



**VAJIRAM & RAVI**

(Institute for IAS Examination)

**#BestSellerForDecade**

# **Prelims Quick Revision 2022**



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on 5<sup>th</sup> May**

**Part - 1  
(June 21 - December 21)**

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## HISTORY AND CULTURE

### Baba Budangiri

- Karnataka Cabinet panel is to study Baba budangiri shrine issue.
- It is a **sacred pilgrimage spot in Chikmagalur** for both the Hindu and Muslim communities.
- It is renowned for its shrine to 17<sup>th</sup> century Sufi Saint, **Hazrat Dada Hayat Khalandar** (also known as Baba Budan).
- This famous mountain range is also known as Dattagiri Hill Range, as the shrine here is believed to be associated with Hindu God **Guru Dattatreya**, an incarnation of Lord Shiva.

### Demand Grows For Tulu To Be Included In The Eighth Schedule Of Constitution

- Tulu is a Dravidian language spoken mainly in two coastal districts **Dakshina Kannada** and **Udupi** of Karnataka and **Kasaragod district** of Kerala.
- **Robert Caldwell** in his book, **A Comparative Grammar of the Dravidian or South-Indian Family of Languages**, called Tulu “one of the most highly developed languages of the Dravidian family”.
- Tulu has a rich oral literature tradition with folk-song forms like **paddana**, and **traditional folk theatre yakshagana**.
- Kasaragod district is called ‘**Sapta Bhasha Samgama Bhumi** (the confluence of seven languages)’, and Tulu is among the seven (Other includes Malayalam, Beary, Konkani, Kannada, Urdu and Marathi).
- The **Yuelu Proclamation 2018, made by the UNESCO at Changsha**, China, focuses on “protection and promotion of linguistic diversity ‘.
- Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri are the **22 languages presently in the eighth schedule to the Constitution**.

### Flag Satyagraha Observed in Jabalpur, Madhya Pradesh

- Ministry of Culture on 18th June had organised a programme to observe Flag Satyagraha in Jabalpur.
- Also called the Jhanda Satyagraha, it was **held in Jabalpur and Nagpur in 1923**. The news of flag hoisting in Jabalpur spread like fire in the country and after that flags were hoisted at several places across the country.
- It was a campaign of peaceful civil disobedience that focused on exercising the right and freedom to hoist the nationalist flag and challenged the legitimacy of British Rule in India through the defiance of laws prohibiting the hoisting of nationalist flags and restricting civil freedoms.

### Copper Plate Inscriptions Found At Srisailam Temple

- 18 copper leaves have been found that could be dated back to somewhere between 14 and 16 centuries.
- Out of the six sets, four have inscriptions in Sanskrit and Nandi-Nāgarī script and the other two plates are in Telugu script.

#### Sohgaura Copper Plate Inscription

It is an Indian copper plate inscription written in Prakrit in the Brahmi script. It was discovered in Sohgaura, a

village on the banks of the Rapti River, about 20 km south-east of Gorakhpur, Uttar Pradesh. This is the oldest Indian copper plate inscription known.

### National Maritime Heritage Complex (NMHC) at Lothal, Gujarat

- Ministry of Ports, Shipping & Waterways and Ministry of Culture have signed an MoU for Cooperation in its Development.
- NMHC would be developed as an international tourist destination, where the maritime heritage of India from ancient to modern times would be showcased.
- The unique feature of NMHC is the recreation of ancient **Lothal city**, which is one of the prominent cities of the ancient Indus valley civilization dating to 2400 BC.

### Adarsh Smarak Scheme

- **Monuments at Nagarjunakonda, Buddhist remains at Salihundam, and Veerabhadra Temple at Lepakshi** are identified as 'Adarsh Smarak' in Andhra Pradesh for providing additional facilities.
- Launched in 2014 for providing improved visitor amenities, especially for the physically challenged, it is implemented by **Ministry of Culture**. The civic amenities are being augmented at the protected sites under the scheme.
- **Archaeological Survey of India** had identified **100 monuments as "Adarsh Smarak"** for upgradation.

#### Objectives of The Scheme

- To make monument visitor friendly.
- To upgrade/provide washrooms, drinking water, signages, cafeteria, and wi-fi facility.
- To provide interpretation and audio-video centers.
- To streamline wastewater and garbage disposal and a rainwater harvesting system.
- To make the monument accessible to differently-abled.

#### Veerabhadra Temple

- The Hindu temple is thought by many to have been built between 1530 and 1545 by **Virupanna and Veeranna**, two brothers who were Governors under the *Vijayanagara Empire* during the reign of **King Achyuta Deva Raya**.
- However, there is another school of thought that believes that the temple was built by **Sage Agastya**.
- The temple is dedicated to the Virabhadra, a **fierce incarnation of Lord Shiva**.
- Since most of the temple happens to be built on a tortoise-shaped rocky hill, the hill is referred to as Kurmasailam, meaning '**Tortoise Hill**' in Telugu.
- The **hanging pillar** is yet another attraction in the temple, meaning that the pillar is not supported by the ground.
- The temple includes a 24-feet-by-14-feet fresco of the **fourteen avatars of Shiva** (one of them being Veerabhadra) on the ceiling.

### WHITR-AP

- World Heritage Institute of Training and Research – Asia Pacific (WHITRAP) has recognised CEPT University's Programme in Conservation and Regeneration as a "commendable case" of **Global Innovation on World Heritage Education**.
- The Conservation Programme at CEPT was the only one from South Asia to get such recognition.
- The programme was recognised for its focus on sustainability, people-centric approach, and innovative reforms in heritage conservation.

#### About WHITR-AP

- It is a **non-profit organization** under **UNESCO** that specializes in heritage conservation.

- The mission is to strengthen the implementation of World Heritage Convention (WHC) in the Asia Pacific region, through capacity building, training, research, communication & establishment of a regional network.

#### **United Nations Educational, Scientific and Cultural Organization (UNESCO)**

- Formed in 1945, it is a specialized agency of **United Nations (UN)**, based in **Paris**.
- It works for **achieving peace and security** by promoting international collaboration through educational, scientific, and cultural reforms in order to increase universal respect for justice, rule of law, and human rights along with fundamental freedom proclaimed in the United Nations Charter.
- It has 195 member states and 10 associate members. **India is a founding member** of the Organisation.

#### **World Heritage Convention**

- Created in **1972**, the primary mission of WHC is to identify and protect world's **natural and cultural heritage** considered to be of Outstanding Universal Value.
- The Convention is governed by World Heritage Committee - an elected body of 21 nations.
- **India is a signatory** to the convention.

#### **UNESCO's 'Historic Urban Landscape' Project For Orchha And Gwalior**

- Gwalior and Orchha in Madhya Pradesh were included in the list of UNESCO's world heritage cities under its urban landscape city programme in December 2020.
- **'Historic Urban Landscape' Approach was adopted in 2011 at UNESCO's General Conference**. UNESCO defines HUL approach as an integrated approach towards managing heritage resources found within dynamic and evolving environments.
- These places will now be jointly developed by UNESCO, Government of India, and Madhya Pradesh by focusing on their historical and cultural improvement.

#### **World Heritage Site**

- A World Heritage Site is a location with an outstanding universal value. Selected by UNESCO, it signifies exceptional cultural, historical, scientific or other form of significance and are judged important to the collective interests of humanity.
- This is embodied in World Heritage Convention 1972.
- To be selected, a World Heritage Site must be an already classified landmark, unique in some respect as a geographically and historically identifiable place having special cultural or physical significance. To be included, sites must meet at least one of the **ten selection criteria**. Some of these are:
  - The site should represent a masterpiece of human creative genius.
  - It should represent an important interchange of human values over a period of time or within a cultural area of the world.
  - It should be evidence of unique cultural tradition or an outstanding example of traditional human settlement.
  - It should contain areas of exceptional natural beauty and aesthetic importance.
  - It should represent significant on-going ecological and biological processes in the evolution and development of marine ecosystems and communities of plants and animals.
- The sites are intended for practical conservation for posterity, which otherwise would be subject to risk from human or animal trespassing or threat from local administrative negligence.

**Ramappa Temple Gets World Heritage Tag**

- **Ramappa temple in Palampet, Telangana**, was recently declared as a UNESCO World Heritage Site by the World Heritage Committee (WHC). It was designed and architect by Ramappa.
- Also known as the **Rudreshwara temple**, it was **built by Racherla Senapati Rudrayya**, a general of **Kakatiya king Ganapatideva**, in the 13th century. The foundation is built with "**sandbox technique**", the flooring is granite, and the pillars are basalt.
- The temple is a Sivalayam, where Lord Ramalingeswara is worshipped. Marco Polo, during his visit to the Kakatiya empire, allegedly called the temple "*the brightest star in the galaxy of temples*".

**Sandbox Technique:** The technique involves filling the pit — dug up for laying foundation — with a mixture of *sand lime, jaggery* (for binding) and *karakkaya* (black myrobalan fruit), before the buildings were constructed on these 'sandboxes'. The sandbox in the foundation acts as a ***cushion in case of earthquakes***.

**Dholavira In Gujarat Has Got Tag Of UNESCO World Heritage Site**

- It is now the 40th treasure in India to be given UNESCO World Heritage tag. It is the **first site of ancient Indus Valley Civilisation (IVC)** in India to get the tag.
- Other than India, Italy, Spain, Germany, France, and China have 40 or more World Heritage Sites.

It is a Harappan-era city sprawled over 100 hectares on Khadir, one of the islands in the Rann of Kutch. It dates from the 3rd to mid-2nd millennium BCE. As one of the five largest cities of Indus Valley Civilisation, Dholavira is located about 250 km from Bhuj. It has **two seasonal streams, Mansar and Manhar**.

- After Mohen-jo-Daro, Ganweriwala and Harappa in Pakistan and Rakhigarhi in Haryana of India, **Dholavira is the fifth largest metropolis of IVC**.
- Unlike graves at other IVC sites, no mortal remains of humans have been discovered at Dholavira.
- Its uniqueness lies in some of its characteristics, which include a *water management system, multi-layered defensive mechanisms, extensive use of stone in construction and special burial structures*.

**Web App Of The Indus Script Book Inaugurated**

- The Indus Research Centre, which is part of the Roja Muthiah Research Library, has launched a web app- **induscript.in** in Chennai.
- Web app was developed through a financial grant from the Department of Archaeology.
- The Indus Script: Texts, Concordance and Tables, written by Iravatham Mahadevan, is the sourcebook for studying and analysing the Indus scripts.

**Moplah Rebellion**

- The Moplah Rebellion or Moplah Riots of 1921 was the culmination of a series of riots by Mappila Muslims of Kerala in the 19th and early 20th centuries **against the British and the Hindu landlords** in Malabar (Northern Kerala).
- It was an armed revolt and it was **led by Variyamkunnath Kunjahammed Haji**.

**Reasons For Moplah/Mappila Riots**

- The trigger of uprising came from the Non-Cooperation Movement launched by the Congress in 1920 along with the Khilafat agitation.

- After the death of Tipu Sultan in 1799 in the Fourth Anglo-Mysore War, Malabar had come under British authority as part of the Madras Presidency. The British had introduced new tenancy laws that tremendously favoured the landlords known as **Janmis** and instituted a far more exploitative system for peasants than before.
- Most of the landlords were **Namboodiri Brahmins** while most of the tenants were Mapillah Muslims. Fuelled by the fiery speeches by Muslim religious leaders and anti-British sentiments, the Mopillahs launched a violent rebellion.

### Madur Mats

- Madurkathi mats, or Madur, are mats woven in **West Bengal** from a reed called madurkottir, or Madurkathi, a sedge of the family Cyperaceae.
- The mats are woven mainly by weavers of **Mahishya caste**, and predominantly by **women**.
- They are made of natural fibers, and are *non-conductive and sweat-absorbing*.
- These mats are also used for religious purposes.
- In 2018, Indian Patent Office granted the Government of West Bengal a GI Tag for Madurkathi.

### Punnapara-Vayalar Revolt

- A report to Indian Council for Historical Research (ICHR) has suggested dropping Communist martyrs of Punnapara-Vayalar, Karivelloor and Kavumbayi agitations from the list of martyrs of India's Independence struggle.
- Punnapara-Vayalar revolt was an organized uprising by working class in the Princely State of Travancore, directed against the Prime Minister, C. P. Ramaswami Iyer and the state.
- The Objective of the movement was to overthrow the exploitative diwan of Travancore and to liberate working class from regressive taxation and exploitation.

#### Indian Council of Historical Research (ICHR)

- Came into existence in 1972, ICHR was registered under the Societies Registration Act of 1860.
- ICHR is an autonomous body of the **Union Ministry of Human Resource Development**.
- It was established by an Administrative Order of the then Union Ministry of Education and Social Welfare.
- It is based in New Delhi with regional centers in Bengaluru (Karnataka) and Guwahati (Assam).

### Jallianwala Bagh Complex

- Prime Minister Narendra Modi virtually inaugurated the renovated Jallianwala Bagh complex in Amritsar.
- The monument was first opened by then President Dr Rajendra Prasad on April 13, 1961, as a tribute to the victims of the massacre on April 13, 1919.
- The central government set up the Jallianwala Bagh National Memorial Trust on May 1, 1951.
- Prime Minister is the chairman, and permanent members include the President of Indian National Congress, Chief Minister of Punjab, Governor of Punjab, Union Minister in charge of Culture, and Leader of Opposition in the Lok Sabha.

### Khel Ratna Named After Dhyan Chand

- The Rajiv Gandhi Khel Ratna stands renamed as the "Major Dhyan Chand Khel Ratna".

- It is awarded **annually by Ministry of Youth Affairs and Sports** since 1991-92.
- The recipients of the award are **selected by a committee** constituted by the Ministry and are honoured for their *“spectacular and most outstanding performance in the field of sports over a period of **four years**”* at the international level.
- As of 2020, the award comprises *a medallion, a certificate and a cash prize of ₹25 lakh.*

### Major Dhyan Chand

- Three-time Olympic gold medallist, he is widely regarded as the greatest field hockey player of all time.
- His birthday, on **August 29, marks National Sports Day**, when the National Sports Awards are presented each year.

### Durga Puja on ICH

- UNESCO’s Intergovernmental Committee for Safeguarding of the Intangible Cultural Heritage (ICH) recently included ‘**Durga Puja in Kolkata**’ on the Representative List of **Intangible Cultural Heritage of Humanity**.
- Celebrated across the country — in Tripura, Bihar, Jharkhand, Odisha, Assam, Maharashtra, Delhi, and Uttar Pradesh — and in neighbouring Bangladesh, the festival is celebrated notably in Kolkata.
- It marks the ten-day worship of the Hindu mother-goddess Durga.

### UNESCO’s List of ICH

- UNESCO established its List of ICH in 2008, when the 2003 Convention for Safeguarding of the Intangible Cultural Heritage took effect.
- It was established with the aim of ensuring better protection of important intangible cultural heritages worldwide and the awareness of their significance.
- **India is a signatory** of the 2003 UNESCO Convention and has 14 ICH elements on the list. Overall, the list has 492 ICH elements.

### Panj Piare

- Recently an incorrect usage of the term Panj Piare led to a controversy. Panj Piare is not just a group of **5 baptised people** but a concept and tradition founded by **10th Sikh Guru Gobind Singh**.
- Guru Gobind Singh established the institution of Panj Piare while founding Khalsa on the day of Baisakhi in 1699. He asked for five heads for sacrifice and five men responded to his call and the Guru baptised them and called them Panj Piare.
- These five included: Bhai Daya Singh, Bhai Dharam Singh, Bhai Himmat Singh, Bhai Mohkam Singh and Bhai Sahib Singh.

### Khalsa

- Khalsa is a group into which committed Sikhs can be initiated to demonstrate their devotion to their faith.
- Khalsa are men and women who have undergone the Sikh baptism ceremony and who strictly follow the Sikh Code of Conduct and Conventions and wear the five prescribed articles of faith. They are **Kesh, Kangha, Kara, Kachera/Kaccha and Kirpan**.

### Remains Of Gupta Temple

- Archaeological Survey of India (ASI) has recently discovered remains of an ancient temple dating back to Gupta period (5th century) in a village in Uttar Pradesh’s **Etah district**.

- The stairs of the temple had ‘**shankhalipi**’ inscriptions, which was deciphered as ‘**Sri Mahendraditya**’, which was the **title of Kumaragupta I**.
- As per ASI, the stairs led to a structural temple. Guptas were the first to build structural temples, distinctly different from the ancient rock-cut temples.
- The discovery is significant since only two other structural temples from the Gupta age have been found so far — **Dashavatara Temple (Deogarh) and Bhitargaon Temple (Kanpur Dehat)**.

### Shankhalipi Script

- Shankhalipi or “**shell-script**” is a term used by scholars to describe **spiral characters** assumed to be derivatives of **Brahmi script** that look like **conch shells or shankhas**.
- Both Shankhalipi and Brahmi are used primarily for names and signatures.
- The script was discovered in 1836 in Uttarakhand’s Barahat by **James Prinsep**, who was the founding editor of the Journal of the **Asiatic Society of Bengal**.

### Kumaragupta I

- Kumaragupta I was the son and successor of Chandragupta II, who ruled until 455th AD. He was the **founder of Nalanda University**.
- Towards the end of his reign a tribe in the Narmada valley, the Pushyamitras, rose in power to threaten the empire. He was succeeded by his son Skandagupta.

### Dashavatara Temple

- It is an early 6th century **Vishnu Hindu temple** located at Deogarh, Uttar Pradesh, in the Betwa River valley.
- It has a simple, one cell square plan and is one of the earliest Hindu stone temples still surviving today.
- Built in the Gupta Period, the Dashavatara Temple at Deogarh shows the ornate Gupta style architecture.
- The temple at Deogarh is dedicated to Vishnu but includes in its small footprint images of **various gods and goddesses** such as Shiva, Parvati, Kartikeya, Brahma, Indra, River goddesses Ganga and Yamuna, as well as a panel showing the **five Pandavas** of the Hindu epic Mahabharata.
- Also carved are secular scenes and amorous couples in various stages of courtship and intimacy.
- According to Alexander Lubotsky, this temple was built according to the third khanda of the Hindu text Vishnudharmottara Purana, which describes the design and architecture of the Sarvatobhadra-style temple, thus providing a floruit for the text and likely temple tradition that existed in ancient India.
- The Dashavatara temple is locally known as **Sagar marh**, which literally means "the temple on the tank", a name it gets from the square water pool cut into the rock in front.

### Mount Harriet

- Union government recently renamed Mount Harriet, a historical tourist spot in Andaman and Nicobar Islands, as Mount Manipur.
- Mount Harriet is the 3rd highest peak in the Andaman and Nicobar Islands and served as the **summer headquarters** of the Chief Commissioner during British Raj.
- It has now been renamed to honour the contributions of Manipur fighters in **1891 Anglo-Manipur war**.
- The Mount Harriet National Park is located nearby and is known for its wide variety of birds.

### Geographical Indication (GI) Tag

**Karuppur kalamkari paintings** and the **Kallakurichi wood carvings**, from Tamil Nadu, recently received the geographical indication (GI) tags. GI Tag is given to products that have a specific place of origin and have a reputation because of their geographical origin.

**Kalamkari Paintings**

- Kalamkari means creating something with a 'kalam', or a brush.
- These are done in Karuppur and its surrounding villages in Ariyalur district, and Thanjavur district.
- Documentary evidence shows that kalamkari paintings evolved under the patronage of **Nayaka rulers** in early 17th century.
- Kalamkari paintings are done on **pure cotton cloth**.
- Pens or brushes are made out of **bamboo trees and coconut tree stems**.
- Dyes for the cloth are always extracted from **naturally colour producing agents** such as roots, leaves, and mineral salts of iron, tin, copper, and alum. The usage of cow dung, seeds of various kinds, plants and crushed flowers are also used to get effects in the paintings.
- Originally the kalamkari art specifically depicted Hindu epic tales of Ramayana and Mahabharata but in recent times it is also used to depict Buddha and Buddhist art forms.

**Kallakurichi Wood Carvings**

- These are a unique form of wood carving that involves the application of ornamentation and designs, derived from traditional styles by the craftsmen.
- Craftsmen are specialised in carving temple-related items & also furniture, using traditional designs.
- The woodcarving skill evolved as an indigenous art when Madurai was an important town under different monarchical regimes in ancient times.
- In course of time, woodcarving craftsmen migrated to other towns and places, and each of them evolved their own style like the Kallakurichi woodcarving.

**Feni GI**

- The Goa government's Feni Policy 2021 has paved the way to take **GI Certified Goan Cashew Feni** forward at par with other international Liquors such as **Mexico's tequila, Japanese Sake and Russia's Vodka**.
- The Goa government in 2016 classified Feni as the **Heritage Spirit of Goa**.
- **Goan Cashew Feni**: It is the first liquor product in country to obtain 'Heritage Drink' status and got its **GI** certification in 2000. Only the cashew feni has been **GI-tagged**.
- Feni is a brew made from **coconut or cashew fruits** and is synonymous with the **Goan ethos and identity**.
- Feni was first manufactured in Goa in the 1600s after the Portuguese imported the **cashew plant from Brazil to India**. There are currently 26 varieties of feni manufactured in Goa.
- **Other GI-Tags from Goa**: Kholra red chillies/Canacona Chillies, spicy Harnal Chillies, Myndoli Banana or Moira Banana, and traditional sweet dish Goan Khaje.

**Langa-Manganiyar**

- Recently an initiative has begun to **document and digitise the folklore and songs** of Langa-Manganiyar artists. The project is aimed at saving the rapidly disappearing narrative traditions of these communities.
- The Langas and Manganiyars are hereditary communities of **Muslim musicians** residing mostly in western Rajasthan's Jaisalmer and Barmer districts and in Pakistan's Tharparkar and Sanghar districts in Sindh. Their music forms a vital part of Thar desert's cultural landscape.
- Their folk music flourished under the patronage of their Hindu yajmans (patrons) over the years. While Manganiyars are patronised by Bhati Rajputs, the Langas have Sindhi Sipahis as yajman.

