and eco-friendly crops.
- Oilseeds and pulses play a significant role in rainfed regions, contributing to vegetable oil production and soil health.

### Supporting Schemes :

- Per Drop More Crop, Soil Health Card, and Paramparagat Krishi Vikas Yojana contribute to dryland agriculture improvement.

### Importance of Dryland Farming :

- Diverse Agro-climatic Zones: India's unique geographical location results in varied climatic conditions and cropping patterns across the country.
- Addressing Climate Change: Dryland farming helps address climate change and ensures sustainable food security.

### Challenges Associated with Dryland Farming -

- Rainfall Dependency: Dryland farming relies on natural rainfall, making it vulnerable to erratic and uncertain rainfall patterns.
- Soil and Nutrient Constraints: Dryland areas often have poor or degraded soils with low water-holding capacities and nutrient deficiencies.
- Vulnerability to Drought: Dryland areas are susceptible to drought and declining groundwater levels.
- Small Land Holdings: Dryland farming is challenging due to fragmented and small land holdings.

## Strategies for Sustainable Dryland Farming

- Integrated Farming: Dryland farmers can increase productivity by adopting integrated farming models with multiple crops.
- Crop Selection: Maximizing productivity in dryland conditions requires selecting suitable crops adapted to the environment.
- Technology Adoption: Utilizing drip irrigation, water harvesting, and precision farming improves water-use efficiency and yields.
- Soil Conservation: Mitigate erosion and retain soil moisture through practices like contour ploughing, terracing, and mulching.
- Capacity Building: Empower farmers through training and knowledge transfer on dryland farming techniques.
- Market Support: Strengthen market infrastructure and value chains to enhance profitability and market access.
- Research and Development: Continued efforts are needed to develop crop varieties and technologies for dryland farming.

## Organic Farming : Status and potential

- The National Standards of Organic Production (NSOP) defines organic agriculture as a system of farm design and management to create an ecosystem that can achieve sustainable productivity without the use of artificial off-farm inputs such as chemical fertilisers and pesticides. It is a climate-friendly practice that reduces the use of synthetics in farming and promotes low external input usage, recycling, and re-use.

## Overview of organic farming

- According to the 2021 FiBL survey, organic farming is practised in 187 countries, with Australia (35.69 m hectares), Argentina (3.63 m hectares), and Spain (2.35 m hectares) having the most organic agricultural land.
- India is home to 30% of the world's organic producers but only 2% of the country's total net sown area is under organic farming.



- Madhya Pradesh leads in organic agricultural land in India, with 0.76 million hectares under organic cultivation, accounting for 27% of the total organic farming area.
- Madhya Pradesh, Rajasthan, and Maharashtra contribute to half of the area under organic farming in India.
- Sikkim stands as the first complete organic state in India, converting all of its cultivable lands under organic certification.



### Export of organic food from India

- Agricultural and Processed Food Products Export Development Authority (APEDA) is the nodal agency that promotes the export of agricultural and processed food products, including organic products.
- Key export destinations for Indian organic products include the USA, the European Union, Canada, the UK, Turkey, Australia, Switzerland, Ecuador, and Japan.
- India's primary organic product exports consist of soya meal (61%), oilseeds (12.58%), cereals and millets (12.71%), sugar (4.77%), and plantation crops (2.16%).

#### Government initiatives to promote organic farming :

- The Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development for Northeastern Region offer comprehensive support to farmers, covering production, processing, certification, marketing, and post-harvest management.

### Paramparagat Krishi Vikas Yojana (PKVY)

- Under PKVY, farmers receive Rs. 50,000/ha for 3 years to establish Farmer Producer Organizations (FPOs), obtain organic inputs, and undergo training, guidance, and certification.
- Additionally, Rs. 20 lakh/cluster of 1000 ha is provided for value addition and infrastructure development.
- Since 2015-16, 11.85 lakh ha of land has been brought under organic farming, with a target of another 6 lakh hectares by 2026.
- Mission Organic Value Chain Development for the Northeastern Region (MOVCD-NER)
- MOVCD-NER provides farmers with Rs. 46,575 per hectare for 3 years to establish FPOs, obtain organic inputs, and undergo training, guidance, and certification.
- Additionally, need-based assistance is also provided for establishing integrated processing units, collection and grading units, pack houses, and refrigerated vehicles.
- Since 2015-16, an area of 1.73 lakh hectares of land has been converted to organic farming through this mission.