### Pochampally Village

- Pochampally village in **Telangana** was recently selected as one of the **Best Tourism Villages** by United Nations World Tourism Organisation (**UNWTO**).
- The Best Tourism Villages initiative is a global initiative to showcase villages where tourism preserves cultures and traditions, celebrates diversity, provides opportunities and safeguards biodiversity.
- Pochampally is often referred to as the **Silk City of India** for the sarees that are woven through a unique style called **ikat**. This style, Pochampally Ikat, received a Geographical Indication status in 2004.
- Ikat is a Malaysian, Indonesian word that means “**Tie and Dye**”.
- Pochampally is also known as **Bhoodan Pochampally** to commemorate the Bhoodan Movement that was launched by Acharya Vinobha Bhave from this village in 1951.

#### About UNWTO

- It is the United Nations specialized agency, involved in the promotion of responsible, sustainable and universally accessible tourism.
- It is headquartered in Madrid, Spain.

### Rani Kamalapati Station

- The name of **Bhopal’s Habibganj railway station** was recently changed to Rani Kamalapati station. The renaming is to honour the memory and sacrifices made by a **queen of the Gond community**.
- Rani Kamalapati was the daughter of **Raja Kirpal Singh Sarautia** of the princely state of Salkanpur, **Sehore**. She is known for her intelligence and courage.
- The Gonds are one of the largest tribal communities in India, spread across Madhya Pradesh, Maharashtra, Chhattisgarh, Andhra Pradesh, Telangana, Bihar and Odisha

#### Authority To Change Railway Station Names

- This is **left to the choice of the state government concerned**. Change of station names is entirely a **state subject** even though Railways belong to the **Union government**.
- The state governments send the request to the Ministry of Home Affairs, the nodal ministry for these matters, which then gives its approval, keeping the Ministry of Railways in the loop.

### UNESCO Creative Cities Network

- UNESCO recently picked up **Srinagar** among 49 cities as part of the UNESCO Creative Cities Network (UCCN).
- UNESCO designates the creative cities in **seven fields**



- **Srinagar** city got the UCCN tag in the field of **Crafts and Folk Arts** — the second city in India in this category after **Jaipur**.
- After *Mumbai (film)*, *Chennai (music)*, *Varanasi (music)*, *Hyderabad (gastronomy)* and *Jaipur*, Srinagar is the **sixth Indian city** to achieve this distinction.

### Devasahayam

- Neelakanda, a Hindu man who converted to Christianity in 18th Century, is set to become the **first Indian layman to be declared a saint by Vatican**. Before this, all other Indians elevated as saints have been **members of the clergy**.

- In 1745, after his conversion, he took the Christian name **Lazarus** and was called Devasahayam in the local language. Devasahayam literally means “**God’s help**” or servant of God.

### National Mission On Cultural Mapping (NMCM)

- NMCM has now been handed over to **Indira Gandhi National Centre for Arts (IGNCA)**.
- IGNCA will soon start cultural mapping in 75 villages.
- NMCM was set up **to compile data of artists, art forms & geo-location** with inputs from Central Ministries, State Governments & art and culture bodies.
- **Three important objectives of NMCM** - National Cultural Awareness Abhiyan, Nationwide Artist Talent Hunt/Scouting Programme, and National Cultural Workplace.

### Battle Of Saragarhi

- **12th September** marked **124th anniversary of the Battle of Saragarhi**.
- The Battle of Saragarhi is considered **one of the finest last stands** in the military history of the world.
- Saragarhi was the **communication tower between Fort Lockhart and Fort Gulistan**.
- The two forts in the rugged **North-West Frontier Province (NWFP)**, now in Pakistan, were built by **Maharaja Ranjit Singh** but renamed by the British.

### Puri Heritage Corridor Project

- The **Odisha Government** is expected to soon lay the foundation stone of the **Puri heritage corridor**, which is being developed at a cost of Rs 800 crore.
- The project is a part of the **Augmentation of Basic Amenities and Development of Heritage and Architecture (ABADHA) scheme** for developing Puri as a world-class heritage city.
- The project **includes redeveloping major portions of the holy town** and in the vicinity of the **Jagannath temple** for visitors and tourists.

### Jagannath Temple

- **Construction:** It is believed to have been constructed **in 12th century by King Anatavarman Chodaganga Deva of the Eastern Ganga Dynasty**.
- **Mythology:** Jagannath Puri temple is called ‘**Yamanika Tirtha**’ where, according to the Hindu beliefs, the power of ‘Yama’, the god of death, has been nullified due to the presence of Lord Jagannath.
- **Architecture:** This temple was called the “**White Pagoda**” and is a part of **Char Dham pilgrimages** (Badrinath, Dwaraka, Puri, Rameswaram).

### Sree Padmanabhaswamy

- The **Supreme Court (SC)** has declined a plea filed by **Sree Padmanabhaswamy Temple Trust** seeking to exempt it from the audit of 25 years as ordered by the court last year (2020).
- Sree Padmanabhaswamy Temple: According to Historians, the temple dates back to the 8th century but the **present structure was built in the 18th century by the then Travancore Maharaja Marthanda Varma**.
- The temple was **initially made of wood but later it was constructed with granite**.
- The temple is built in the **unique Chera style of architecture**, and its main deity is **Lord Vishnu** who is found in the **Anantha Shayana posture** (reclined posture of eternal yoga) on **Adishesha (king of all serpents)**.

- It is known to be one of the **108 holy temples associated** with Vaishnavism in India.

### Goddess Annarpurna

- An ancient idol of Goddess Annapurna was **brought back to India** after over a century from **Canada**.
- The Idol was received by the Archaeological Survey of India (ASI). It will be placed at its original location - **Kashi Vishwanath temple**.
- Goddess Annapurna is the **goddess of food**. She is also known as the manifestation of goddess Parvati, partner to Lord Shiva.
- The idol holds a bowl of kheer in one hand and a spoon in other.
- The **18<sup>th</sup> century idol, carved in Benares style**, was part of the collection at MacKenzie Art Gallery at the University of Regina, Canada.

### P. Sainath To Be Awarded With Fukuoka Grand Prize

- Noted journalist P. Sainath has been selected as one of the three recipients of Fukuoka Prize for 2021. Mr. Sainath will receive the 'Grand Prize' of Fukuoka Prize while the Academic Prize and the Prize for Arts and Culture will go to Kishimoto Mio of Japan and filmmaker Prabda Yoon of Thailand, respectively.
- Fukuoka Prize is **given annually** to distinguished people to **foster and increase awareness of Asian cultures**, and to create a broad framework of exchange and mutual learning among the Asian people. Eleven Indians have received the Fukuoka Prize so far.

### Jnanpith Award

- Assamese poet **Nilmani Phookan Jr** and Konkani novelist **Damodar Mauzo** recently won the Jnanpith Award.
  - ✓ Phookan is a renowned poet and has written Surya Henu Nami Ahe Ei Nodiyedi, Gulapi Jamur Lagna, and Kobita.
  - ✓ Mauzo is known for his novels, such as Karmelin, and Tsunami Simon, and short stories Teresa's Man and Other Stories from Goa.
- Instituted in 1961, the Jnanpith Award is the **highest literary award in India** presented annually by the **Bharatiya Jnanpith**.
- It can only be conferred upon an Indian citizen and is given only to writers writing in Indian languages included in the Eighth Schedule to the Constitution and English, with no posthumous conferral.
- The first recipient of the award was Malayalam writer G. Sankara Kurup who had received the award in 1965 for his collection of poems, Odakkuzhal (The Bamboo Flute).

### Janjatiya Gaurav Divas: 15th November

- Union Cabinet has approved **15th November as Janjatiya Gaurav Divas** to commemorate the brave tribal freedom fighters as part of the year-long celebrations of 75 years of India's Independence.
- It will be celebrated **every year** to recognize the efforts of tribals in the preservation of cultural heritage and promotion of Indian values of national pride, valour, and hospitality.
- A **tribal freedom fighter museum at Ranchi** would be inaugurated by the Prime Minister.
- 15th November **also marks the birth anniversary of Birsa Munda** who is revered as God by tribal communities across India.

**Bhasha Sangam Initiative**

- The **Ministry of Education** has launched various initiatives under **Ek Bharat Shreshtha Bharat (EBSB)** to commemorate **Rashtriya Ekta Diwas**.
- The **Ek Bharat Shreshtha Bharat** was announced by Prime Minister in 2015 on the occasion of 140th birth anniversary of Sardar Vallabhbhai Patel. The **Rashtriya Ekta Diwas** is celebrated to mark the birth anniversary of **Shri Sardar Vallabhbhai Patel**.

**Bhasha Sangam**

- It is an initiative of the **Ministry of Education** under Ek Bharat Shreshtha Bharat, **to teach basic sentences of everyday usage in 22 Indian languages (Eight Schedule languages)**.
- It is **developed by National Council of Educational Research and Training (NCERT)**.
- The idea is that people should **acquire basic conversational skills in an Indian language other than their mother tongue**.
- It is available on DIKSHA, ePathshala and through 22 booklets.

**Ek Bharat Shreshtha Bharat**

- It is an initiative of the **Ministry of Education**.
- Every State and UT in the country would be paired with another State/UT for a time period, during which they would carry out a structured engagement with one another in the spheres of language, literature, cuisine, festivals, cultural events, tourism etc. It would thus promote engagement amongst the people of different States/UTs so as to enhance mutual understanding and bonding.

**Personality In News**

**Sambandar**

- **Dancing child saint** Sambandar of **12th century** belongs to **Chola dynasty**. The National Gallery of Australia (NGA) has announced that it would return 14 works of art from its Asian art collection to India including Sambandar.
- **Sambandar was one of the nayanmars**, a group of sixty-three Shaivite saints active in South India from 6<sup>th</sup> to 9<sup>th</sup> century who were instrumental in popularizing the worship of Shiva through devotional poetry and song.

**Birth Anniversary Of Sant Kabir Das**

- Sant Kabir Das was a very renowned saint, poet and social reformer of India who lived during the **15th century**. His esteemed works and poems describe the greatness and oneness of the Supreme Being. He was a proponent of **Bhakti Movement**.
- He did not believe in any religious discrimination and readily **accepted all the religions**. A religious community known as **'Kabir Panth'** was founded by him and the members of this forum are referred to as 'Kabir Panthis'.
- Kabir Das' ideologies were greatly influenced by **Vaishnava saint Swami Ramananda** who accepted Kabir as his disciple.
- **Major Works: Bijak, Sakhi Granth, Kabir Granthawali, and Anurag Sagar**. His verses are found in Sikhism's scripture Guru Granth Sahib. The major part of his work was collected by the fifth Sikh guru, Guru Arjan Dev.

**Death Anniversary of Swami Vivekanand (4th July)**

- Born in Kolkata on January 12, 1863, Swami Vivekananda was known as Narendra Nath Datta in his pre-monastic life.

- In 1893, he took the name 'Vivekananda' after **Maharaja Ajit Singh of Khetri State** requested him to do so.
- He formed **Ramakrishna Mission** in 1897 "to set in motion a machinery which will bring noblest ideas to the doorstep of even the poorest and the meanest.
- He preached '**neo-Vedanta**', an interpretation of Hinduism through Western lens, and believed in combining spirituality with material progress
- **Raja Yoga**, '**Jnana Yoga**', '**Karma Yoga**' are some of the books he wrote.

### **Aurobindo Ghose**

- Prime Minister has recently set up a 53-member committee to mark **150th birth anniversary** of spiritual leader Sri Aurobindo on 15th August, 2022.
- Aurobindo Ghose was an **Indian philosopher, yoga guru, poet and Indian nationalist**. Born in 1872, in Calcutta he went on to complete his education at King's College in England.
- After returning to India, he took up various civil service works under Maharaja of Princely state of Baroda. Later he became increasingly involved in the nationalist politics and joined Indian National Congress in 1906.
- He was one of the founders of the youth club **Anushilan Samiti** which protested against the atrocities of the British government. He was charged in **Alipore Bomb Case** (1906-1910) and was sentenced to jail.

### **Spiritualism**

- He decided to give up active politics after his stint in jail and devoted himself to spiritualism. He reached Pondicherry in 1910, where his spiritual movement began.
- At Pondicherry, Sri Aurobindo developed a spiritual practice he called **Integral Yoga**. He believed in a spiritual realisation that not only liberated but transformed human nature, enabling a divine life on earth.
- In 1926, with the help of his spiritual collaborator, **Mirra Alfassa** (referred to as "The Mother"), **Sri Aurobindo Ashram** was founded.
- His main literary works are **The Life Divine**, which deals with the philosophical aspect of Integral Yoga; **Synthesis of Yoga**, which deals with the principles and methods of Integral Yoga; and **Savitri: A Legend and a Symbol**, an epic poem.

### **Abanindranath Tagore's 150th Birth Anniversary**

- The National Gallery of Modern Art (NGMA), New Delhi has organised a virtual tour titled "The Great Maestro - Abanindranath Tagore" to commemorate this 150th birth anniversary.
- He was nephew of Rabindranath Tagore, and the first major supporter of swadeshi values in Indian Art.
- He first created '**Indian Society of Oriental Art**' and later went on to establish **Bengal School of Art** to counter English influence on Indian artists.
- His idea of modernizing Mughal and Rajput paintings eventually gave rise to modern Indian painting, which took birth at his Bengal school of art.
- Most of his literary works were meant for children. Some of his books like '**BudoAngla**', '**Khiner Putul**' and '**Rajkahini**' are best examples of Bengali children's literature.
- He liked to paint sets of images dealing with a **theme or a text such as the 'Arabian Nights' or the 'Krishna Leela'**.

### **Sree Guru Narayana Jayanthi 2021**

- Sree Narayana Guru of Kerala was a leader who reformed the oppressive caste system that prevailed in society at the time.

- Born in the **Ezhava caste**, Narayan Guru had experienced discrimination from the upper caste of society.
- His famous saying in Malayalam was '**One caste, one religion, one god for all, Ask not, say not, and think not caste**'.
- In 1888, he built a temple dedicated to Lord Shiva at Aruvippuram which was against the caste-based restrictions of the time.
- He organized an **All-Region Conference in 1923** at Alwaye Advaita Ashram, which was reported to be the first such event in India.
- He became one of the greatest proponents and **re-evaluators of Advaita Vedanta**, the principle of non-duality put forward by Adi Shankara.
- He became a '**Parivrajaka**' (one who wanders from place to place in quest of Truth) after the demise of the father and wife.
- In 1903, he established **Sree Narayana Dharma Paripalana Yogam** to unite the masses through organization and make them a self-confident and self-respecting community of people.

### Mahakavi Subramania Bharati

- Vice President recently paid tributes to Mahakavi Subramania Bharati on his death centenary (100 years).
- Born in Ettayapuram of Tirunelveli district (present-day Thoothukudi) in 1882, he was a Tamil writer, poet, journalist, Indian Independence activist and social reformer.
- He is regarded as the **father of the modern Tamil style**. His patriotic poems led to a spirit of unity among people during the British Raj and his writings are considered a pioneer in Tamil journalism and literature.
- **Important Works:** Kaṅṅan pāṭṭu (1917; Songs to Krishna), Panchali sapatham (1912; Panchali's Vow), Kuyil pāṭṭu (1912; Kuyil's Song), Pudiya Russia and Gnanaratham (Chariot of Wisdom).
- Many of his English works were **collected in Agni and Other Poems and Translations and Essays and Other Prose Fragments (1937)**.
- **Involvement during Nationalist Period:** After 1904, he joined Tamil daily newspaper **Swadesamitran**. This exposure to political affairs led to his involvement in extremist wing of the **Indian National Congress (INC)** party.
- In order to proclaim its revolutionary ardour, Bharathi had the **weekly newspaper named 'India'** printed in red paper. It was the **first paper in Tamil Nadu** to publish political cartoons.
- He also published and edited a few other journals like "**Vijaya**".

### Rani Abbakka Chowta

- The silver jubilee of Veera Rani Abbakka Utsava was recently celebrated in Ullal City.
  - Rani Abbakka Chowta was the **first Tuluva Queen of Ullal** who fought **Portuguese** in the latter half of 16th century.
  - She belonged to **Chowta dynasty** who ruled over parts of coastal Karnataka (Tulu Nadu).
  - Their capital was Puttige. The port town of Ullal served as their subsidiary capital.
- The Portuguese made several attempts to capture Ullal as it was strategically placed, but Abbakka repulsed each of their attacks for over four decades.

### Maharaja Ranjit Singh

- A nine-foot-tall bronze equestrian (performer on horseback) statue of Maharaja Ranjit Singh, the founder of the Sikh Empire, was vandalized in Lahore Fort.
- Ranjit Singh was born in 1780 in Gujranwala, now in Pakistan.
- He was son of Maha Singh and upon his father's death in 1792; he became the head of **Shukerchakias**, a

Sikh sect.

- He overthrew the warring Misls and established a unified Sikh empire after he conquered Lahore in 1799.
- He was given the title Lion of Punjab (Sher-e-Punjab) because he stemmed the tide of Afghan invaders in Lahore.

### Krishna Verma

- Prime Minister paid tributes to **revolutionary freedom fighter Shyamji Krishna Varma** on his birth anniversary (4<sup>th</sup> October).
- Shyamji Krishna Varma was **born** on 4<sup>th</sup> October 1857 in **Mandvi town of Kachchh district of Gujarat**.
- He was **an expert in Sanskrit and other languages**.
- He was inspired by **Bal Gangadhar Tilak, Swami Dayanand Saraswati and Herbert Spencer**.
- He founded the **Indian Home Rule Society, India House and The Indian Sociologist** in London.
- Became the **first President of Bombay Arya Samaj**. He inspired **Veer Savarkar** who was a member of India House in London. Swami Dayanand Saraswati was the founder of the Hindu reform organisation Arya Samaj
- Verma also served as the **Divan of a number of states** in India.

### Hari Singh Nalwa: The Sikh Warrior

- Afghanistan, which has earned the name of graveyard of the empires, could not be controlled by anyone completely. But Hari Singh Nalwa, a legendary Sikh commander, tamed the turbulent forces at play in Afghanistan and earned the reputation of the most feared Sikh warrior there.
- One of the main and most trustworthy **commanders of Maharaja Ranjit Singh's force**.
- He remained Governor of Kashmir, Hazara and Peshawar.
- Afghanistan was dubbed the "unconquered zone," and it was Hari Singh Nalwa who, for the first time, barred Afghans from ravaging the North-West Frontier by seizing control of various regions along the Afghan border and the Khyber Pass.

### V. O. Chidambaram Pillai

- Prime Minister recently hailed the achievements of freedom fighter Vallinayagam Olaganathan Chidambaram Pillai (VOC) on his 150th birth anniversary.
- Born in 1872 in Tamil Nadu, VOC was popularly known as **Kappalottiya Tamilan** (Tamil Helmsman) and **Sekkizuththa Semmal** (scholarly gentry who suffered at the oil press).
- He founded **Swadeshi Steam Navigation Company (SSNCo)** in 1906 to compete against the monopoly of the British India Steam Navigation Company.
- He also launched the **first indigenous Indian shipping service** between *Tuticorin and Colombo* with the SSNC, competing against British ships.

### Role Played in Freedom Movement

- By **1906**, VOC won the support of merchants and industrialists in Tuticorin and Tirunelveli after establishing **SSNCo**.
- He **established many institutions** like Swadeshi Prachar Sabha, Dharmasanga Nesavu Salai, National Godown, Madras Agro-Industrial Society Ltd and Desabimana Sangam.
- VOC and Siva were aided in their efforts by a number of Tirunelveli-based lawyers, who formed **an organisation called the Swadeshi Sangam, or 'National Volunteers'**.
- The nationalist movement acquired a secondary character with the **beginning of the Tuticorin Coral Mills strike (1908)**.

- Even prior to **Gandhiji's Champaran Satyagraha (1917)**, VOC took up the cause of the working class in Tamil Nadu, and thus he is a **forerunner to Gandhiji in this respect**.
- VOC, along with other leaders, resolved to take out a mammoth procession on the morning of 9<sup>th</sup> March 1908 to celebrate the **release of Bipin Chandra Pal from jail and to hoist the flag of Swaraj**.
- **Writings:** Meyyaram (1914), Meyyaru (1915), Anthology (1915), Thirukural with literary notes of Manakudavar (1917), Tholkappiam with literary notes of Ilampooranar (1928), Autobiography (1946).
- **Death:** V.O.C died on **18<sup>th</sup> November 1936** in the **Indian National Congress Office** at Tuticorin as was his last wish.

### Raja Mahendra Pratap Singh

- Prime Minister recently laid the foundation stone of **Raja Mahendra Pratap Singh State University** in **Aligarh**.
- Born into the ruling Jat family of Mursan estate in Hathras in 1886, he was a freedom fighter, revolutionary, writer, social reformer, and internationalist.
- He was an alumnus of the Muhammadan Anglo-Oriental Collegiate School later called **Aligarh Muslim University (AMU)**.

### Contribution to Freedom Struggle

- In **1913**, he took part in **Gandhi's campaign in South Africa**.
- He established a "**Provisional Government of India (Bagh-e-Babur)**" in **Kabul** in the middle of **World War I in 1915**. And declared himself **President**, and his fiery fellow revolutionary **Maulana Barkatullah of Bhopal, Prime Minister**, of the Provisional Government.
- He is said to have met **Vladimir Lenin in 1919**, two years after the Bolshevik Revolution (in Russia).
- In **1925**, he **went on a mission to Tibet and met the Dalai Lama**. He was primarily on an unofficial economic mission on behalf of Afghanistan, but he also wanted to expose the British brutalities in India.
- In **1929**, he launched the **World Federation** (which later became the force behind the **United Nations**) in **Berlin**. He was **nominated for 1932 Nobel Peace Prize**.
- The Raja **finally returned to India a year before Independence**, and immediately began work with Mahatma Gandhi.
- In free India, he diligently **pursued his ideal of Panchayati raj**.
- He **entered Lok Sabha** as an Independent candidate from Mathura in **1957**.

### Ram Prasad Bismil

- Born in 1897 at Shahjahanpur, UP, he was associated with **Arya Samaj** from an early age.
- Bismil, along with Genda Lal Dixit, a school teacher from Auraiya, organised youth from Etahwah, Mainpuri, Agra and Shahjahanpur districts to strengthen their organisations, '**Matrivedi**' and '**Shivaji Samiti**'.
- Published a pamphlet titled '**Deshwasiyon ke Naam**' and distributed it along with his poem '**Mainpuri ki Pratigya**'.
- After conflicting views and growing resentment with the Congress party, he formed the **Hindustan Republic Association** which soon had leaders like Bhagat Singh and Chandrashekhar Azad.
- On August 9, 1925, Ram Prasad Bismil along with companions Ashfaqulla Khan and others executed the plan of looting the train at **Kakori** near Lucknow.
- He was **hanged in Gorakhpur jail** on December 19, 1927 and cremated on the banks of Rapti river. The site later came to be known as Raj Ghat.

**Rani Gaidinliu**

- The foundation stone for the ‘**Rani Gaidinliu Tribal Freedom Fighters Museum**’ was recently laid in Manipur’s Tamenglong district.
- Rani Gaidinliu was a **Naga spiritual and political leader**. Born in 1915, in Tamenglong district of present-day Manipur, Gaidinliu belonged to **Rongmei Naga tribe**.
- **Heraka Movement: Jadonang**, who was also a Rongmei, started the Heraka movement and envisioned an **independent Naga kingdom** (or Naga-Raja). Heraka, which literally means pure, is a monotheistic religion where the followers worshipped Tingkao Ragwang.
- The movement aimed to resist the infiltration of Christian missionaries as well as the reforms imposed by the British government - who forced tribals into harsh labour and imposed high yearly revenue tax on every household.
- Nehru described Gaidinliu as the “**daughter of the hills**” and gave her the title of ‘Rani’ for her courage.

**Google Doodle on Kadambini Ganguly**

- Kadambini Ganguly- the country's first woman doctor, was born on 18th July, 1861.
- Ganguly, along with Chandramukhi Basu, became the first female graduates in India, from Bethune College in Kolkata.
- A champion of women's rights, Ganguly was among the six members of the first all-women delegation of the 1889 Indian National Congress.

**Some Festivals**

Festivals	Descriptions
Aranmula Boat Race Festival	<ul style="list-style-type: none"> <li>● It is the <b>oldest river boat festival in Kerala</b>, held during Onam.</li> <li>● It takes place at <b>Aranmula (situated on the banks of the river Pampa)</b>, near a Hindu temple dedicated to Lord Krishna and Arjuna.</li> <li>● <b>Palliyodams (snakeboats)</b> are used in race.</li> <li>● <b>Only men</b> of the village are allowed to be in the boat.</li> </ul>
Lag B’Omer	<ul style="list-style-type: none"> <li>● It is an annual Jewish festival observed during <b>Hebrew month of Iyar</b>.</li> <li>● It is celebrated on 33rd day of the Omer, the 49-day period between Passover &amp; Shavuot (festivals) and is the only day during this period when celebration is permitted.</li> <li>● Jews schedule weddings on this day &amp; young boys are brought here for the first hair cut.</li> </ul>
Wanchuwa	<ul style="list-style-type: none"> <li>● This festival is celebrated by <b>Tiwa tribesmen to mark their good harvest</b>.</li> <li>● It comes with songs, dances, a bunch of rituals and people clad in their native attires.</li> <li>● Tiwa, also known as <b>Lalung</b>, is an indigenous community inhabiting the states of Assam and Meghalaya and are also found in some parts of Arunachal Pradesh and Manipur.</li> <li>● They are recognized as Scheduled tribe within the <b>state of Assam</b>.</li> <li>● They practice <i>Jhum or shifting cultivation</i>.</li> </ul>
Poson Poya	<ul style="list-style-type: none"> <li>● It is an <b>annual festival held by Sri Lankan Buddhists</b> celebrating the <b>arrival of Buddhism in Sri Lanka in the 3rd century BC</b>.</li> <li>● The focal point of the religious festival is the Buddhist monastic complex on the mountain of Mihintale, where <b>Arahath Mahinda Thero</b> preached Buddhism to one of the kings of Sri Lanka.</li> </ul>

<b>Raja Praba</b>	<ul style="list-style-type: none"> <li>● This is a three-day-long festival of <b>Odisha</b>, dedicated to <b>Mother Earth (Bhuma Devi)</b> and womanhood at large.</li> <li>● This festival is also associated with the end of summer season and the arrival of monsoon.</li> </ul>
<b>Bhumi Panduga</b>	<ul style="list-style-type: none"> <li>● These are <b>celebrations marking the beginning of farm operations every year</b>.</li> <li>● Celebrated by <b>Koya tribes</b> in Andhra Pradesh.</li> <li>● For men, hunting is mandatory as part of the festival. The catch is distributed among all the families in the hamlet equally during a feast every evening.</li> </ul>

### Miscellaneous

- **Plain of Jars**
  - The Plain of Jars is located in **Laos**. It is a megalithic archaeological landscape. It consists of thousands of stone jars. The Archaeologists have recently found that the jars in the “plain of jars” were used as burial sites.
  - The jars were made of different rock types such as Limestone, Granite, Conglomerate, Breccia, Sandstone. However, the majority of the jars were made of sandstone.
- **AdiPrashikshan Portal**: It is a Central Repository of all training programs conducted by Tribal Research Institutes (TRIs), different divisions of Ministry, National Society for Education of Tribal Students (NESTS), Centre of Excellences funded by Ministry of Tribal Affairs and National Tribal Research Institute.
- **Emancipation Day or Juneteenth Independence Day**
  - US Government has recognised Juneteenth, or June 19th, as a federal holiday.
  - The day is the oldest nationally celebrated commemoration of the ending of slavery in the US.
  - **On June 19, 1865, Major General Gordon Granger arrived in Galveston, Texas and announced the end of both the Civil War and slavery.** Since then, Juneteenth has become a largely symbolic date representing freedom for African Americans.
- **Dragon Man or Homo Longi**
  - Researchers from China have claimed to have found an ancient human skull that could belong to an altogether new species of humans.
  - It has been dubbed the “Dragon Man” or Homo longi, a name that has been derived from the Long Jiang or Dragon river in the Heilongjiang province of China where the city of Harbin is located.
- **International Cooperation And Convention Centre at Rudraksh, Varanasi**: It was inaugurated recently. It has been constructed with **Japanese assistance**. The objective of the project is to provide opportunities for social and cultural interactions between people.
- **Be Internet Awesome**: Google has launched the global ‘Be Internet Awesome’ program for kids in India, wherein it will partner with Indian comic book publisher Amar Chitra Katha to offer Internet safety lessons through popular comic book characters across eight Indian languages.

## GEOGRAPHY, ENVIRONMENT, AND DISASTER

## 'Heat Dome' Causing Record Temperatures In Parts Of North America

**The 'heat dome'**

Occurs when the atmosphere traps hot ocean air like a lid or cap

1 In summer, the **jet stream** (which moves the air) shifts northward

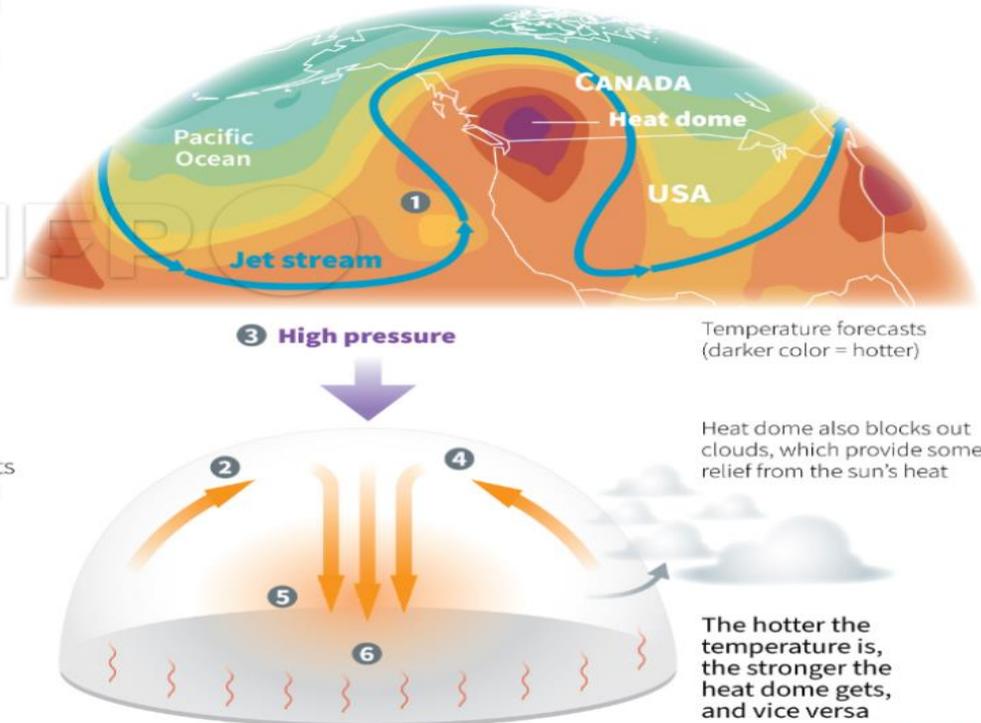
2 **Hot and stagnant air expands** upwards

3 Strong and **high-pressure** atmospheric conditions combine with influences from La Nina act like a dome or cap

4 In a process known as **convection**, hot air attempts to escape but high pressure pushes it back down

5 Under the dome, the air sinks and **compresses**, releasing more heat

6 As winds move the hot air east, the jet stream traps the air where it sinks, resulting in **heat waves**



Source: NOAA/US/Canada medias, experts

AFP

**Katol Meteorite**

- A large meteor shower occurred near the town of Katol in Nagpur during **2012**.
- A meteorite is a solid piece of debris from an object, such as a comet, asteroid, or meteoroid that originates in outer space and survives its passage through the atmosphere to reach the surface of a planet or moon.
- Though previous studies on other meteorite samples have shown the presence of much more magnesium and iron components, they were different from Bridgmanite. But the Katol Meteorite showed resemblance to the first natural occurrence of Bridgmanite mineral.
- The mineral was named in 2014 after Prof. Percy W. Bridgman, recipient of the 1946 Nobel Prize in Physics.
  - ✓ Bridgmanite is a magnesium-silicate mineral ( $\text{MgSiO}_3$ ), most abundant mineral on earth's lower mantle.
- Initial studies revealed that the host rock was mainly composed of *olivine*. Olivine is the most abundant phase in our **Earth's upper mantle**

**Prospects of This new research**

- By studying this meteorite sample, scientists can decode how bridgmanite crystallized during the final stages of our Earth's formation.
- It can help in research related with Earth evolution from being a magma ocean to a rocky planet and researchers can unearth more details about the formation of Earth.

**Mekedatu Dam Project**

- The Centre has given its assurance that Karnataka will not be allowed to carry out any construction on the Mekedatu dam project on Cauvery river until its Detailed Project Report (DPR) is approved by the Cauvery Water Management Authority (CWMA).
- The project was first approved by the Karnataka state government in 2017. It is a **Rs. 9,000 crore project** which aims to **store and supply water for drinking purposes for the Bengaluru city**. Around 400 megawatts (MW) of power is also proposed to be generated through the project.
- It received approval from the erstwhile Ministry of Water Resources for the detailed project report and is **awaiting approval from the Ministry of Environment, Forest and Climate Change (MoEFCC)**. The approval from MoEFCC is crucial because *63% of the forest area* of the **Cauvery Wildlife Sanctuary** will be submerged.
- Mekedatu, **meaning goat’s leap**, is a **deep gorge** situated at the confluence of rivers Cauvery and its tributary **Arkavathi**.
- The proposed reservoir site, **Ontigondlu**, is situated at Ramanagara district in Karnataka about 100 km away from Bengaluru. It is in the midst of Cauvery Wildlife Sanctuary.
- Tamil Nadu has approached the Supreme Court (SC) against the project even if Karnataka has held that it would not affect the flow of water to Tamil Nadu.
- **Cauvery River**
  - It **rises on Brahmagiri Hill of the Western Ghats** in southwestern Karnataka state, flows in a southeasterly direction for 475 miles (765 km) through the states of Karnataka and Tamil Nadu, and **descends the Eastern Ghats in a series of great falls**.
  - Before emptying into the Bay of Bengal south of Cuddalore, Tamil Nadu, the river breaks into a large number of distributaries forming a wide delta called the **“garden of southern India.”**
  - **Important tributaries:** Arkavathi, Hemavath, Lakshmana Theertha, Shimsa, Kabini, Harangi.

**KASEZ Becomes ‘First Green Industrial City’ In India**

Kandla Special Economic Zone (KASEZ), the oldest export zone in the country, has become the “first green industrial city” in India to receive a platinum rating under IGBC Green Cities Rating for existing cities in the industrial cities category.

- In KASEZ, 1000-odd acres has 3.5 lakh trees. Most of these trees have been planted post 2019, using the **Miyawaki forestation method**.
- The planting of trees halted the growth of salt pan beyond Kandla, helped reducing salinity and improved the quality of top soil.
- To prevent salinity of land from coming into contact with the planted trees, torn clothes are placed in land as first layer before seeding of trees.
- After seeding, that part of plantation is surrounded by torn clothes, which ensures maximum water retention.
- KASEZ also used plastic waste to line the artificial water bodies created inside the area to prevent water seepage and mix with the saline water.

**WHAT IS THE MIYAWAKI METHOD?**

- Named after Japanese botanist Akira Miyawaki who invented it
- It involves planting of several species very close together in a small pit
- Plants draw nutrients from each other and become healthy
- A dense forest, which grows naturally in 300 years is created in 30-35 years
- Trees grow 10 times faster, and absorb 30 times more carbon dioxide
- Density is 30 times that of normal tree plantations



**MIYAWAKI FORESTS IN VADODARA**

<b>Private farm, Sun Pharma Road</b> Area   <b>12,000</b> square feet Number of trees planted   <b>3,500</b>	<b>VMC's Rajivnagar STP, Harni</b> Area   <b>16,000</b> square feet Number of trees planted   <b>4,000</b>
<b>Bhoj village, Padra Forest department's demonstration plot</b> Area   <b>30 x 10</b> metre Number of trees planted   <b>831</b>	

IGBC Green Cities rating system is a voluntary and consensus-based programme. It is the first of its kind rating in India to address environmental sustainability in existing cities. The **Indian Green Building Council (IGBC)**,

part of the Confederation of Indian Industry (CII), was formed in the year 2001.

**About KASEZ**

- It was the **first special economic zone** to be established in India and in Asia.
- Established in 1965, the Port of Kandla SEZ is the biggest multiple-product SEZ in the country.
- Kandla is the **first Export Processing Zone** in India.

**Atlantic Ocean Current System: AMOC**

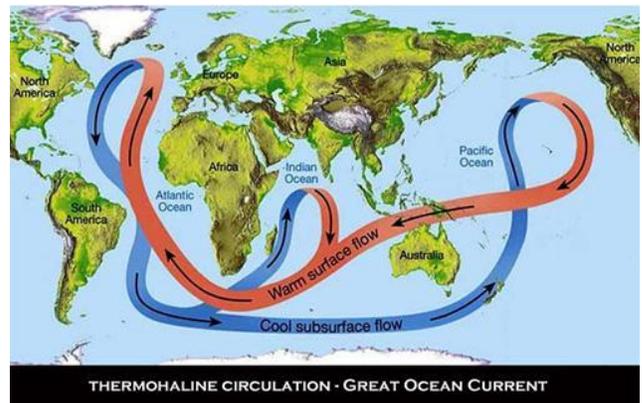
According to the IPCC’s Report, **Atlantic Meridional Overturning Circulation (AMOC)** is losing its stability and is very likely to decline over the 21<sup>st</sup> century.

**What Is AMOC**

- It is a large system of ocean currents that carry warm water from the tropics northwards into the North Atlantic.
- AMOC ensures the oceans are continually mixed, and heat and energy are distributed around Earth.

**Working of AMOC**

- The AMOC is a large system of ocean currents, like a conveyor belt, driven by **differences in temperature, salt content and the water’s density**.
- As warm water flows northwards it cools and some evaporation occurs, which increases the amount of salt. Low temperature and a high salt content make the water denser, and this dense water sinks deep into the ocean.
- The cold, dense water slowly spreads southwards, several kilometres below the surface. Eventually, it gets pulled back to the surface and warms in a process called “upwelling” and the circulation is complete.
- If the AMOC collapsed, it would increase cooling of the Northern Hemisphere, sea level rise in the Atlantic, an overall fall in precipitation over Europe and North America and a shift in monsoons in South America and Africa.

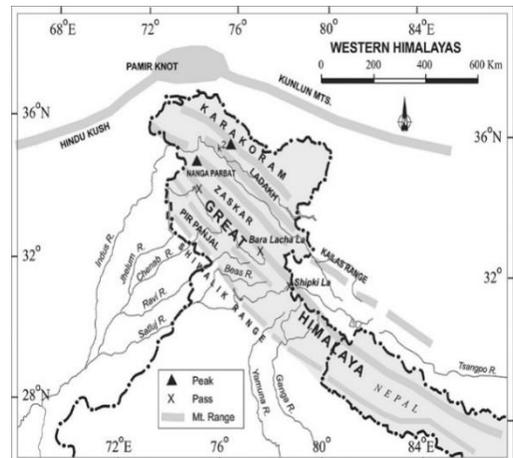


**Retreat of Glaciers in Ladakh**

- According to a recent study by the Wadia Institute of Himalayan Geology (WIHG), the **Pensilungpa Glacier** located in Ladakh’s **Zaskar Valley** is retreating due to **increase in temperature and decrease in precipitation** during winters.
- WIHG is an **autonomous body** under the **Department of Science and Technology** located in Dehradun, Uttarakhand

**Zaskar Valley**

- Situated in the northern flank of the Great Himalayas, the Zaskar Range separates Zaskar from Ladakh.
- **Marbal Pass, Zojila Pass** in the extreme northwest of Zaskar range are two notable passes in the region.
- Many rivers start in different branches which join the great Indus River. These rivers include **Hanle River, Khurna River, Zaskar River, Suru River (Indus), and Shingo River**.



**EUBOEA: Greek Island Reeling Under Wildfires**

- Wildfires continue to rip through Greek island of Evia.
- Euboea or Evia is the **second-largest Greek island** in area and population, after **Crete**.
- It is separated from Boeotia in mainland Greece by the narrow **Euripus Strait**.
- Euboea was believed to have originally formed part of the mainland, and to have been separated from it by an earthquake because it lies in the neighbourhood of a fault line.

**Operation Blue Freedom: Team CLAW**

Government of India has accorded sanction to **Team CLAW** to lead a team of **people with disabilities** to scale **Siachen Glacier** and create a new world record for the largest team of people with disabilities. Operation Blue Freedom is a social impact venture aimed at rehabilitating people with disabilities through adaptive adventure sports. It was launched in 2019 by Team CLAW.

**Siachen Glacier**

- It is located in the **Eastern Karakoram range** in the Himalayas, just northeast of **Point NJ9842** where the Line of Control between India and Pakistan ends.
- It lies immediately south of the great drainage divide that separates the Eurasian Plate from the Indian subcontinent in the extensively glaciated portion of the Karakoram sometimes called the "**Third Pole**".
- It is the **Second-Longest glacier** in World's Non-Polar areas, and the world's highest battlefield.
- The entire Siachen Glacier has been under the administration of India since 1984 (**Operation Meghdoot**).

**Team CLAW**

- Team CLAW (Conquer Land Air Water) is a team of **ex-Indian Special Forces commandos**.
- Generally, all are either from Indian Army Para Commandos or the Naval Marine Commandos, also known as the MARCOS.
- These veterans have multiple specialisations - not just in combat but also in other elite skills such as skydiving, scuba diving, mountaineering, emergency medical response, all-terrain survival etc.
- The initiative was taken by Major Vivek Jacob, a Para (Special Forces) officer.

**Atlas Of Glacial Lakes**

- **Ministry of Jal Shakti** has released an updated atlas of glacial lakes that are part of the **Ganga river basin**. About 4,707 glacial lakes have been mapped in the Ganga basin.
- This is an initiative under **National Hydrology Project (NHP)**.
- Glacial lakes with water spread area greater than **0.25 ha** were mapped using **Resourcesat-2** Linear Imaging Self Scanning Sensor-IV satellite data.
- The Atlas is available on **Bhuvan portal** of National Remote Sensing Centre (NRSC), ISRO

**National Hydrology Project (NHP)**

- It is a Central Sector scheme sponsored by the **Ministry of Jal Shakti**, Department of Water Resources, River Development and Ganga Rejuvenation.
- Financial aid from the **World Bank**.
- The objective of the project is:
  - To improve the extent and accessibility of water resources information.
  - Strengthen institutional capacity to enable improved water resources planning and management across India.

### Cattle Island

The Odisha Forest and Environment Department is all set to begin 'Island Odyssey' and 'Hirakud Cruise' ecotourism packages for tourists to islands inside the reservoir.

- Cattle Island, one of three islands in the Hirakud reservoir, has been selected as a sight-seeing destination.
- When large numbers of people were displaced from their villages, when the Hirakud dam was constructed on Mahanadi River in 1950s, Villagers could not take their cattle with them.
- They left their cattle behind in deserted villages. Subsequently named 'Cattle Island', it's surrounded by a vast sheet of water.