### Organic certification scheme

- National Programme for Organic Production (NPOP) Certification System: It ensures compliance with organic standards by reviewing the entire production, processing, handling, storage, and transport through an independent organization.
- The Participatory Guarantee System, under the Ministry of Agriculture and Farmers' Welfare, certifies organic products, guaranteeing that production adheres to laid-down quality standards.
- The dedicated web portal, [www.jaivikkheti.in](http://www.jaivikkheti.in), has been established to help farmers secure better prices for their organic produce.

## Sustainable Agriculture : Challenges and Way Forward

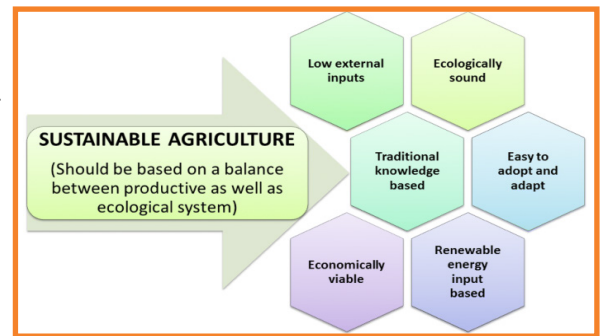
- Sustainable agriculture is a much-needed alternative to conventional input-intensive agriculture, which in the long term degrades the topsoil, results in declining groundwater levels, and reduces biodiversity.

### Three Pillars of Sustainable Agriculture

- Economy: This ensures the growth and profitability of the business for the farmers through the efficient use of viable resources.
- Society: This pillar ensures enough food for the world's growing population and fair employment and compensation opportunities for the local community.
- Environment: This pillar ensures the environment's protection through ecologically sound farming practices and less use of replenishable resources.

## Major Sustainable Agriculture Practices

- Crop Rotation and Crop Diversity: Monoculture degrades the soil and is susceptible to pests. Planting a variety of crops has many benefits, including improved pest control.
- Water and Energy-efficient Irrigation Techniques
- Reducing Tillage: No-till or reduced-till methods involve inserting seeds directly into undisturbed soil, which can reduce erosion and improve soil health.
- Integrating Livestock and Crops: Livestock can feed on the by-products of the farms and crops can receive abundantly rich natural fertiliser and manure.
- Adopting Agroforestry: Planting trees along with the crops conserves the soil cover and local water resources but also provides an additional source of income to the farmers.
- Grow the Cover Crops: By sowing cover crops off-season, farmers can protect their fields from soil erosion and soil degradation. This acts as green manure for the crops.
- Integrated Pest Management: It aims at long-term protection of crop cover on farms by mitigating pest attacks.



### Sustainable Agriculture in India -

- Most Sustainable Agriculture Practices (SAPs) are being adopted by less than five million (or four percent) of all Indian farmers.
- Crop rotation is the most popular in India, covering around 30 million hectares (Mha) of land and approximately 15 million farmers.
- Agroforestry, mainly popular among large cultivators, and rainwater harvesting have relatively high coverage of 25 Mha and 20-27 Mha, respectively.
- Organic farming currently covers only 2% of India's net sown area of 140 Mha.
- Natural farming is India's fastest-growing sustainable agricultural practice and has been adopted by around 800,000 farmers.
- Integrated pest management (IPM) has achieved a coverage area of 5 Mha after decades of sustained promotion.
- The impact and coverage of practices like floating farming, permaculture, etc. is insignificant.

## National Mission for Sustainable Agriculture

- Aims to enhance agricultural productivity, especially in rainfed areas focusing on integrated farm-ing, water use efficiency, soil health management, and synergising resource conservation.

### Main Objectives :

- To make agriculture more productive, sustainable, remunerative, and climate-resilient
- To adopt comprehensive soil health management practices
- To optimise utilisation of water resources through efficient water management to expand coverage for achieving 'More Crop Per Drop',
- To develop the capacity of farmers & stakeholders

## Major Components

- Rainfed Area Development (RAD): It develops an area-based approach for the conservation of natural resources, and regulates soil nutrients. Common resources are developed like a bank for grains, fodder, shredders for biomass, and a combined marketing initiative.
- On-Farm Water Management (OFWM): For optimum utilisation of water by promoting advanced on-farm water conservation equipment and technologies.
- Soil Health Management: It promotes sustainable practices that preserve the health of soil based on a specific location and the type of crops.

## Major Challenges in Sustainable Agriculture

- The budgetary allocation to NMSA is less. It is only 0.8 per cent of the Ministry of Agriculture and Farmers' Welfare's total budget.
- SAP are knowledge-intensive techniques which require knowledge exchange among the farmers.
- Capacity building among the different types of farmers.
- SAPs are labour-intensive and difficult to adopt by medium to large farmers.