### Hirakud Dam

- A multipurpose scheme conceived by **Er. M. Visveswaraya in 1937.**
- It is the **longest dam** of India, built across **River Mahanadi** (third largest of peninsular India after Godavari and Krishna)
- **Debrigarh wildlife sanctuary** is located near Hirakud dam.

### Panjshir Valley

- Panjshir means "**Five lions**."
- The Panjshir Valley is Afghanistan's last remaining holdout where anti-Taliban forces are working on forming a guerrilla movement to take on the Taliban forces.
- It is a valley in north-central Afghanistan, near **Hindu Kush Mountain range.**
- It is divided by Panjshir River.
- The valley is home to Afghanistan's largest concentration of ethnic **Tajiks.**
- The valley is also **known for its emeralds**, which were used in the past to finance the resistance movements against those in power.



### Agalega Island of Mauritius

- Few reports said that Mauritius has allowed India to build a military base on this island. But Mauritius has denied the reports
- Agaléga are two outer islands of Mauritius located in the Indian Ocean.
- Agelega project includes construction of a jetty, rebuilding, and extension of the runway, and building an airport terminal on Agalega Island. The USD 87 million projects are funded by India.



### Hurricane Ida Makes Landfall In US

- Hurricane Ida has made landfall in Louisiana, US as an extremely dangerous **Category 4 storm.**
- A hurricane is a **tropical cyclone** that occurs in the Atlantic Ocean and the northeastern Pacific Ocean.

- **Typhoon** occurs in the northwestern Pacific Ocean; In the south Pacific or the Indian Ocean, comparable storms are referred to simply as “tropical cyclones” or “severe cyclonic storms”.
- **Tornadoes:** In West Africa's Guinea region and the southern United States.
- **Willy-willies** may be found in north-western Australia and the Northern Territory.

### Kuthiran Tunnel

- Kuthiran Tunnel in Kerala has been opened on one end side. This move will help improve connectivity between Tamil Nadu and Karnataka.
- The Kuthiran Tunnel is the **first road tunnel in Kerala**. It is located at Kuthiran in the Thrissur district of Kerala.
- **The tunnel is 1.6 km long** and runs through the **Peechi-Vazhani wildlife sanctuary**.
- It is a twin-tube tunnel with three lanes in each tube.
- The tunnel is also a part of the Mannuthy-Wadakkanchery stretch of the National Highway in Kerala.

**Peechi-Vazhani Wildlife Sanctuary:** It is headquartered in Peechi, Thrissur District of Kerala. It is the second-oldest sanctuary in Kerala. The sanctuary consists of Palappilly- Nelliampathy forests including the area of Chimmony Wildlife sanctuary.

### Mount Aso Volcano Erupt

- It is the largest active volcano in Japan. The volcano stands on the **island of Kyushu**.
- Its peak is 1,592 meters above sea level. It has a **fairly large caldera**, having a circumference of about **120 km**.
- Japan is among the world’s most volcanically active countries. It is located on the Pacific “Ring of Fire” where large proportion of earthquakes and volcanic eruptions are recorded.

### Lukha River

- It is one of the major rivers of Meghalaya situated in the southern part of East Jaintia Hills District. Before entering into Bangladesh, it flows through Surma Valley.
- Activities such as mining of coal and limestone, manufacturing of cement, deforestation etc. have been taking place in the catchment area of river leading to changes in water quality, and hence river water pollution.
- The pilot project to rejuvenate Lukha river by using **algae** (micro and macro) to remove toxic contents from water has become a success.
- The process by which toxins are removed is called phytoremediation.
- Algae fix carbon dioxide by photosynthesis and remove excess nutrients at a minimal cost. It removes pathogens and toxic materials from waste water and helps in improving the pH level of the water.

### River Bhogdoi

- The **rampant coal mining** in Nagaland, coupled with **waste discharge from tea estates** and **encroachment** are **contaminating the waters of River Bhogdoi in Assam**.
- In **2019**, the Ministry of Environment, Forest, and Climate Change declared Bhogdoi as **one of the most polluted rivers in Assam** and 351<sup>st</sup> among the polluted rivers in the country.

- It originates from Mokokchung in Nagaland where it is also known as Tsujenyong nullah and is the south bank tributary of the River Brahmaputra.
- It is an inter-state river (flowing between Assam and Nagaland) and joins the Dhansiri river near its confluence with the Brahmaputra.
- **Issues**
  - Coal mining in Nagaland introduced high levels of manganese in the river.
  - Chemical waste from tea gardens is turning the river poisonous and polluted.
  - The drains carry industrial and residential wastes. The river has become heavily silted, reducing its carrying capacity.

### Faroe Island

- The traditional annual killing of whales and dolphins sparked controversy after it emerged that over 1,400 marine animals were killed in this year's event in Faroe Islands.
- The Faroe is a North Atlantic archipelago located 320 kilometers north-northwest of Scotland, and about halfway between Norway and Iceland.
- Like Greenland, it is an autonomous territory of the Kingdom of Denmark.
- The Atlantic white-sided dolphin is a distinctively colored dolphin found in the cool to temperate waters of the North Atlantic Ocean. The species is endemic to the North Atlantic Ocean.
- The distribution limits are Norwegian Sea in northeast; Davis Strait in northwest; North Carolina in southwest and Celtic Sea in southeast (possible range extension to the Azores).
- **Conservation Status:** IUCN: Least Concern; CITES: Appendix II

### Lake Tanganyika

As per a report by Save the Children (a humanitarian organisation), migration in East Africa's Burundi in recent years has been seen mainly because of the rapid and significant rise of Lake Tanganyika.

#### Key Points

- It is the second-largest lake in eastern Africa. It covers about 12,700 square miles,
- It is the longest freshwater lake in the world and 2<sup>nd</sup> deepest after Lake Baikal in Russia.
- The lake is shared among four countries namely Burundi, Democratic Republic of the Congo (DRC), Tanzania, and Zambia.
- It is situated on the line dividing the floral regions of eastern and western Africa. Oil palms, which are characteristic of the flora of western Africa, grow along the lake's shores.
- The largest rivers discharging into the lake are the Malagarasi, the Ruzizi, and the Kalambo. Its outlet is the Lukuga River, which flows into the Lualaba River.
- Rice and subsistence crops are grown along the shores, and fishing is of some significance. Hippopotamuses and crocodiles abound, and the birdlife is varied.

### Glasgow Glacier

- Recently, a glacier in far-off Antarctica has been formally named Glasgow Glacier in honour of Glasgow, Scotland, which is hosting the high-level UN climate conference.
- It is 100-kilometre-long body of ice which has been rapidly melting.

- Scientists have studied a chain of glaciers in the **Getz basin** of West Antarctica. 14 glaciers in the Getz Basin (part of Antarctica's largest ice shelf) are thinning by an average of 25% between 1994 -2018.
- Aside from Glasgow, the **eight** newly named glaciers are Geneva, Rio de Janeiro, Berlin, Kyoto, Bali, Stockholm, Paris, and Incheon, all named after towns that hold key UN climate conferences.
- Over the past 40 years, satellites have observed huge iceberg **calving events**, changes in the flow of glaciers, and rapidly thinning ice demonstrating the devastating impact of global warming.

### Great Pacific Garbage Patch

- The garbage patch is two vortexes filled with trash in the Pacific Ocean.
- They're also known as **gyres**, which is when two ocean currents come together and create a hurricane-like current and materials get caught in the gyres.
- These patches are not in solid masses of tangled plastic every time, these patches actually dispersed across hundreds of miles of the Pacific.

### Cause Of First Mass Extinction

Known as the **Late Ordovician** mass extinction.

#### Extinction

- Extinction is a part of life, and species disappear all the time. About 98% of all the species that have ever existed on our planet are now extinct.
- Earth's normal extinction rate is often thought to be somewhere between **0.1 and 1 species per 10,000 species per 100 years**. This is known as the **background rate of extinction**.

#### Mass Extinction

A mass extinction as around three-quarters of all species dying out over a short geological time, which is anything less than 2.8 million years

#### About Late Ordovician- 1st Mass Extinction

- The Late Ordovician mass extinction that occurred about 445 million years ago killed about 85% of all species.
- It also destroyed several corals, conodonts, echinoderms, trilobites, bivalves and graptolites.
- It did not affect the ecosystem of the structures as that of the other mass extinctions.
- It was caused by **climate cooling**. The cooling climate likely changed the ocean circulation pattern. This caused a disruption in the flow of oxygen-rich water from the shallow seas to deeper oceans, leading to a mass extinction of marine creatures.

#### The Other Big Extinction Events Were

- **The Devonian-2<sup>nd</sup> mass extinction** - It occurred about 375 million years ago, wiped out about 75% of the world's species. This was a period of many environmental changes, including global warming and cooling, a rise and fall of sea levels and a reduction in oxygen and carbon dioxide in the atmosphere. We don't know exactly what triggered the extinction event.
- **The Permian-3<sup>rd</sup> mass extinction** - It occurred about 250 million years ago, also known as the **Great Dying** caused the extinction of over 95% of all species. Some scientists think Earth was hit by a large asteroid which filled the air with dust particles that blocked out the Sun and caused acid rain.

- **The Triassic – 4<sup>th</sup> mass extinction** - It occurred 200 million years ago, eliminated about 80% of Earth's species, including some dinosaurs. This was probably caused by colossal geological activity that increased Co2 levels and global temperatures, as well as ocean acidification.
- **The Cretaceous- 5<sup>th</sup> mass extinction** - It occurred 65 million years ago, killing 78% of all species, including the remaining **non-avian dinosaurs**. This was most likely caused by an asteroid hitting the Earth in what is now Mexico, potentially compounded by ongoing flood volcanism in what is now India.

**The Sixth Mass Extinction**

- The **Holocene extinction** also referred as the 6<sup>th</sup> mass extinction or Anthropocene extinction is an **ongoing extinction event** of species during the present Holocene epoch as a result of human activity.
- Rates of extinction are faster & are estimated to be 100-1000 times faster than in the previous ones.

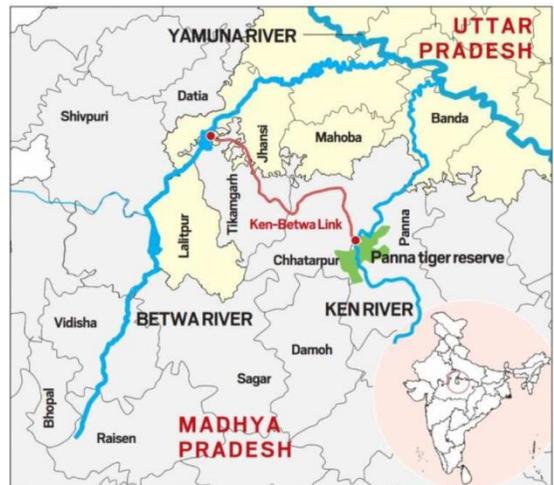
**Ken-Betwa Link Project (KBLP)**

- The Union Cabinet recently approved the funding and implementation of **Ken-Betwa Link Project (KBLP)**.
- KBLP is the **first project** under **National Perspective Plan (NPP)** for interlinking of rivers. It involves transferring of water from Ken River in Madhya Pradesh to Betwa river in Uttar Pradesh, both tributaries of the Yamuna. The project will be completed in eight years.
  - The NPP comprised two components: **Himalayan Rivers Development** and **Peninsular Rivers Development**.
  - Based on the NPP, the National Water Development Agency (NWDA) identified 30 river links—16 under Peninsular component and 14 under Himalayan Component. KBLP is a part of the Peninsular component.
  - The following **clearances** are required for the interlinking of river projects:
    - Techno-economic (given by the Central Water Commission);
    - Forest Clearance and Environmental clearance (Ministry of Environment & Forests);
    - Resettlement and Rehabilitation (R&R) Plan of Tribal Population (Ministry of Tribal Affairs);
    - Wildlife clearance (Central Empowered Committee).

**Details Of The Project:** The project has **two phases**, with mainly four components.

Phase-I	<ul style="list-style-type: none"> <li>• It will involve one of the components — <b>Daudhan Dam complex</b> and its subsidiary units such as Low Level Tunnel, High Level Tunnel, Ken-Betwa Link Canal and power houses.</li> </ul>
Phase-II	<ul style="list-style-type: none"> <li>• It will involve three components — Lower Orr Dam, Bina Complex Project and Kotha Barrage.</li> </ul>

- The total **cost** of KBLP has been assessed at **Rs.44,605 crore**. The Centre would fund Rs 39,317 crore for the project, with Rs 36,290 crore as a grant and Rs 3,027 crore as a loan.
- The Ken-Betwa Link Canal will be **221 km long**, including a 2-km long tunnel.
- A Special Purpose Vehicle (SPV) called Ken-Betwa Link Project Authority (KBLPA) will be set up to implement the project.
  - ✓ In fact, the Centre has initiated the process to create the **National Interlinking of Rivers Authority (NIRA)**.
  - ✓ NIRA would be an independent autonomous body for planning, investigation, financing and implementation of the interlinking of river projects in the country. It will have powers to set up SPV for individual link projects.



**Benefits Of The Project:** It is expected to irrigate 10.62 lakh hectares annually, provide drinking water supply to 62 lakh people and generate 103 MW of hydropower and 27 MW of solar power.

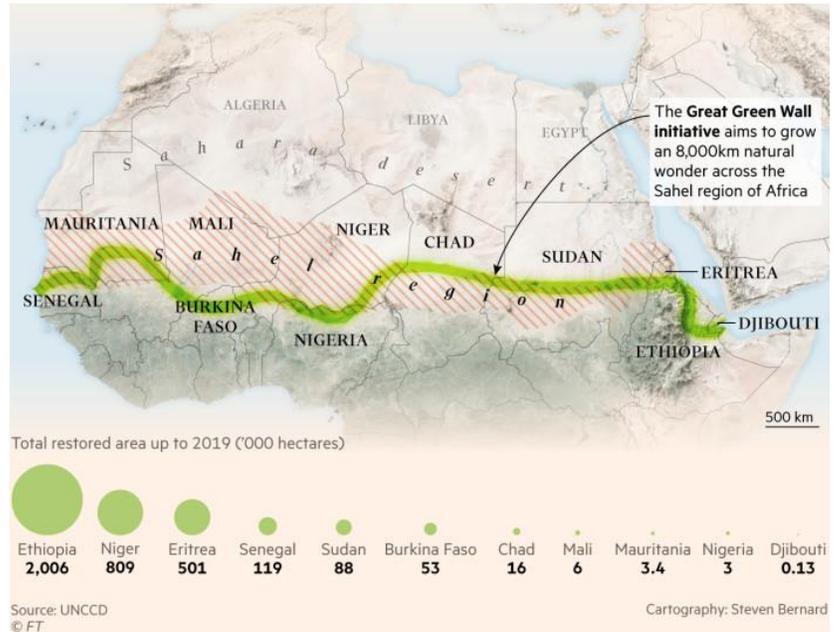
**Issues With The Project:** The reservoir of Daudhan dam will submerge an area of 5803 ha under Panna Tiger Reserve (PTR). This includes 4141 ha of forest area which is about 7.6% of the total PTR area. To mitigate this, three Wildlife Sanctuaries (WLS), viz Nauradehi, Rani Durgawati of MP and Ranipur WLS of UP are planned to be integrated with PTR.

## Great Green Wall

Recently, Food and Agriculture Organization (FAO) of the United Nations said in a study that Africa's Great Green Wall (GGW) programme is an important contribution towards combating climate change.

### About Great Green Wall

- The Great Green Wall is an African-led movement with an epic ambition to grow an **8,000-kilometre-long and 15-km-wide** mosaic of trees, grasslands, vegetation and plants across the entire width of Africa.
- It was launched in **2007 by African Union**, this green wall snakes the **Sahel region** from Senegal in the West to Djibouti in the East of Africa.
- The total area of the GGW initiative extends to 156 Mha, with the largest intervention zones located in Niger, Mali, Ethiopia and Eritrea.
- The Great Green Wall is a symbol of hope in the face of one of the biggest challenges of our time that is desertification.
- Once complete, the Great Green Wall will be the largest living structure on the planet, 3 times the size of Great Barrier Reef.



### Objectives

- By 2030, the ambition of the initiative is to **restore 100 million ha** of currently degraded land, sequester 250 million tons of carbon and create 10 million green jobs.
- So far between 2007 and 2019, the Great Green Wall initiative has restored only four million hectares of land.

## Wildlife (Protection) Amendment Bill, 2021

Recently, the government has proposed an amendment to Wildlife Protection Act 1972.

### What Are The New Amendments

1. The amendments propose to streamline wildlife management and monitoring by setting up **standing committees of state wildlife boards**. These committees will act like the National Board for Wildlife (NBWL). It will be able to make decisions on wildlife management and permissions granted for projects without having to refer most projects to the NBWL.
2. It also proposes to insert a **new chapter VB** in the parent Act for the regulation of international trade in endangered species of wild fauna and flora.
3. The Ministry has also **rationalized Schedules** for Wildlife under the Act, bringing it **down from 6 to 4 major schedules**.

4. A new **section 42A** has also been inserted. Any article or animal surrendered under this Section shall become the property of the State Government.
5. The Ministry has also mandated that **Wildlife Management Plans** which are developed for sanctuaries and national parks across the country will now become a part of the Wildlife Act and will have to be approved by the Chief Wildlife Warden of the state. Earlier, the plans were approved through executive orders.

#### Need For The Amendment

- It seeks to ensure that the Wildlife Protection Act, 1972 complies with the requirements of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (**CITES**).
- India has been blacklisted by CITES once before, and if a second blacklisting were to happen, then India will no longer be able to trade in important plant specimens. This would affect the livelihood of a large section of Indian society that relies heavily on this trade.

#### Wildlife (Protection) Act, 1972

- India is the first country in the world which has made provisions for environmental protection in the constitution.
- The Act provides for the constitution of a wildlife advisory board, wildlife wardens, specifying their powers and duties. The Act created **six schedules** which gave varying degrees of protection.
  - ✓ **Schedule 1 and Part 2 of Schedule II:** Species have absolute protection and penalties are highest for violation.
  - ✓ **Schedule III and IV:** Also protected but penalties are lower.
  - ✓ **Schedule V:** Animals listed here can be hunted.
  - ✓ **Schedule VI:** Plants listed here are prohibited from cultivation, collection, and trade.

#### About CITES

- **CITES is an international treaty** to prevent species from becoming endangered or extinct because of international trade. Although CITES is **legally binding on the Parties**, it does not take the place of national laws.
- Under this treaty, countries work together to **regulate the international trade of animal and plant species** and ensure that this trade is not detrimental to the survival of wild populations.
- CITES was drafted as the result of a resolution adopted in 1963 at a meeting of the **International Union for the Conservation of Nature (IUCN)** in Nairobi, Kenya.
- Any trade in protected plant and animal species should be sustainable, based on sound biological understanding and principles.
- With 183 Member States, CITES remains one of the world's most powerful tools for biodiversity conservation through the regulation of trade in wild fauna and flora.

#### Kasturirangan Committee on Western Ghats

Recently, the Karnataka Government has informed the Centre government that the state is opposed to the Kasturirangan Committee report on Western Ghats.

#### Recommendations of Kasturirangan Committee Report

- **Area Covered:** It proposes **37%** of the total area of Western Ghats which is roughly **60,000 square kilometres**, to be declared as **eco-sensitive area (ESA)**.
- **Activities Banned:** It recommended a blanket ban on mining, quarrying, setting up of red category industries and thermal power projects.
- It also stated that the impact of infrastructural projects on the forest and wildlife should be studied before permission is given for these activities.

- **UNESCO Tag:** It also stated that the UNESCO Heritage tag is an opportunity to build global and domestic recognition of the enormous natural wealth that exists in the Western Ghats.
  - The 39 sites are located across Western Ghats and distributed across the states (Kerala 19), Karnataka (10), Tamil Nadu (6) and Maharashtra (4).

#### **Why Have Karnataka Rejected The Report?**

- Karnataka has the highest percentage of the ESA- **46.50%**. The state government believes that implementation of the report will halt developmental activities in the region. 20,668 sq km of the area falls in Karnataka covering 1,576 villages.
- The Kasturirangan report has been prepared based on the **satellite images**, but the ground reality is different. People of the region have adopted agriculture and horticultural activities in an eco-friendly manner. Karnataka believes that priority has been accorded for environment protection under the Forest Protection Act 1980.

#### **Eco-Sensitive Areas**

- Eco-Sensitive Areas (ESAs) are located within **10 kms around Protected Areas, National Parks and Wildlife Sanctuaries**.
- Even regions larger than 10 km in width might be included in the ESZ if they include sensitive corridors, connectedness, and biologically significant patches that are vital for landscape connection.
- ESAs are area notified by the Ministry of Environment, Forest and Climate Change (**MoEFCC**) under **Environment Protection Act 1986**.
- The purpose of declaring ESAs is to create some kind of "shock absorbers" to the protected areas by regulating and managing the activities around such areas.
- They also act as a transition zone from areas of high protection to areas involving lesser protection.

#### **IUCN World Conservation Congress 2020**

- The world's largest environmental decision-making forum 'IUCN World Conservation Congress 2020' (postponed from June 2020 to September 2021) was held in Marseille, France.
- **International Union for the Conservation of Nature (IUCN)** conducts the World Conservation Congress which is held **every four years**. The **first** was conducted **in the United States in 1948**.
- IUCN is a **membership Union** composed of both government and civil society organisations. It harnesses the experience, resources and reach of its more than 1,400 Member organisations and the input of more than 18,000 experts.
- **Global Indigenous Agenda**
  - It calls for the secure recognition for collective **indigenous rights** and governance of lands, territories, waters, coastal seas and natural resources.
  - It was **developed by IUCN's Indigenous Peoples Organisation Members**.
- **IUCN Red List Update**
  - **Tuna Species:** Four of the seven most commercially fished tuna species have shown signs of recovery, namely **Atlantic bluefin tuna, Southern bluefin tuna, Albacore, yellowfin tunas, bigeye tuna, Pacific bluefin tuna**
  - Indonesia's **Komodo dragon** is the world's largest living lizard, and it has been moved from **vulnerable to endangered**.

**Kunming Declaration On Biodiversity**

- Kunming Declaration was adopted by over 100 countries at the **first part** of the 15th meeting of the Conference of the Parties (COP 15) to the **UN Convention on Biological Diversity (CBD)** in the Chinese city of Kunming, which was held virtually on 12th and 13th October 2021.
- **Kunming Declaration:** Signed by all countries, it calls for “urgent and integrated action” to reflect biodiversity considerations in all sectors of the global economy.
- **Theme:** “Ecological Civilization: Building a Shared Future for All Life on Earth”.
- **“30 by 30” Goal,** is a proposed commitment to protect 30% of land and ocean by 2030.

**Convention on Biological Diversity (CBD)**

- The CBD, known informally as the Biodiversity Convention, is a multilateral **legally binding** treaty. The convention was opened for signature at the **Earth Summit** in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993.
- The **United States** is the only UN member state which has not ratified the convention.
- The convention has **three main goals:**

- conservation of biodiversity
- sustainable use of its components
- fair and equitable sharing of benefits arising from genetic resources

- Its objective is to develop national strategies for the conservation and sustainable use of biological diversity and it is often seen as the key document regarding sustainable development.
- It has two supplementary agreements, the **Cartagena Protocol and Nagoya Protocol**.

**Cartagena Protocol**

• It is an international treaty governing the **movements of living modified organisms (LMOs)** resulting from modern biotechnology from one country to another

**Nagoya Protocol**

• It deals with **Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS)**.

**Commitments Under Kunming Declaration**

The document lists **17 commitments** for member countries, urging them to cooperate at the international level as well as domestic level. Some of these commitments are Biodiversity protection, Community involvement, financial incentives, integrated conservation, strengthening measures for developing and regulating biotechnology etc.

**Kunming Biodiversity Fund**

- China has pledged to inject USD 233 million into a new fund to protect biodiversity in developing countries. The fund is being referred to by China as Kunming Biodiversity Fund.
- However, some countries have reservations regarding this fund. Some countries have called this fund as “a drop in the bucket” given that China is the world’s biggest polluter.

**World’s First ‘Five-Country Biosphere Reserve’**

- **Mura-Drava-Danube (MDD)** was declared as **world’s first ‘five-country biosphere reserve’** by **UNESCO**.
- **About MDD:** The biosphere reserve **covers 700 kilometers** of the **Mura, Drava, and Danube rivers** and stretches across **Austria, Slovenia, Croatia, Hungary, and Serbia**.

- The total area of the reserve is a **million hectares** - in the so-called '**Amazon of Europe**', which is now the **largest riverine protected area in Europe**.
- The biosphere represented an **important contribution to the European Green Deal** (climate action plan) and contributed to the **implementation of the EU Biodiversity Strategy** in the Mura-Drava-Danube region.
- The area is **one of the richest in Europe** in terms of species diversity.
- It is **home to** floodplain forests, gravel and sandbanks, river islands, oxbows, and meadows.

### Flaws In ESZ Of Deepor Beel

Local stakeholders have found flaws in the **recently notified** eco-sensitive zone (ESZ) of Deepor Beel Wildlife Sanctuary (Assam's **only Ramsar Site**).

#### Deepor Beel

- It is a **Ramsar site** and a part of it is also a wildlife sanctuary (Rani Reserve forest) in Guwahati, Assam.
- Deepor Beel is a permanent **freshwater lake**, which is in an earlier channel of the **Brahmaputra River**.
- It is the only major storm-water storage basin for Guwahati city.

### Debrigarh Wildlife Sanctuary

The wildlife wing of Odisha's Forest department decided to relocate around 420 families from four zero connectivity villages in Debrigarh wildlife sanctuary. The move is aimed to reduce man-animal conflict and provide better living conditions to the relocated families.

#### About Debrigarh Wildlife Sanctuary

- Located in Odisha, a large number of migratory birds visit this sanctuary. Diving ducks are a common sight in the sanctuary.
- It is also home to endangered species of **four-horned antelope**.
- A third of the sanctuary's area is bound by the **Hirakud Dam**.

#### Protected Area in Odisha

<b>National Park</b>	• Bhitarkanika , Simlipal
<b>Wildlife sanctuary</b>	• Debrigarh, Sunabeda , Nandankanan, Karlapat, Hadagarh, Kotagarh, Ushakothi , Chilika, Kuldiha, Tikarpada
<b>Marine Sanctuary</b>	• Gahirmatha

### Mudumalai Reserve

Tiger nicknamed MDT 23 believed to have been responsible for the death of two herders in the **Mudumalai Tiger Reserve** and Gudalur was **tranquilized by Forest Department**.

#### About Mudumalai Tiger Reserve

- Located in the Nilgiris District of Tamil Nadu state, at the tri-junction of three states, viz, Karnataka, Kerala, and Tamil Nadu.
- It has a common boundary with Wayanad Wildlife Sanctuary (Kerala) on the West, Bandipur Tiger Reserve (Karnataka) on the North, and the Nilgiris North Division on the South and East and Gudalur Forest Division on the Southwest, together forming a large conservation landscape for flagship species such as Tiger and Asian Elephant.

### Threat To Bhitarkanika National Park

Some environmental activists pointed out that Odisha's Bhitarkanika National Park, is under severe threat due to planned diversion of freshwater from the **Brahmani river basin**.

#### Bhitarkanika National Park

- It has the **second-largest mangrove forest in India** and is a **Ramsar site**. It was declared a National Park in **1988**.
- Bhitarkanika is **located in the estuary of Brahmani, Baitarani, Dhamra, and Mahanadi river** systems.
- It is **one of Odisha's finest biodiversity hotspots** and is famous for migratory birds, turtles, estuarine crocodiles, and countless creeks.
- It is said to house **70% of country's estuarine or saltwater crocodiles**, conservation of which was started way back in 1975.
- **Protected Areas:** The Bhitarkanika is represented by **3 Protected Areas** which are:
  - Bhitarkanika National Park.
  - Bhitarkanika Wildlife Sanctuary.
  - Gahirmatha Marine Sanctuary.

#### River Brahmani

- It is a river in **Odisha state**. Formed by the **confluence of the Sankh and South Koel rivers** in southern Bihar state, the Brahmani flows for **300 miles**.
- It winds generally south-southeast past Bonaigarh and Talcher and then turns east to **join northern branches of Mahanadi River**, which then **empties into the Bay of Bengal** at **Palmyras Point**.
- It is **one of the few rivers that cut across the Eastern Ghats**, and it has formed a **minor gorge at Rengali**, where a dam has been built.

### Cheetahs To Be Reintroduced In Kuno National Park

- Union Environment Ministry officials have confirmed that Cheetahs from **Namibia and South Africa** are likely to be reintroduced in **Kuno National Park** by the end of 2021.
- Just as the tiger is the **flagship species** of the **forest**, the cheetah is the **flagship species of the grassland, scrubland and open forest**. Therefore, with the reintroduce of the cheetah, these dryland ecosystems of India will have a chance to return to their natural state.

#### About Cheetah

- Cheetah is one of the oldest of big cat species and also the **world's fastest land mammal**. It is native to Africa and central Iran.
- **Asiatic cheetah**, which is now found only Iran, is classified as a **critically endangered** species in the IUCN Red List. While the **African cheetah** is classified as a **vulnerable** in the IUCN red list.
- African cheetah is bigger in size as compared to Asiatic cheetah.
- In India, last spotted cheetah died in Chhattisgarh in 1947 and it was **declared extinct in the country in 1952**.

#### Kuno National Park

- Located in the Sheopur district of Madhya Pradesh, it is spread over an area of 748.76 sq. km.
- Kuno River, one of the **major tributaries of Chambal River**, flows through the entire length bisecting the National Park division.

### Earth Guardian Award

- **Parambikulam Tiger Conservation Foundation** has won the Earth Guardian Award for its efforts in support of tiger conservation and biodiversity.
- Parambikulam Tiger Conservation Foundation is a non-profit organisation, based in Kerala that facilitates conservation of tigers and biodiversity in the Parambikulam tiger reserve.
- These awards were instituted by NatWest Group India. They are part of an initiative that recognizes the efforts of *individuals and institutions* that are working to subvert the climate change by conserving & preserving biodiversity in India.

### Parambikulam Tiger Reserve

- It also includes erstwhile Parambikulam Wildlife Sanctuary. It is a protected area in the Palakkad district of Kerala. It was established in 1973.
- The sanctuary lies in Sungam range of hills in between Anaimalai Hills and Nelliampathy Hills.

### Haiderpur Wetland

India has designated Haiderpur wetland as the country's **47th Ramsar site, the 10<sup>th</sup>** in Uttar Pradesh.

#### About Haiderpur Wetland

- It is spread over an area of **6908 hectares** on Muzaffarnagar-Bijnor border between the Ganges and the Solani River in **Western Uttar Pradesh**.
- It is a **man-made lake** which was formed in 1984 and located within the boundaries of **Hastinapur Wildlife Sanctuary**.
- It provides habitat for numerous animal and plant species, including more than 30 species of plants, over 300 species of birds and many fish and mammal species. It supports more than 15 globally threatened species, such as the critically endangered gharial, endangered hog deer, steppe eagle and gold mahseer.

#### Significance of Wetlands

- The Ramsar Convention definition for wetlands includes **marshes, floodplains, rivers and lakes, mangroves, coral reefs and other marine areas no deeper than 6 metres at low tide**, as well as human-made wetlands such as waste-water treatment ponds and reservoirs.
- The IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) global assessment identified **wetlands as the most threatened ecosystem**. This **impacts 40% of the world's plant and animal species that live or breed in wetlands**, according to UNESCO.
- **30% of land-based carbon is stored in peatland**; one billion people depend on wetlands for their livelihoods; and **wetlands provide \$47 trillion in essential services annually**.
- **India has a total of 7,57,060 wetlands**, covering 1.6 crore hectares or **4.5% of India's area**. In India, wetlands are regulated under the **Wetlands (Conservation and Management) Rules, 2017**.

#### Ramsar Sites

- It is one of the crucial pillars of **Ramsar Convention**, the **only multilateral intergovernmental environmental agreement focussed on wetlands**.
- It was **adopted in 1971 in the Iranian city of Ramsar**, on the southern shore of the Caspian Sea.
- Known officially as 'the **Convention on Wetlands of International Importance** especially as Waterfowl Habitat' (or, more recently, just 'the Convention on Wetlands'), it came into force in 1975.
- The Convention on Wetlands **came into force for India on February 1, 1982**. Those wetlands which are of international importance are declared as Ramsar sites.
- The vision for creating this **Ramsar Sites** list is to 'develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human

life through the maintenance of their ecosystem components, processes and benefits/services’.

- Wetlands can be designated to Ramsar List under any (one or more) of the **9 criteria** that ranges from uniqueness of the site to those based on species and ecological communities supported.

#### The Montreux Record

- Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
- It is **maintained as part of the Ramsar List**.
- Currently, two wetlands of India are in Montreux record: **Keoladeo National Park (Rajasthan) and Loktak Lake (Manipur)**. Chilka Lake (Odisha) was placed in the record but was later removed from it.

#### Niranjanpur Wetland

- The majority of the fish in Dehradun's **Niranjanpur Wetland** has died.
- The **Niranjanpur Wetland is located in a desirable Dehradun** real estate neighborhood.
- In the winter, it draws everything from little local birds to **large migrating species**.
- Black kite hunts over its waterways while the **common moorhen (jal murgi)** swims in its pools.
- It also aids in the recharging of groundwater.

#### Four More Indian Sites Get Ramsar Recognition

##### 1. **Bhindawas Wildlife Sanctuary, Haryana**

- ✓ The largest wetland in Haryana, is a **man-made freshwater** wetland.
- ✓ Supports more than ten globally threatened species including the *endangered Egyptian Vulture, Steppe Eagle, Pallas’s Fish Eagle, and Black-bellied Tern*.

##### 2. **Sultanpur National Park, Haryana**

Supports more than 220 species of resident, winter migratory and local migratory waterbirds at critical stages of their life cycles. More than ten of these are globally threatened, including *critically endangered sociable lapwing, endangered Egyptian Vulture, Saker Falcon, Pallas’s Fish Eagle and Black-bellied Tern*.

##### 3. **Thol Lake Wildlife Sanctuary, Gujarat**

- ✓ It lies on the Central Asian Flyway and more than 320 bird species can be found here.
- ✓ The wetland supports more than 30 threatened waterbird species, such as the *critically endangered White-rumped Vulture and Sociable Lapwing, and the vulnerable Sarus Crane, Common Pochard and Lesser White-fronted Goose*.

##### 4. **Wadhvana Wetland, Gujarat**

- ✓ This is internationally important for its birdlife as it provides wintering ground to migratory waterbirds, including over 80 species that migrate on the Central Asian Flyway.
- ✓ Some species such as the *endangered Pallas’s fish-Eagle, the vulnerable Common Pochard, the near-threatened Dalmatian Pelican, Rey-headed Fish-eagle*.

#### NGT: All Encroachments To Be Removed From Gujarat’s Banni Grasslands Within Six Months

- The court said the **Maldharis** will continue to hold the right to conserve the community forests in **Banni Grasslands** area. These rights were granted to them as per provisions in **Section 3 of Forest Rights Act, 2006**.
- Situated near the **Great Rann of Kutch**, Banni Grassland is considered to be the **largest Grassland** in Asia (spread over 2618 sq km). Two ecosystems, **wetlands and grasslands** are juxtaposed in Banni.

- The word '**Banni**' comes from the Hindi word '**banai**', meaning made. The land here was formed from the sediments that were deposited by the Indus and other rivers over thousands of years.
- **Wildlife Institute of India (WII)** has identified this grassland reserve as one of the **last remaining habitats of cheetah** in India. Also, a possible reintroduction site for the species.

- Maldharis are a tribal herdsmen community in Gujarat. The literal meaning of Maldhari is a keeper (dhari) of the animal stock (mal).
- The Maldharis have lived in the Gir National Park, in the **Banni Grasslands Reserve area**, for the past thousand years.
- Maldhari community breeds Banni Buffaloes, a species endemic to the region. The buffaloes are adaptive to Kutch's hot weather condition

### Global Forest Goals Report, 2021

The Global Forest Goals Report 2021 was prepared by the Department of Economic and Social Affairs of the United Nations (**UNDESA**), through its United Nations Forum on Forests Secretariat (UNFFS). These goals are:

1. Reverse Forest Cover Loss
2. Improve Forest Benefits and Livelihoods
3. Protect forests and use sustainable Forest Products
4. Mobilize resources
5. Promote Inclusive forest Governance
6. Cooperate and work across sectors

Many regions, in particular, **Asia, Europe and Oceania, appear to be on track to reach one of the key targets of the Global Forest Goals**-increasing Forest area by 3% by 2030.

### Edayur Chilli And Kuttiaattoor Mango Of Kerala Receives GI Tag

- **Edayur Chilli**: It is a unique cultivar of this area with very low pungency. The distinctiveness can be attributed to its genetic makeup, the specific environmental and soil conditions of Edayur (Kerala) region and the traditional methods of cultivation.
- Kuttiaattoor mango is a popular and tasty traditional mango cultivar of Kuttiaattoor (Kerala).

### Plant Discoveries 2020

- Botanical Survey of India, in its new publication **Plant Discoveries 2020**, has added 267 new taxa/species to the country's flora.
- Among the new discoveries this year, nine new species of **balsams (Impatiens)**, one species of **wild banana** were discovered from Darjeeling; one species each of **wild Jamun** from Coimbatore; and **fern species** were recorded from Kandhamal in Odisha.
- 22% of discoveries were made from the **Western Ghats** followed by Western Himalayas (15%), Eastern Himalayas (14%), and Northeast Ranges (12%).
- **Significance**: India being a signatory to the **Convention on Biological Diversity (CBD)** is committed to work towards the prime objective of **Global Strategy of Plant Conservation** and the newly discovered species may offer potential source of wild edible plants, traditional drugs, cosmetics, and wild relative of crop plants.

### "Hara Bhara" Initiative

- Hara Bhara is a first-of-its-kind initiative where the **Telangana government** will be planting **50 lakh trees** across 12,000 hectares of land by 2030.

- **Seedcopter drone** by Startup **Marut Drones**, which had earlier deployed drones successfully in agricultural operations and for delivery of vaccines will be used to disperse seed balls over barren lands.
- The seed balls contain a variety of seeds rolled within a ball of clay, together with organic manure & fertilizer.

### Aerial Seeding

- It is a **plantation technique** wherein seed balls — seeds covered with a mixture of clay, compost, char, and other components — are **sprayed using aerial devices**, including planes, helicopters, or drones.
- The **plant species which are native** to the area and hardy, with seeds that are of an appropriate size for preparing seed balls are usually used for aerial seeding, with a higher survival percentage.
- Seeds balls/pellets are **dispersed in a targeted area** by low-flying drones, with the coating providing the required weight for seeds to airdrop on a predetermined location rather than getting deterred by the wind.
- These pellets **sprout when there is enough rain**, with nutrients present within them helping in initial growth.

### Advantages of Aerial Seeding

- **Access to Inaccessible Areas:** Areas that are **inaccessible**, having steep slopes or no forest routes, can be targeted using this method.
- **No Extra Attention Requires:** The **process of the seed's germination and growth is such that it requires no attention** after it is dispersed and thus seed pellets are known as the “fire and forget” way of planting.
- **Eliminate Need of Ploughing:** They **eliminate any need for ploughing and do not need to be planted** since they are already surrounded by soil, nutrients, and microorganisms.
- The clay shell also protects them from birds, ants and rats.
- **Prevents Soil Runoff:** Aerial application **does not cause soil compaction**, hence preventing soil runoff.
- This type of seeding technique will be most **useful for tropical forests because they absorb carbon much faster** than other forest types and also support much higher biodiversity.

### Pran Vayu Devta Pension Scheme (PVDPS) of Haryana

- It is an initiative to honour all those **trees** which are of the **age of 75 years and above** and have served humanity throughout their life by producing oxygen, reducing pollution, providing shade and so on.
- Such trees will be identified throughout the state and these will be looked after by involving local people in this scheme.
- For maintenance of trees older than 75 years, a **“pension amount” of Rs 2,500** would be given per year in the name of PVDPS. The pension shall be given by the Urban Local Bodies for the upkeep of the trees, installing plates, grilles etc.

Haryana is also launching **Oxy Van**. They are identified pieces of land, on which as many as 3 crore trees would be planted. The Oxy Vans will occupy 10 % of the 8 lakh hectares of land across Haryana.

### Maharashtra Govt's Proposed Amendment For Protection Of 'Heritage Trees'

- As per amendments to the **Maharashtra (Urban Areas) Protection and Preservation of Trees Act of 1975**, Tree Authority will be formed in local civic bodies and councils which will take all decisions regarding the protection of trees. The Tree Authority is tasked with “increasing the tree cover in urban areas and protecting the existing ones.”
- Further, it will have to ensure **tree census** to be carried out every **five years** along with counting of heritage trees. A proposal to cut more than 200 trees of age 5 years or more, will be referred to the state tree authority.

- A tree with an estimated age of 50 years or more shall be defined as a **heritage tree**.

### Desertification and Land Degradation Atlas of India

- It has been published by **Space Application Centre, ISRO, Ahmedabad**.
- It was released on the occasion of World Day to Combat Desertification and Drought, observed on 17 June.
- The theme for 2021 is "Restoration. Land. Recovery. We build back better with healthy land".
- The Atlas provides a state wise area of degraded lands for the time frame 2018-19. It also provides the change analysis for the duration of 15 years, from 2003-05 to 2018-19.
- India is striving towards achieving the national commitments of Land Degradation Neutrality (LDN) and restoration of 26 million ha of degraded land by 2030.

### High-Level Dialogue on Desertification, Land Degradation and Drought

- The High-level Dialogue will assess the progress made in fight against desertification, land degradation, and drought during the **UN Decade for Deserts (2011-2020)** and the Fight against Desertification which is coming to an end in 2020 and map the way forward.
- PM Modi is the President of 14th Session of the Conference of Parties of United Nations Convention to Combat Desertification (UNCCD).

UNCCD was established in 1994 and is the sole legally binding international agreement linking environment and development to sustainable land management. It is the only convention stemming from direct recommendation of Rio Conference's Agenda 21. The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found.

### Other Initiatives

**Delhi Declaration of 2019**, signed by 14th CoP of the UNCCD, called for better access and stewardship over land, and emphasised gender-sensitive transformative projects.

**Bonn Challenge**: To bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030.

**Great Green Wall**: Initiative by Global Environment Facility (GEF), where eleven countries in Sahel-Saharan Africa have focused efforts to fight against land degradation and revive native plant life to the landscape.

### India's First Cryptogamic Garden At Chakrata, Dehradun

- Inaugurated recently in the Chakrata town of Dehradun, Uttarakhand, the garden will be housing nearly 50 species of **lichens, ferns and fungi** (collectively known as **Cryptogamae**)
- Plant kingdom can be divided into two sub-kingdoms viz. **Cryptogams and phanerogams**.
  - Cryptogams consist of seedless plants and plant-like organisms whereas phanerogams consist of seedbearing plants.
- The word "**Cryptogamae**" implies '**hidden reproduction**', referring to the fact that they do not produce any reproductive structure, seed, or flower but reproduces with the help of spores.

### Bihar's Valmiki Tiger Reserve (VTR) Have Started Planning For Conservation Of Vultures

- Different species of vultures including Egyptian vulture, Griffon vulture, White-rumped vulture and Himalayan griffon were among the 150 individuals spotted in VTR.

- VTR is located at the India-Nepal border in the West Champaran district of Bihar. VTR forms the **easternmost limits of the Himalayan Terai forests in India**. Situated in the Gangetic Plains bio-geographic zone of the country, the forest has a combination of bhabar and terai tracts.
- **Tharu**, a scheduled tribe, is the dominant community in the landscape of the Valmiki National Park.
- **Indian flying foxes** (*IUCN Status: Least Concern*) can be sighted here.

There are nine recorded species of vultures in India — the Oriental white-backed, long-billed, slenderbilled, Himalayan, red-headed, Egyptian, bearded, cinereous and the Eurasian Griffon.

### Elephants Killing

According to Union Ministry of Environment, Forest and Climate Change (MoEFCC), 1,160 elephants were killed in the country due to reasons other than natural causes in the past 10 years.

#### Data Related To Death

Cause of Death	Electrocution	Train Hits	Poaching	Poisoning
Number	741	186	169	64

- Karnataka and Odisha lost 133 elephants each due to electrocution during the period and Assam reported 129 deaths.
- Among casualties due to train hits, Assam stood first with 62 deaths, followed by West Bengal at 57.
- Assam reported the highest number of elephants poisoned - 32, and Odisha stood second with 15 deaths.
- India had a total of 29,964 wild elephants as per an estimate done in 2017. Karnataka has the highest elephant population at 6049, followed by Assam (5719), Kerala (3054), and Tamil Nadu (2761).

#### Lemru Elephant Reserve

- Located in Chattisgarh, it is planned to prevent human-animal conflict in the region, with **elephants moving into Chhattisgarh from Odisha and Jharkhand**.
- It has run into controversy as the government is planning to decrease the area of the proposed reserve from 1,995 sq km to 450 sq km, which is the part of **Hasdeo Aranya forests**, a very diverse biozone that is also rich in coal deposits.
- Of 22 coal blocks in the area, 7 have already been allotted with mines running in three, and in the process of being established in the other four.

### Project RE-HAB

Khadi and Village Industries Commission (KVIC) launched Project RE-HAB at Village Mornoi in Goalpara district of Assam.

#### About Project RE-HAB (Reducing Elephant-Human Attacks using Bees)

- Under the Project, **Bee fences** are created. The honey bees in these fences' thwart elephant attacks in human territories.
- The boxes are attached to a string, so when the elephants try to pass through the string, a pull or tug leads the bees into the swarm towards the elephant and prevents them from moving further.
- It is scientifically recorded that elephants are annoyed by honey bees.
- The project is a sub-mission of **KVIC National Honey Mission**.
- It was **first launched in Karnataka (Nagarahole National Park and Tiger Reserve)**. After its huge success in the state, this project is launched in many other states.

**Khadi and Village Industries Commission (KVIC)**

- It is a statutory body established under Khadi and Village Industries Commission Act, 1956.
- It comes under the **Ministry of Micro, Small and Medium Enterprises**.
- The main function of KVIC is to plan, promote, organize and implement programmes for the development of **village industries in rural areas**.

**Species In News**

**Tiger**

International Tiger Day is celebrated on July 29 every year to raise awareness about the dwindling population of tigers -- listed as **endangered** in IUCN red list, Schedule I in Wildlife Protection Act, 1972; CITES Appendix 1 Species.

**Saint Petersburg Tiger Summit in Russia** declared that the tiger populated countries would make efforts to double the tiger population by the year 2022, also called **TX2 initiative**.

**Few Facts**

- India’s tiger population stands at **2967** which is 70 % of the global tiger population. **Madhya Pradesh** has the highest number of tigers at 526, closely followed by **Karnataka (524)** and **Uttarakhand (442)**.
- **Kanha Tiger Reserve** in Madhya Pradesh is the **first tiger reserve in India to officially introduce a mascot, Bhoorsingh the Barasingha**.
- Also 14 tiger reserves had received the accreditation of **Conservation Assured | Tiger Standards (CA|TS)**. CA|TS is a set of criteria that allows tiger sites to check if their management will lead to successful tiger conservation. CA|TS has been agreed upon as an accreditation tool by the global coalition of Tiger Range Countries (TRCs) and has been developed by tiger and protected area experts. The 14 tiger reserves which have been accredited are --
  - Manas, Kaziranga and Orang in Assam.
  - Satpura, Kanha and Panna in Madhya Pradesh.
  - Pench in Maharashtra.
  - Valmiki Tiger Reserve in Bihar.
  - Dudhwa in Uttar Pradesh.
  - Sunderbans in West Bengal.
  - Parambikulam in Kerala.
  - Bandipur Tiger Reserve of Karnataka and
  - Mudumalai and Anamalai Tiger Reserve in Tamil Nadu

Recently, a Royal Bengal Tiger has been spotted in Buxa tiger reserve in Alipurduar, North Bengal, after at least 23 years.

- Last year in 2020, a report released by the Ministry of Environment said Buxa tiger reserve has no tiger.
- The main rivers flowing across the Tiger Reserve are **Sankosh**, Raidak, Jayanti, Churnia, Turturi, Phashkhawa, Dima and Nonani.

<p><b>Black Tigers</b></p> 	<ul style="list-style-type: none"> <li>● Black tigers are found only in <b>Simlipal, Odisha</b>.</li> <li>● <b>Pseudo-melanistic tigers</b> are also present in three zoos in India -Nandankanan (Bhubaneswar), Arignar Anna Zoological Park (Chennai), and Bhagwan Birsa Biological Park (Ranchi).</li> <li>● All of them have <b>ancestral links</b> to one individual from Simlipal.</li> <li>● <b>Pseudo-melanism</b> is a <b>rare pattern variant</b>, distinguished by stripes that are broadened and fused together, is also observed in both wild and captive populations.</li> <li>● <b>Genetic basis of pseudo-melanism is linked to a single mutation</b> in Transmembrane Aminopeptidase Q (Taqppep).</li> <li>● <b>Pseudo-melanism is caused by a recessive (hidden) gene</b> that <b>expresses</b> itself in the absence of a dominant gene.</li> <li>● So, two normal-pattern tigers carrying the recessive (pseudo-melanism) gene will have to breed together for a <b>one-in-four</b> probability of giving birth to a black cub.</li> <li>● <b>Inbreeding increases the chances of the two same recessive genes</b> coming in the offspring.</li> <li>● The darker coat color of the mutants offers them a <b>selective advantage</b> when hunting in dense closed canopy and relatively darker forested areas of Similipal as compared to the open plains of most other tiger habitats.</li> </ul>
<p><b>Leopard</b></p>	<p>Union Environment Ministry has released a new report titled, “<b>Status of Leopards, Co-predators and Megaherbivores 2018</b>” on International Tiger Day (29th July).</p> <ul style="list-style-type: none"> <li>● Leopard count has increased 63 % from 2014-2018 as per official report.</li> <li>● Largest number of leopards have been estimated in <b>Madhya Pradesh (3,421)</b> followed by <b>Karnataka (1,783)</b> and <b>Maharashtra (1,690)</b>.</li> </ul> <p><b>Status of Leopard</b></p> <ul style="list-style-type: none"> <li>● <b>Vulnerable</b> in IUCN Red list, Schedule I of Indian Wildlife (Protection) Act, 1972, and Appendix I of CITES.</li> <li>● Nine subspecies of the leopard have been recognized.</li> </ul>
<p><b>Asiatic Lion</b></p>	<p>Eight Asiatic lions at Hyderabad zoo have tested positive for covid-19. This is the first time in India that <b>transmission of virus to animal through human</b> has been detected.</p> <p><b>Few Facts</b></p> <ul style="list-style-type: none"> <li>● Asiatic lions are <b>slightly smaller</b> than African lions. The most striking morphological character, which is always seen in Asiatic lions, and rarely in African lions, is a <b>longitudinal fold of skin</b> running along its belly.</li> <li>● The species is listed as <b>Endangered</b> in the IUCN Red List, Appendix 1 in CITES, and Schedule 1 in Wildlife Protection Act, 1972.</li> <li>● The “<b>Asiatic Lion Conservation Project</b>” has been launched by the Union Ministry of Environment, Forests and Climate Change (MoEFCC). The project has been approved for three financial years from 2018 to 2021.</li> <li>● Since 1965, the Forest Department has been regularly conducting Lion Census <b>every five years</b>. This year it was delayed due to lockdowns. The <b>first Lion Census</b> was conducted by the <b>Nawab of Junagadh in 1936</b>.</li> <li>● The number of Asiatic lions, who live primarily in the Gir forests, was estimated to be 674 in 2020, an increase of 29 per cent in five years (from 523 in 2015 to 674 lions).</li> </ul>

	<ul style="list-style-type: none"> <li>The lion population in the state of Gujarat has <b>doubled since 2001</b>.</li> <li>The count was estimated from a <b>population observation exercise</b> called <b>Poonam Avlokan</b> in place of the 15<sup>th</sup> Lion Census.</li> <li><b>Poonam Avlokan</b> is a <b>monthly in-house exercise</b> carried out <b>every full moon</b>. It was a mechanism developed by the <b>Forest Department in 2014</b> as part of preparations for the 2015 Lion Census.</li> </ul> <p><b>Gir National Park</b></p> <ul style="list-style-type: none"> <li>It is the <b>only natural habitat of Asiatic lions</b> situated in Junagadh district of Gujarat.</li> <li>It was declared as a <b>sanctuary in 1965 and a national park in 1975</b>.</li> <li>Gir is often linked with "<b>Maldharis</b>" who have survived through the ages by having a <b>symbiotic relationship</b> with the lions.</li> </ul>
<p><b>Blue Bull (Nilgai)</b></p> 	<p>Recently, Bihar government has decided that, to control the increasing population of blue bull, they will sterilise them instead of culling them. Nearly 4,729 blue bulls were culled from 2016-2019, according to data by the forest department.</p> <p><b>About Blue Bull</b></p> <ul style="list-style-type: none"> <li>Blue Bull, locally known as the <b>nilgai or ghurparas</b>, is usually found in India, Nepal and Pakistan.</li> <li>It listed as <b>Least Concern</b> in the IUCN Red List of Threatened Species and in Schedule III of the Wildlife (Protection) Act, 1972.</li> <li>Major threats: Farmers kill them for destroying their crops and habitat loss.</li> </ul>
<p><b>Indian Desert Cat</b></p> 	<p>It has been spotted for the first time in Madhya Pradesh's Panna Tiger Reserve.</p> <p><b>About Indian Desert Cat</b></p> <ul style="list-style-type: none"> <li>It is also known as the <b>Asiatic Wildcat or the Asian Steppe Wildcat</b>. They are found in deserts and can survive without water.</li> <li>The toes of the species have <b>cushion-like hair</b> which helps it <i>balance the fluctuating desert temperatures</i>.</li> <li>The species has sandy-brown fur and small, round spots covering upper part of its body.</li> <li>The animal is in the <b>Least Concern</b> category of the IUCN Red List and Schedule-I in the Wildlife Protection Act 1972.</li> </ul> <p><b>Threats</b></p> <ul style="list-style-type: none"> <li>These cats are hunted for their beautiful soft fur.</li> </ul> <p>Conflict with humans, Habitat destruction and loss of habitat quality</p>
<p><b>Milu Deer</b></p> 	<ul style="list-style-type: none"> <li>Recently, in China, Milu deer which was considered extinct in wild (IUCN Red List), made a came back from the in nature.</li> <li>Milu deer is a rare and endangered species, native and <b>endemic to the river valleys of China</b>.</li> <li>Also known as Pere David's deer, these animals were on the verge of disappearing towards the end of the 19th century.</li> <li>They live in natural, open-range habitats, especially in the wetlands.</li> <li>They particularly love rolling about in the mud, especially during the mating season,</li> </ul>

	<p>which makes the land easier for farmers to cultivate.</p> <ul style="list-style-type: none"> <li>• <b>Threats</b> - Hunting for their meat and loss of wetland habitat.</li> </ul>
<p><b>White Tail Deer</b></p>	<p>Recent studies have shown white-tail deer can carry the virus that causes Covid-19.</p> <p><b>About White-tail deer</b></p> <ul style="list-style-type: none"> <li>• They are the smallest members of the North American deer family found from southern Canada through Central America.</li> <li>• Deer prefer open woodland, but are often found on the fringes of urban areas and in farming country.</li> <li>• It is listed as <b>least concern</b> in the IUCN red list.</li> <li>• They have long been hunted for sport and for their commodities.</li> </ul>
<p><b>World Rhino Day</b></p>	<ul style="list-style-type: none"> <li>• <b>Theme 2021 - Keep the fight alive</b></li> <li>• On World Rhino Day (<b>22nd September</b>) the “world’s largest stockpile” of rhino horns was consigned to flames in eastern Assam’s Bokakhat (headquarters of the Kaziranga National Park) to dispel the myth that has driven the illegal horn trade and the poaching of the animal.</li> <li>• Rhino horns are just a mass of <b>compacted hair</b>, and they have <b>no medicinal value</b>.</li> <li>• Five species of rhino exist namely <b>white and black rhinos in Africa</b>, the <b>greater one-horned, Javan and Sumatran rhino species in Asia</b>.</li> <li>• <b>Greater one-horned Rhino is found Only in India</b>. Its Habitat includes Indo-Nepal terai and northern West Bengal and Assam. Important areas: Kaziranga NP, Pobitora WLS, Orang NP, Manas NP in Assam, Jaldapara NP and Gorumara NP.</li> <li>• IUCN status: <b>Vulnerable</b>; CITES: Appendix 1; Wild Life Protection Act, 1972: Schedule 1</li> </ul>
<p><b>Koraput’s Manda Buffalo Gets A Unique Indigenous Tag</b></p> 	<p>National Bureau of Animal Genetic Resources (<b>NBAGR</b>) has recognised Manda buffalo, found in the <b>Eastern Ghats</b> and plateau of Koraput region of Odisha, as the 19th <b>unique</b> breed of buffaloes found in India.</p> <p><b>About the Species</b></p> <ul style="list-style-type: none"> <li>• They are <b>resistant to parasitic infections</b>, less prone to diseases, and can live, produce and reproduce at low or nil input systems.</li> <li>• The small, sturdy buffaloes are used for ploughing in their native habitat of <b>Koraput, Malkangiri, and Nabarangpur districts</b>.</li> <li>• These buffaloes have <b>ash grey</b> and <b>grey coat</b> with copper-colored hair. The lower part of the legs up to elbow is light in colour with copper colour hair at the knee. Some animals are <b>silver-white</b> in colour.</li> </ul> <p>Four breeds of cattle — <i>Binjharpuri, Motu, Ghumusari, and Khariar</i> — and two breeds of buffalo — <b>Chilika and Kalahandi</b> — and one breed of sheep, <i>Kendrapara</i>, have already received NBAGR recognition.</p>
<p><b>Kaiser-I-Hind</b></p>	<p>Recently, <b>Arunachal Pradesh</b> has approved the Kaiser-i-Hind as the <b>State butterfly</b>.</p> <ul style="list-style-type: none"> <li>• Kaiser-I-Hind literally means Emperor of India.</li> <li>• It is one of the very rare and elusive swallowtail butterflies listed as <b>Near Threatened</b> in IUCN red list and <b>schedule II</b> in the wildlife protection act, 1972.</li> <li>• The butterfly is also found in Nepal, Bhutan, Myanmar, Laos, Vietnam, and southern China.</li> </ul>

<p><b>Chocolate-bordered Flitter</b></p> 	<p>Recently, a researcher has discovered a new butterfly species named Chocolate -bordered Flitter from Dzongu, Sikkim.</p> <ul style="list-style-type: none"> <li>• It is a golden yellow butterfly with brown borders and spots.</li> <li>• The butterfly has been named 'Chocolate-bordered Flitter' as it has a chocolate-coloured border around both wings.</li> <li>• Its closest relatives are found in Guangdong, and Hainan, both in southeastern China.</li> </ul>
<p><b>Lesser Florican</b></p> 	<p>In a recent study, the longest in-country migration route of lesser floricans has been tracked for the first time from Rajasthan to Maharashtra.</p> <p><b>About The Study</b></p> <ul style="list-style-type: none"> <li>• The study on lesser floricans' migration has been launched as part of the <b>Bustard Recovery Programme</b> which is a conservation initiative for the Great Indian Bustard and the lesser florican.</li> <li>• The Wildlife Institute of India (<b>WII</b>) is implementing the project in partnership with Forest Departments of several States and the International Fund for Houbara Conservation.</li> <li>• This study would help experts understand the ecology and seasonal movements between breeding and non-breeding areas of Lesser Florican.</li> </ul> <p><b>About Lesser Florican</b></p> <ul style="list-style-type: none"> <li>• The lesser florican, also known as likh or kharmore, is the <b>smallest</b> in bustard family.</li> <li>• It is endemic to <b>Indian Subcontinent</b> where it is found in tall grasslands.</li> <li>• The bird is listed as <b>critically endangered</b> on the IUCN Red List and protected under Schedule I of the Wildlife (Protection) Act, 1972.</li> </ul> <p><b>Threats To Bustard Birds</b></p> <ul style="list-style-type: none"> <li>• Collision with power transmission lines: Due to poor frontal vision, the bustards can't detect power lines in time and their weight makes in-flight quick manoeuvres difficult.</li> <li>• Poaching and unregulated hunting.</li> <li>• Degradation of its natural habitat.</li> <li>• Wind turbines and Solar farms (photovoltaic power stations)</li> </ul>
<p><b>Flatbill Flycatcher</b></p> 	<p>Recently, a team of ornithologists from Brazil and Finland has discovered a cryptic new species of flatbill flycatcher living in the Amazonian lowlands.</p> <ul style="list-style-type: none"> <li>• They are aggressive insect eaters and are named flatbill for their flat body.</li> <li>• They prefer to live in seasonally flooded plains. This includes degraded forest patches close to human settlements.</li> <li>• They are distributed in Brazil, eastern Venezuela, north eastern Bolivia and Mexico.</li> </ul> <p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• The main threats are deforestation caused by rapid <b>progress of livestock farms, monocultures</b>.</li> <li>• Another threat is the implementation of large hydroelectric dams, the high and low tide levels in dams do not provide a stable habitat.</li> </ul>
<p><b>Humboldt Penguin</b></p>	<ul style="list-style-type: none"> <li>• <b>Mumbai's Byculla Zoo</b> announced the addition of two new Humboldt penguin chicks.</li> <li>• Humboldt penguins are a <b>medium-sized species</b> with an average height of just over 2</li> </ul>

	<p>ft. They have <b>large, bare skin patches around their eyes</b>, an adaptation to help keep them cool.</p> <ul style="list-style-type: none"> <li>• Their breeding season in the wild is <b>either March-April or September-October</b> depending on the location of the colony.</li> <li>• They are <b>one of the most popular zoo penguins</b> due to their ability to withstand warmer climates.</li> <li>• <b>Habitat:</b> Humboldt penguins are endemic to the <b>Pacific coasts of Chile and Peru</b>. They are so named because their habitat is <b>located near the Humboldt Current</b>, a large <b>oceanic upwelling characterised by cold waters</b>.</li> <li>• <b>Threats:</b> Entanglement in fishing nets, loss of key breeding sites, harvesting of guano for use as fertilizer, and being hunted by introduced species such as cats and dogs.</li> <li>• <b>Protection Status:</b> IUCN: <b>Vulnerable</b> ; CITES Appendix I</li> </ul>
<p><b>160 Species Of Raptors Endangered Worldwide</b></p>	<p>A new analysis by ‘<b>International Union for Conservation of Nature (IUCN) and BirdLife International</b>’ remarks about the threats faced by the birds of prey.</p> <ul style="list-style-type: none"> <li>• The <b>Annobon scops-owl</b> has an estimated population of fewer than 250 and is <i>restricted to Annobon Island off West Africa</i>. Recently, it has been classified as ‘<b>critically endangered</b>’ because of rapid habitat loss and degradation.</li> <li>• The <b>vulture population</b> in India has <b>declined by over 95 percent</b> because of the widespread use of <b>diclofenac</b>, a non-steroidal anti-inflammatory drug.</li> <li>• Raptors are also known as <b>birds of prey</b>. They are predators at the top of the food chain. <b>Indonesia</b> has the most raptor species, followed by Colombia, Ecuador, and Peru.</li> <li>• This includes birds such as a hawk, eagle, owl, vulture, etc.</li> </ul>
<p><b>Amur Falcon</b></p> 	<ul style="list-style-type: none"> <li>• The Amur Falcon (<b>IUCN status – Least Concern</b>) is a small raptor of the falcon family.</li> <li>• It is the world’s <b>longest travelling raptors</b>.</li> <li>• It breeds in south-eastern Siberia and northern China before migrate a long distance across India and over the Arabian sea to winter in Southern and East Africa.</li> <li>• They get their name from the <b>Amur River</b> that forms the border between Russia and China.</li> <li>• <b>Doyang Lake (Nagaland)</b> is known as a stopover for the Amur falcons during their annual migration from their breeding grounds to warmer South Africa.</li> <li>• Nagaland is also known as the “<b>Falcon Capital of the World</b>”</li> <li>• Amur Falcon stays for a month in Nagaland and helps in maintaining the ecosystem by feeding on a large number of insects, thus controlling the population of insects.</li> </ul>
<p><b>Glossy IBIS</b></p> 	<ul style="list-style-type: none"> <li>• The glossy ibis (<b>IUCN status – Least Concern</b>) species are medium sized birds, widely distributed and is found in Europe, Asia, Africa, Australia and Americas. These birds inhabit shallow lakes, swamps, lagoons, ponds, rivers, floodplains, wet meadows and rice fields.</li> <li>• This species is migratory species in India and is generally found in western parts like Keoladeo Ghana (Rajasthan), Velvadar (Gujrat).</li> <li>• In last summer, a glossy ibis bird was rescued from the Prime Minister’s residence, after it collapsed due to heat exhaustion and dehydration.</li> </ul>
<p><b>Peafowl</b></p>	<ul style="list-style-type: none"> <li>• A man was hit by a <b>peafowl in Kerala</b> after which he died. This incident has turned the</li> </ul>

	<p>spotlight on the <b>increasing population of Indian peafowl</b> in the state.</p> <ul style="list-style-type: none"> <li>• The <b>collective name for peacocks</b> is peafowl. The male of the variety is called a <b>peacock</b> and the female peafowl is called a <b>peahen</b>.</li> <li>• The <b>Indian peacock</b> is also the <b>National Bird of India</b>.</li> <li>• They are among the <b>largest of all birds that fly</b>.</li> <li>• The two most-recognizable <b>species of peafowl</b> are - <b>blue (Indian) peacock</b> of India and Sri Lanka and the <b>green or Javanese peacock (P. muticus)</b> found from Myanmar (Burma) to Java.</li> <li>• <b>Protection Status:</b> IUCN: <b>Least Concern</b>; Wildlife (Protection) Act, 1972: Schedule I</li> </ul>
<p><b>Acute Bladder Snail</b></p> 	<p>Recently, <i>Physella acuta</i> also known as acute bladder snail is found in Kochi, and it has been flagged as an invasive.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Invasive species or invasive exotics are the non-native or non-indigenous plants and animals that affect the habitats and bioregions they invade economically, environmentally and ecologically.</p> </div> <p><b>About Acute Bladder Snail</b></p> <ul style="list-style-type: none"> <li>• Acute bladder snail is a tiny snail with striking, pellucid <b>golden-yellow shell</b>.</li> <li>• This snail is considered native to North America but is now found in all continents except Antarctica.</li> <li>• The snail was first reported in India in the early 1990s. It is believed to have reached Kerala through the <b>aquarium trade</b>.</li> <li>• It plays host to worms that can cause food-borne diseases and skin itches in humans.</li> <li>• Rapid growth rate of the snails, air-breathing capability, and tolerance to pollution makes them a potential competitor to native fauna.</li> </ul>
<p><b>Bryde's Whale</b></p> 	<p>Recently, the carcass of <b>endangered Bryde's whale</b> (one male and the other female) washed ashore near the border of Puri and Ganjam districts of Odisha.</p> <ul style="list-style-type: none"> <li>• These whales are found in warm, temperate oceans including the Atlantic, Indian, and Pacific Ocean.</li> <li>• Some populations of Bryde's whales migrate with the seasons, while others do not migrate, making them unique among other migrating baleen whales.</li> </ul> <p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Killed by hunter and also sometimes vessel strikes can injure or kill Bryde's whales.</li> <li>• Low-frequency underwater noise pollution can disrupt the normal behavior of Bryde's whales, inhibiting their ability to use sound.</li> </ul>
<p><b>Gharials</b></p> 	<p>Recently, the Department of Punjab Forest and Wildlife Preservation, in collaboration with the World-Wide Fund for Nature-India released 24 gharials into the Beas River.</p> <ul style="list-style-type: none"> <li>• The Gharial is a <b>fish-eating crocodile</b>, native to the Indian subcontinent.</li> <li>• The population of Gharials are a crucial indicator of clean river water.</li> <li>• Found in Chambal River (Primary habitat), Girwa River, Ken River, Son River, Mahanadi River, Ramganga River.</li> <li>• Listed as <b>Critically Endangered</b> in the IUCN Red List and Schedule I under the Indian wildlife protection act, 1972.</li> </ul>

	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Gharials are hunt for their skins and to make indigenous medicine.</li> <li>• In some part of country, their eggs are collected for consumption.</li> <li>• Drastically decreasing habitat due to construction of dams, barrages, irrigation canals.</li> </ul> <p><b>Reintroduction Programmes</b></p> <ul style="list-style-type: none"> <li>• In 1975, the <b>Indian Crocodile Conservation Project</b> was initially set up in <b>Satkosia Gorge Sanctuary in Odisha</b>, with financial assistance from the United Nations Development Fund (<b>UNDP</b>) and the Food and Agriculture Organization (<b>FAO</b>).</li> <li>• The country's first gharial breeding center was built in <b>Nandan Kanan Zoological Park</b>.</li> <li>• <b>Kurail Gharial breeding center</b> project was established in 1978 by Uttar Pradesh Forest department.</li> <li>• Other breeding centre- National Chambal Sanctuary (Gharial Eco Park, Madhya Pradesh)</li> </ul>
<p><b>Olive Ridley Turtle</b></p> 	<p>Annual mass nesting of millions of olive ridley sea turtles, near Rushikulya river mouth in Odisha, is likely to be missed this year.</p> <ul style="list-style-type: none"> <li>• The Rushikulya river mouth is considered as the <i>second-biggest nesting site</i> for Olive Ridley Turtles in India, after <b>Gahirmatha marine sanctuary</b> in Odisha which is considered the world's largest nesting beach for them.</li> <li>• The Olive ridley turtles are the <b>smallest and most abundant</b> of all sea turtles found in the world, inhabiting warm waters of the <b>Pacific, Atlantic and Indian oceans</b>.</li> <li>• The species is listed as <b>Vulnerable</b> in the IUCN Red List, Appendix 1 in CITES, and Schedule 1 in Wildlife Protection Act, 1972.</li> <li>• They are best known for their unique mass nesting called <b>Arribada</b>, where thousands of females come together on the same beach to lay eggs.</li> <li>• These turtles are <b>carnivores</b>. They feed mainly on jellyfish, shrimp, snails, crabs, molluscs and a variety of fish and their egg.</li> <li>• Indian Coast Guard undertakes "<b>Operation Olivia</b>" every year to protect Olive Ridley Turtle.</li> <li>• To reduce the accidental killing in India, the Odisha government has made it mandatory for trawls to use <b>Turtle Excluder Devices (TEDs)</b>. It is a net specially designed with an exit cover that allows the turtles to escape while retaining the catch.</li> </ul>
<p><b>Albino Indian Flapshell Turtle</b></p> 	<p>Recently, an Albino Indian Flapshell Turtle was sighted by mountaineers in Sirnapalli forest of Nizamabad, Telangana.</p> <p><b>About Albino Indian Flapshell Turtle</b></p> <ul style="list-style-type: none"> <li>• It is a fresh water turtle commonly found in South Asian countries.</li> <li>• Listed as <b>Vulnerable</b> in the IUCN Red List and Schedule I under the Indian wildlife protection act, 1972.</li> <li>• The varying coloration of turtles may be <b>due to albinism</b> – a genetic disorder that causes a complete lack of a pigment called 'tyrosine'.             <ul style="list-style-type: none"> <li>✓ Tyrosine is an <b>amino acid</b> that plays a vital role in the formation of melanin.</li> <li>✓ Melanin is the pigment that gives color to <b>eyes, hair and skin</b>.</li> </ul> </li> </ul>
<p><b>Global Award For</b></p>	<ul style="list-style-type: none"> <li>• <b>Indian biologist Shailendra Singh</b> has been awarded the Behler Turtle Conservation</li> </ul>

<p><b>Turtle Conservation</b></p>	<p>Award for bringing three <b>critically endangered</b> turtle conservation species back from the brink of extinction. It is referred to as the “Nobel Prize” of Turtle Conservation.</p> <ul style="list-style-type: none"> <li>• These three species are <b>red-crowned roofed turtle</b> (Batagur kachuga), <b>northern river terrapin (Batagur Baska)</b>, and <b>black softshell turtle (Nilssonina nigricans)</b>.</li> <li>• <b>Northern river terrapin:</b> It is a species of riverine turtle native to Southeast Asia. It is one of Asia’s largest freshwater and backwater turtles. The species is currently found in Sundarban Ecosystem.</li> <li>• <b>Red-Crowned Roofed Turtle:</b> It is a species of freshwater turtle endemic to South Asia. The <b>stronghold for this river turtle is only in the Chambal River in central India</b>, however, small isolated populations may still exist in the Ganges and Brahmaputra river basins.</li> <li>• Black Softshell Turtle at different temple ponds in Assam.</li> </ul>
<p><b>Flower Scorpionfish</b></p> 	<p>Recently, a fish species named Flower Scorpionfish, which was only found in the Pacific Ocean, has been discovered in the Indian Ocean.</p> <p><b>About Flower Scorpionfish</b></p> <ul style="list-style-type: none"> <li>• The flower scorpionfish, that was first discovered in the Pacific Ocean region of Japan in the year 1929, has now been found in <b>Digha, West Bengal and Paradip in Odisha</b>.</li> <li>• Its head is bigger than its body. Its colour was faint red.</li> <li>• It is believed that the rise in the temperature of sea water due to global warming might induce the migration of this species from different regions.</li> </ul>
<p><b>Indus River Dolphin</b></p>	<ul style="list-style-type: none"> <li>• The state of Punjab is set to start the <b>Census</b> of Indus River dolphin.</li> <li>• They are <b>freshwater Dolphin</b> &amp; act as an indicator of the health of freshwater ecosystem.</li> <li>• The species does not have a crystalline eye lens, rendering it effectively blind. Navigation and hunting are carried out using <b>echolocation</b>.</li> <li>• They are found in Pakistan and River Beas, a tributary of Indus River in Punjab, India.</li> <li>• IUCN Red List Status: <b>Endangered</b></li> <li>• In 2019, Indus River dolphin was declared as the State aquatic animal of Punjab.</li> </ul> <p><b>Gangetic River Dolphin</b></p> <ul style="list-style-type: none"> <li>• It is primarily found in the Ganges and Brahmaputra Rivers and their tributaries in India, Bangladesh, and Nepal. It was recognized as <b>National Aquatic Animal in 2009</b>.</li> <li>• They also act as an indicator of the health of freshwater ecosystem as they can only live in freshwater. They are also called ‘<b>susu</b>’.</li> <li>• IUCN Red List Status: <b>Endangered</b></li> </ul>
<p><b>Litoria Mira</b></p>	<p>They are new frog species discovered recently in the rainforests of New Guinea. They are chocolate coloured.</p>
<p><b>Minervarya Pentali</b></p>	<ul style="list-style-type: none"> <li>• A new frog species was discovered in the Western Ghats and named after former DU Vice-Chancellor and plant geneticist Deepak Pental.</li> <li>• It is the smallest known Minervarya (genus) frog.</li> </ul>
<p><b>Pyrostria laljii</b></p>	<ul style="list-style-type: none"> <li>• A 15-metre tall tree that belongs to genus of the coffee family has recently been</li> </ul>

	<p>discovered in Andaman Islands.</p> <ul style="list-style-type: none"> <li>It is also the <b>first record of the genus Pyrostria</b> in India. Trees belonging to these species are usually found in Madagascar.</li> </ul>
<p><b>Bryum Bharatiensis</b></p>	<ul style="list-style-type: none"> <li>A native moss species in antarctica has been named so <b>after India's Antarctic station Bharati</b>.</li> <li>This is the first time a plant species has been discovered in the four decades of the Indian Antarctic mission.</li> </ul>
<p><b>Acetabularia jalakanyakae</b></p>	<ul style="list-style-type: none"> <li>A team of marine biologists has discovered a new marine algae species in the Andaman archipelago. The new algae species has been named '<b>Acetabularia jalakanyakae</b>', after the Sanskrit word '<b>Jalakanyaka</b>' meaning the '<b>goddess of oceans</b>' or '<b>mermaid</b>'.</li> <li>The species is also the first of <b>genus Acetabularia</b> to be discovered in India.</li> </ul>
<p><b>Issi Saaneq</b></p>	<ul style="list-style-type: none"> <li>Recently a new dinosaur species has been identified.</li> <li><b>Paleontologists at Harvard University</b> discovered two well-preserved <b>dinosaur skulls</b> during <b>excavations in East Greenland</b>.</li> <li>The <b>Issi Saaneq lived about 214 million years ago</b>. It was a medium-sized herbivore with a long neck and the forerunner to sauropods (having very long necks, long tails, small heads), the largest land animals ever to exist.</li> </ul>
<p><b>Cryptocarya Muthuvariana</b></p> 	<p>Recently, Cryptocarya Muthuvariana, a new plant species has been discovered from the Southern Western Ghats, Kerala.</p> <p><b>About The Species</b></p> <ul style="list-style-type: none"> <li>It grows to a height of about 10 to 15 metres. It can be identified by its '<b>not-too-broad leaves</b>'.</li> <li>Cryptocarya genus belongs to the <b>Lauraceae family</b>. It comprises over 300 species, widely distributed over South America, South Africa, Madagascar, Asia, and Australia.</li> <li>It has been named in honor of a local tribe, <b>Muthuvar</b>. It is also the first time, a species has been named after a tribe.</li> <li>The Mathuvar tribe is known to play a significant role in conservation of forests.</li> </ul> <p><b>Muthuvar Tribal Community</b></p> <ul style="list-style-type: none"> <li>Belonging to Madurai dynasty, they live on border hill forests of Kerala &amp; Tamil Nadu.</li> <li>The highest concentration of the tribe is on the Anamudi hills (highest peak of Western Ghats).</li> </ul>
<p><b>Allium Negianum</b></p> 	<ul style="list-style-type: none"> <li>Recently, a plant discovered in 2019 in Uttarakhand has been confirmed as a new species of Allium- genus.</li> <li>Scientific name Allium negianum honour late Dr Kuldeep Singh Negi, an explorer and Allium collector</li> <li>Allium - genus includes many staple foods such as garlic and onion, among 1,100 species worldwide.</li> <li>It grows at 3,000 to 4,800 m above sea level and can be found along open grassy meadows, sandy soils along rivers, and streams forming in snow pasture lands along alpine meadows, where the melting snow helps carry its seeds to more favourable areas.</li> </ul>

	<ul style="list-style-type: none"> <li>This newly described species is restricted to the region of <b>western Himalayas</b> and hasn't yet been reported from anywhere else in the world.</li> </ul>
<p><b>Footprints Of 3 Dinosaur Species Found</b></p>	<ul style="list-style-type: none"> <li>Footprints of <b>three</b> species of dinosaurs have been found in the <b>Thar Desert in Rajasthan's</b> Jaisalmer district.</li> <li>Footprints, made in the sediment or silt of the seashore, later become permanently stone-like.</li> <li>The dinosaur species are considered to be of the <b>theropod type (carnivorous)</b>, with the distinguishing features of hollow bones and feet with three digits.</li> <li>It proves the presence of the giant reptiles in the western part of the State, which formed the seashore to the Tethys Ocean during the Mesozoic era.</li> </ul>
<p><b>New Species of Hybodont Shark</b></p> 	<ul style="list-style-type: none"> <li>The crushing teeth of new species of Hybodont shark of Jurassic age (160-168 million years old) have been reported for the first time from <b>Jaisalmer</b>.</li> <li>Hybodonts, an extinct group of sharks, was a dominant group of fishes in both <b>marine</b> and <b>freshwater</b> environments during the Triassic and early Jurassic times.</li> <li>They became extinct at the end of the Cretaceous time (65 million years ago)</li> <li>The genus Strophodus has been identified for the first time from the Indian subcontinent and is only the <b>third</b> such record from Asia, the other two being from <b>Japan</b> and <b>Thailand</b>.</li> </ul>
<p><b>Thrips Parvispinus</b></p> 	<ul style="list-style-type: none"> <li>Recently, the production of the chilli crop in a few districts in <b>Telangana and Andhra Pradesh</b> was affected with a <b>new invasive pest</b> called Thrips parvispinus.</li> <li>The genus Thrips is one of the largest genera of the <b>insect order</b> Thysanoptera in the family Thripidae.</li> <li>In order to bring down pest population, we can promote natural enemies of the pest and also, farmers can spray <b>neem oil</b> and should consider planting <b>sunflower crop</b> next to the chilli fields in order to promote natural enemies of the pest.</li> </ul>

### Earth Overshoot Day, 2021: 29 July

- The date is announced annually by the **Global Footprint Network**, the global organisation calling for urgent climate action and sustainable consumption.
- Each year, Earth Overshoot Day marks the date **when we have used all the biological resources that the Earth can renew during the entire year**. This means humanity has again used up all biological resources that our planet regenerates during the entire year by 29th July, 2021 (almost a month earlier than last year)
- The concept of Earth Overshoot Day was **first conceived by Andrew Simms of the UK think tank New Economics Foundation**, which partnered with Global Footprint Network in 2006 to launch the first global Earth Overshoot Day campaign.

### Climate Vulnerability Index (CVI)

Recently, environmental think tank '**Energy, Environment and Water Council**' has released the first of its kind district-level 'Climate Vulnerability Index'. It presents a climate vulnerability index (CVI) of states and union territories by mapping exposure, sensitivity, and adaptive capacity.

#### Key Findings Of The Report

- More than 80 % of India's population lives in districts highly vulnerable to extreme hydro-met disasters.

- **Southern zone** of India is most vulnerable to extreme climate events and their compounding impacts, followed by eastern, western, northern, north-eastern, and central zones.
- 59% and 41 % of the total districts in the eastern and western zones respectively are highly vulnerable to extreme cyclone events.
- The states located in northeast are more vulnerable to floods, while the states in the southern and central parts are more vulnerable to extreme droughts.
- Five out of six zones in India, i.e., South, North, North-East, West, and Central have a low adaptive capacity to extreme hydro-met disasters. However, the Eastern Zone has a medium-range adaptive capacity to extreme hydro-met disasters.
- Assam, Andhra Pradesh, Maharashtra, Karnataka and Bihar are highly vulnerable to extreme climate events such as floods, droughts and cyclones.
- Unsustainable landscape, lack of infrastructure planning and human-induced microclimate change are the key drivers of this high vulnerability.

### Climate Change Performance Index 2022

- The first three ranks of the overall rankings were kept empty because no country had performed well enough in all index categories.
- **Sweden tops the index with rank 4th.**
- In the overall rankings, **India is ranked at number 10 with a score of 69.22.**
- India has been categorized as a '**high performer**' overall, but in the 'medium' category with respect to renewable energy.
- **China is ranked 37** overall and has an overall rating of "low".
- India continued to be among top-performing countries within **G20 countries (responsible for about 75% of the world's GHG emissions).**

### About Index

- It is compiled by **German Watch** along with **New Climate Institute and Climate Action Network.**
- It monitors climate mitigation progress of 60 countries and the European Union.
- It is released on the basis of 14 indicators under **4 parameters:**



### Clydebank Declaration

- Recently, the Clydebank Declaration was signed at the COP 26 Climate summit held in Glasgow.
- Under the declaration, the signatories agreed to work together to establish **zero emission maritime routes.** These routes are called **green shipping corridors.**
- 22 countries including the US, Japan, Australia and Canada have signed the Clydebank Declaration to develop at least **six** green shipping corridors between two or more ports by 2025 and "many more" by 2030.
- This declaration has not been yet adopted by India.

According to UNFCCC, COP 26 will work towards four goals:

<b>Secure global net-zero by 2050 and keep 1.5 degrees within reach</b>	<b>Adapt to protect communities and natural habitats</b>	<b>Mobilise Finance</b>	<b>Work Together to Deliver</b>
<ul style="list-style-type: none"> <li>Countries are being asked to come forward with ambitious 2030 emissions reductions targets that align with <b>reaching net zero</b> by middle of the century</li> </ul>	<ul style="list-style-type: none"> <li>Countries will work together to protect and restore ecosystems and build defences, warning systems and resilient infrastructure and agriculture to avoid loss of homes, livelihoods and even lives.</li> </ul>	<ul style="list-style-type: none"> <li>Developed countries must make good on their promise to mobilise at least <b>USD100 Bn</b> in climate finance per year.</li> </ul>	<ul style="list-style-type: none"> <li>Work together to frame a list of <b>detailed rules</b> that will help fulfill Paris Agreement.</li> </ul>

**IPCC's Sixth Assessment Report**

The Intergovernmental Panel on Climate Change (IPCC) released the 1<sup>st</sup> part of its 6<sup>th</sup> Assessment Report (AR6) titled 'Climate Change 2021: The Physical Science Basis'

**Key Points of The Report**

- Average surface temperature of Earth will **cross 1.5 °C over pre-industrial levels in the next 20 years** (By 2040) and **2°C by the middle of the century** without sharp reduction of emissions. This is the **first time** that the IPCC has said that the *1.5°C warming was inevitable even in the best-case scenario*.
- Last decade was hotter than any period of time in the past 1,25,000 years.
- CO<sub>2</sub> Concentrations is highest in **at least two million years**. World has already **depleted 86% of its available Carbon budget**.
- Sea level has tripled compared with 1901-1971.

**About Intergovernmental Panel on Climate Change (IPCC)**

- It is an intergovernmental body of United Nations for assessing the science related to climate change.
- Created by the United Nations Environment Programme (**UNEP**) and the World Meteorological Organization (**WMO**) in 1988, the IPCC has **195 Member countries** with its headquarter at **Geneva**.
- Its reports play a key role in the United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC was signed by 154 states at the United Nations Conference on Environment and Development (UNCED), informally known as the **Earth Summit**, held in Rio de Janeiro in 1992. It established a Secretariat headquartered in **Bonn** and entered into force on 21 March 1994.
- The IPCC shared the **2007 Nobel Peace Prize** with Al Gore for contributions to the human understanding of climate change.

**197 Parties (196 countries plus EU) agreed to the deal in Kigali, Rwanda**

**WHAT IS AGREED**

- ➔ Agreed to an amendment to include HFCs' phase-down under MP (Unlike Paris Agreement, MP is legally binding)
- ➔ It entered into force from Jan 1, 2019
- ➔ Creates three categories of countries with different schedules and timetables for reduction

- 1** Developed countries led by the US, Japan and West European nations.
- 2** Developing countries like China, South Africa, Brazil among others.
- 3** Developing countries like India, Iran, Iraq, Pakistan among others.

**HFCs' PHASE DOWN SCHEDULES**

Category	Baseline	Freezing	Max % reduction
1	2011-13	2019	85% by 2036
2	2020-22	2024	80% by 2045
3	2024-26	2028	85% by 2047

- ➔ Freezing year is the year when use of HFCs will peak before being rapidly scaled down and finally phased out altogether
- ➔ Baseline years are the years for which the average production/consumption quantity of HFCs is taken as the upper limit—so it serves as a level

**Kigali Amendment To 1989 Montreal Protocol**

- India has decided to ratify Kigali Amendment, a key amendment to the Montreal Protocol.
- The **1989 Montreal Protocol** is not a climate agreement. It is instead **aimed at protecting the earth from Ozone-Depleting Substances (ODSs)** like the ChloroFluoroCarbons (CFCs).
- The Montreal Protocol **led to the replacement of CFCs with Hydrofluorocarbons (HFCs)** which do not destroy the Ozone layer but they were **found to be extremely potent in causing Global warming**.

- Thus, the Kigali Amendment enabled the Montreal Protocol to **mandate the elimination of HFCs** as well.
- The Kigali Amendment **was** negotiated in October 2016 and has already come into force from the start of 2019.
- Kigali Amendment aims for **phase-down of Hydrofluorocarbons (HFCs)** by cutting their production and consumption. The goal is to achieve **over 80% reduction in HFC consumption by 2047**.
- It has divided the signatory parties into three groups.
- As per Kigali agreement, India will complete its phase down of HFCs in 4 steps from 2032 onwards with **cumulative reduction of 2024-2026 levels by 10% in 2032, 20% in 2037, 30% in 2042, and 85% in 2047**

### World Ozone Day

- **16<sup>th</sup> September: International Day for Preservation of the Ozone layer.**
- After the **Montreal Protocol** on Substances that deplete the ozone layer was signed by almost every country in 1987, the **United Nation General Assembly**, in 1994, proclaimed this day as the **International Day for the Prevention of the Ozone Layer**.
- The Montreal Protocol has **led to the phase-out of 99% of ozone-depleting chemicals** in refrigerators, air-conditioners, and many other products.
- **2021 Theme:** Montreal Protocol – **Keeping us, our food, and vaccines cool.**
- **Ozone** It is a **special form of oxygen with the chemical formula O<sub>3</sub>**. Most ozone resides high up in the atmosphere, **between 10 and 40km above Earth's surface**. This region is called the **stratosphere** and it contains about 90% of all the ozone in the atmosphere.

### Classification

- **Good Ozone:** It occurs naturally in the **Earth's upper atmosphere (Stratosphere) where it forms a protective layer** that shields us from the sun's harmful ultraviolet rays. This "good" ozone is gradually being destroyed by man-made chemicals referred to as **Ozone-Depleting Substances (ODS)**, including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halons, methyl bromide, carbon tetrachloride, and methyl chloroform.
- **Bad Ozone:** In the **Earth's lower atmosphere (troposphere) near ground level**, ozone is formed when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources react chemically in the presence of sunlight. Surface level ozone is a harmful **air pollutant**.

### "Glaciers of the Himalayas, Climate Change, Black Carbon and Regional Resilience" Report

- The **World Bank** had recently conducted a research study on impact of Black Carbon (BC) over the Himalaya, Karakoram and Hindu Kush (HKHK) mountain ranges, where glaciers are melting faster than the global average ice mass.
- Deposits of BC act in two ways hastening the pace of glacier melt: by decreasing surface reflectance of sunlight and by raising air temperature.

- BC, a short-lived pollutant, is formed by incomplete combustion of fossil fuels, biofuel, and biomass, and is emitted in both anthropogenic and naturally occurring soot.
- It is the **second-largest contributor to warming** the planet behind carbon dioxide (CO<sub>2</sub>). Unlike other greenhouse gas emissions, BC is quickly washed out and can be eliminated from the atmosphere if emissions stop. Unlike historical carbon emissions, it is also a localised source with greater local impact.

### Uttar Pradesh: Highest PM2.5 Emitter In India

- Analysis was done by the **Council on Energy, Environment, and Water (CEEW)**. The council, a research body, looked at 5 of the most reliable data sources — international and national.
- Why UP: Due to a significant share of PM2.5 emissions from **solid fuel use** in households and, by virtue of being India's most populous state, it has a **higher proportion of households relying on this form of fuel**.

### Harit Dhara

- Indian Council of Agricultural Research (**ICAR**) has developed an anti-Methanogenic feed supplement '**Harit Dhara**' (**HD**) which can cut down cattle **methane emissions by 17-20%** and can also result in higher milk production.
- It has been made from **tannin-rich plant-based sources**. Tropical plants containing tannins, bitter and astringent chemical compounds, are known to **suppress or remove protozoa from the rumen**.
- Fermentation after using this supplement will help produce more **propionic acid**, which provides **more energy for lactose (milk sugar) production** and body weight gain.
- Methane's global warming potential of **25 times of CO<sub>2</sub>** over 100 years makes it a more potent greenhouse gas.

Methane is produced by animals **having rumen**. Rumen is the first of the four stomachs where the cattle eat plant material, arit cellulose, fibre, starch and sugars. These get fermented or broken down by microorganisms prior to further digestion and nutrient absorption. Carbohydrate fermentation leads to production of CO<sub>2</sub> and hydrogen. These are used by microbes (Archaea) present in the rumen to produce methane.

### Global Methane Pledge

Global Methane Pledge was launched at UN COP26 climate conference in Glasgow.

#### About Global Methane Pledge

- This pledge was announced with the aim of **reducing methane emissions** by 30% by the year 2030, as compared to 2020 levels.
- Besides EU and US, more than 103 countries have signed up so far, including major methane emitters like Nigeria and Pakistan. **China, Russia, and India have not** signed up. Australia said it will not back the pledge.

#### Methane

- It is the simplest hydrocarbon, consisting of one carbon atom and four hydrogen atoms.
- It is a powerful greenhouse gas. It is flammable and is used as fuel worldwide.
- Approximately 40% of methane emitted is from natural sources & about 60% comes from human-influenced sources, including livestock farming, rice agriculture, biomass burning etc.

#### Reasons for Rising of Methane

- Doesn't come under any protocol like Paris protocol so no concrete efforts taken.
- Increase in anthropogenic activities.
- Lockdown reduced the CO<sub>2</sub> level but the **emission of methane is significant from the agricultural field and household consumption** etc.

**“Fit for 55”**

- These measures are a EU's roadmap to achieve its target to reduce CO<sub>2</sub> emissions by 55% by 2030, compared with 1990 levels.
- It proposes to increase the binding target of renewable sources in the EU's energy mix to 40% (from 32% earlier) and improve energy efficiency by 36% (from 32.5% earlier) by 2030.
- **Focus areas:** It takes particular aim at transport (both personal and commercial)
- Among other market-based mechanisms, the EU is proposing a **carbon-border adjustment mechanism**, which will put a price on imports from places that have carbon-intensive production processes.
- This instrument has been deemed to have a small impact on global CO<sub>2</sub> emissions by the United Nations Conference on Trade and Development, and could instead have negative impacts on developing countries.

**Earth's Black Box**

Currently, a black box is being built, that will record **earth's warming weather patterns**.

- The vault will be constructed in **Tasmania, an Australian island state** off the south coast.
- The data will be stored on a giant, automated, **solar-powered hard drive** with a capacity to collect information for about **50 years**.
- The device aims to provide an unbiased account of the events that caused planet's death, hold accountability for future generations, and prompt immediate action.
- The box will be designed to be resilient to hazards including cyclones, earthquakes and attacks by sabotage, with its sloping walls.

**Solar Hamam**

The Solar Hamam is essentially a heating system developed with the **aim of generating heat in a clean, environmentally-friendly way** to the households **across mountainous regions**. The Solar Hamam had won the "Himachal Pradesh State Innovation Award for 2016-17.

**How Does This System Work**

- Within the first solar illumination of the day in the morning of around 30-35 minutes, it has the capacity to heat anywhere between 15-18 litres of water.
- It uses a solar panel to facilitate this heating process. It consists of a unique anti-freezing outlet.

**Significance:** It generates employment for the local population, thus boosting the region's economy. It is a cost-effective alternative for regular heaters. It is also locally branded and patented invention.

**India's First Green Hydrogen Microgrid Project**

Recently, State-run NTPC Ltd has awarded India's first green hydrogen microgrid project at its Simhadri plant in Andhra Pradesh. NTPC Ltd has also commissioned the **largest floating solar PV project of 25 MW** on the reservoir of its **Simhadri thermal station** in **Visakhapatnam**, Andhra Pradesh.

**About The Project**

- It is India's first green **hydrogen-based energy storage** project.
- Under this project, hydrogen would be produced using the advanced **240 kW solid oxide electrolyser** by taking input power from the nearby **floating solar project**. NTPC had commissioned the development of **India's biggest** floating solar plant in **Telangana's Ramagundam**.

**About Green Hydrogen**

- Green hydrogen is hydrogen that is produced by splitting water into hydrogen and oxygen using an electrolyser powered by renewable energy sources such as wind and solar.
- Certified green hydrogen requires an emission reduction of >60-70% below the benchmark emissions intensity threshold.

**Challenges With Green Hydrogen**

- We need **high energy requirement** in **compressed hydrogen** storage, due to low specific gravity.
- Only a handful of Indian companies manufacture electrolysers, which are used to generate green hydrogen.
- According to The Energy and Resources Institute (TERI), the cost of green hydrogen production is **\$5-\$6 per kg**. At this rate, it is not easy for industries like steel, fertilizer and long-range shipping to adopt this fuel.

**Perform, Achieve and Trade (PTA) Scheme**

Recently, a report released by the **Centre for Science and Environment (CSE)** mentions that the Perform, Achieve and Trade scheme introduced in 2008 is not effective.

Centre for Science and Environment (CSE) is a **not-for-profit public interest research and advocacy organisation** based in New Delhi, India. Established in 1980, CSE works as a think tank on environment-development issues in India, poor planning, climate shifts devastating India's Sundarbans and advocates for policy changes and better implementation of the already existing policies.

**About PTA Scheme**

- It is a flagship programme of **Bureau of Energy Efficiency** under National Mission for Enhanced Energy Efficiency (NMEEE), one of the eight national missions under National Action Plan on Climate Change (NAPCC) launched by the Government of India in 2008.
- The scheme is a **market-based mechanism** wherein energy saving certificates (ESCerts) are given as incentives to industries that overachieve their targets. ESCerts were introduced in India in 2011 under PAT.
- These certificates can be **traded** in **two energy exchange- Indian Energy Exchange (IEX) and Power Exchange India Limited (PXIL)**.
- The certificates can be bought by other designated consumers that have not achieved their prescribed targets under the scheme.
- Units that are unable to achieve the targets either by their own actions or by buying the ESCerts are liable to pay the prescribed penalty.
- PAT covered about **13 energy-intensive sectors**: Thermal power plants (TPP), cement, aluminium, iron and steel, pulp and paper, fertiliser, chlor-alkali, petroleum refineries, petrochemicals, distribution companies, railways, textile and commercial buildings (hotels and airports)

**National Action Plan on Climate Change (NAPCC)**

It is a Government of India's programme launched in 2008 to mitigate and adapt to the adverse impact of climate change. The plan aims at fulfilling India's developmental objectives with focus on **reducing emission intensity of its economy**. The 8 missions under NAPCC are :

- National Solar Mission
- National Mission for Enhanced Energy Efficiency
- National Mission on Sustainable Habitat
- National Water Mission
- National Mission for Sustaining Himalayan Ecosystem
- Green India Mission
- National Mission for Sustainable Agriculture
- National Mission on Strategic Knowledge for Climate Change

**Clean Energy Ministerial's (CEM) Industrial Deep Decarbonization Initiative (IDDI)**

- India along with the UK launched a new work stream to promote industrial energy efficiency under the CEM's IDDI at the 12th Chief Energy Ministerial.
- Industrial Deep Decarbonization Initiative is a global coalition of public and private organisations who are working to stimulate demand for low carbon industrial materials.
- In collaboration with national governments, IDDI works to standardise carbon assessments, establish ambitious public and private sector procurement targets, incentivise investment into low-carbon product development and design industry guidelines.
- It is Coordinated by **United Nations Industrial Development Organization (UNIDO)**. The IDDI is co-led by the UK and India and current members include Germany and Canada.

**Clean Energy Ministerial (CEM):** It was established in December **2009** at the UN's Framework Convention on Climate Change (UNFCCC) conference of parties (CoP) in **Copenhagen**.

CEM is a high-level global forum to promote policies and programs that advance clean energy technology, to share lessons learned and best practices, and to encourage the transition to a global clean energy economy. **29 countries** are part of CEM including India.

The Framework for the Clean Energy Ministerial, adopted at the **seventh Clean Energy Ministerial in 2016**, defines the CEM governance structure and outlines the mission statement, objectives, membership, and guiding principles.

**United Nations Development Industrial Organisation**

UNIDO is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization, and environmental sustainability. India is also a member country.

**Connect Karo 2021**

The **Union Home Minister** addressed the '**Connect Karo 2021**' - Towards Equitable, Sustainable Indian Cities' Event.

- It is part of a **global series of events** that **World Resources Institute (WRI)** India organizes and hosts, to bring together Indian and global leaders, and other stakeholders committed towards **designing inclusive, sustainable and climate forward Indian cities**.
- WRI India is an independent charity, legally registered as the **India Resources Trust**.
- Connect Karo sees presenters from various fields — **air pollution, electric mobility, urban planning, urban water resilience, climate mitigation, and public transit etc.**

**UN Global Compact's CEO Water Mandate**

- India's largest power utility, **NTPC Ltd**, has become a signatory of UN Global Compact's CEO Water Mandate.
- **CEO Water Mandate** is a **UN Global Compact initiative** which demonstrates commitment and efforts of companies to enhance their water and sanitation agendas in line with SDGs.
- It has been designed to assist companies in developing, implementing and disclosing comprehensive water strategies and policies.

**UN Global Compact Initiative:** It is a **non-binding** United Nations pact to encourage businesses and firms worldwide to adopt sustainable and socially responsible policies, and to report on their implementation. Launched in **2000**, it is a principle-based framework for businesses, stating ten principles in the areas of human rights, labor, the environment and anti-corruption.

**Water Innovation Challenges Initiative**

Recently, the Atal Innovation Mission, NITI Aayog and the Royal Embassy of Denmark to India has announced the second edition of water innovation challenges.

**About The Initiative**

- It is an initiative to address the global water woes through innovations as part of the **Indo-Danish Bilateral Green Strategic partnership**.
- The initiative will engage young talents from leading universities and innovation hubs across the nation to build their skills and apply their technical disciplines and innovation capacity.
- The winners of the challenges will also represent India at the International Water Congress 2022.

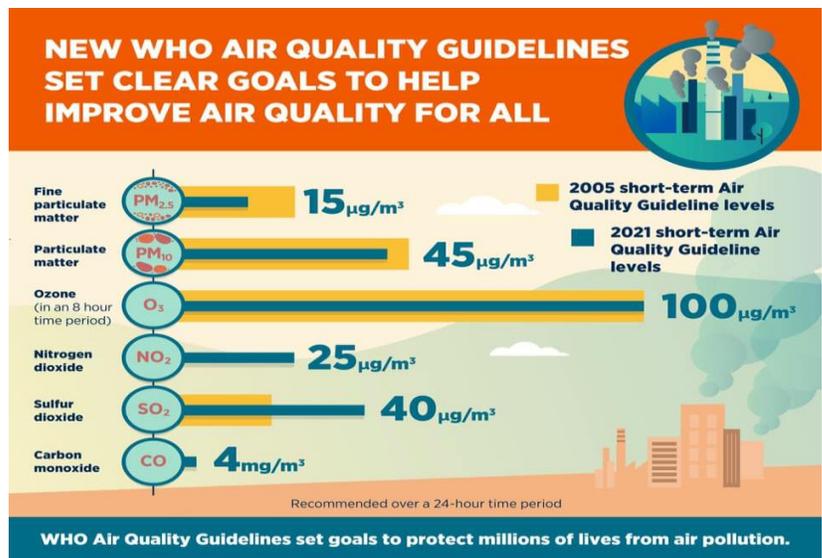
**Indo-Danish Bilateral Green Strategic Partnership**

- The Prime Ministers of India and the Denmark co-chaired a virtual summit on September 28, 2020, during which the two PMs agreed to elevate India-Danish ties to a Green Strategic Partnership.
- The partnership aims to advance political cooperation and expand economic ties between the two countries, including green development, creating jobs and strengthening cooperation on addressing global challenges and opportunities.

**WHO New AQGs: Pollution Norms**

The new Air Quality Guidelines (AQGs) are the WHO’s first update since 2005. AQG is an annual mean concentration guideline for particulate matter and other pollutants. WHO has further **lowered the recommended levels** of pollutants that can be considered safe for human health.

WHO’s new guidelines recommend air quality levels for **six pollutants** — **particulate matter (PM) 2.5 and PM 10, ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and carbon monoxide (CO)**. The diagram presents the data for **24 hours mean average** except for O<sub>3</sub> which is at 8 hours mean average.



**Impact on Health**

- Both PM 2.5 and PM 10 are capable of penetrating deep into the lungs, but PM 2.5 can even enter the bloodstream, resulting in cardiovascular and respiratory impacts and also affecting other organs.
- In 2013, outdoor air pollution and particulate matter were classified as carcinogenic by WHO’s International Agency for Research on Cancer (IARC). Every year, exposure to air pollution is estimated to cause 7 million premature deaths.
- PM is primarily generated by fuel combustion in different sectors, including transport, energy, households, industry, and agriculture. Types of particulate matter include black carbon/elemental carbon, ultrafine particles, particles originating from sand, and dust storms.

**National Ambient Air Quality Standards (NAAQS):** These are Standards for ambient air quality with reference to 12 pollutants notified by CPCB under Air (Prevention and Control of Pollution) Act, 1981.

These 12 pollutants include: Sulphur dioxide (80 µg/m<sup>3</sup>), Nitrogen dioxide (80 µg/m<sup>3</sup>), PM 2.5 (60

µg/m<sup>3</sup>), PM 10 (100 µg/m<sup>3</sup>), Ozone (100 µg/m<sup>3</sup> - 8 hours mean), Lead, Carbon Monoxide (2 µg/m<sup>3</sup>- 8 hours mean), Ammonia, Benzene, BenzoPyrene, Arsenic, Nickel.

### Commission for Air Quality Management In NCR and Adjoining Areas

Commission for Air Quality Management in the National Capital Region and Adjoining Areas Bill, 2021, was passed by both Houses.

#### Scope Of Commission

- Concentrate on improving air quality during winter in particular, but also suggest measures to mitigate pollution throughout the year.
- Replace the Supreme Court-appointed Environment Pollution (Prevention and Control) Authority (EPCA).

#### Composition Of Commission

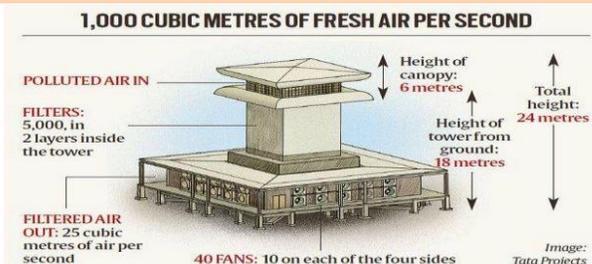
- The Commission will be headed by a full-time chairperson who has been a Secretary to the Government of India, or a Chief Secretary to a State government. The chairperson will hold the post for **three years** or until he attains the age of **70 years**.
- **Members**
  - i) an official from the Environment Ministry.
  - ii) five ex-officio members who are either chief secretaries or secretaries from Delhi, Punjab, Haryana, Rajasthan & UP.
  - iii) one full-time member who is or has been a joint secretary; three full-time independent technical members who are experts in air pollution
  - iv) one technical member each from the CPCB and ISRO
  - v) Three members from NGOs who deal in air pollution; Three members, being stakeholders from various related sectors such as agriculture, industry, transport or construction.
  - vi) One representative of the NITI Aayog; representatives of several ministries; representatives of any association from the commerce or industry sector.

#### Background

- Initially, the Commission for Air Quality Management ordinance was promulgated by the President in October, 2020 but the bill to replace the ordinance was not passed in the budget session, as a result of which the commission ceased to operate in March, 2021.
- Subsequently, the MoEFCC brought a second ordinance in April 2021, with modifications due to the farmers' protest.
- Farmers had raised concerns of **stiff penalties and possible jail terms** for stubble burning (stated in first ordinance).
- The government has decriminalised the act of stubble burning and withdrawn the clause for possible jail time. However, environmental compensation fees are levied on those who are found to be engaged in stubble burning, including farmers.

### Delhi's New Smog Tower

- Smog towers are structures designed to work as large-scale air purifiers. They are fitted with multiple layers of air filters and fans at the base to suck the air.
- After polluted air enters the smog tower at top, it is purified by the multiple layers before being re-circulated into the atmosphere.



**Graded Response Action Plan (GRAP)**

- Recently, the Delhi Government decided to shut down schools due to high pollution.
- Closing of schools, odd-even vehicle rationing scheme and banning construction activities are actions under the “**emergency**” category of GRAP.

**About GRAP**

- It is a set of emergency measures that was approved by the Supreme Court in **2016**.
- Plan comes into effect when the air quality index (AQI) in Delhi and the NCR breach certain thresholds. Four categories of thresholds are defined under GRAP - Emergency, Severe, Very Poor, and Moderate to Poor.
- The plan does not include action by various state governments to be taken throughout the year to tackle industrial, vehicular and combustion emissions.

**NTPC Has Invited Expression Of Interest (Eoi) For Sale Of Fly Ash To Other Countries**

- Popularly known as **Flue ash or pulverised fuel ash**, Fly Ash is a coal combustion product.
- Composed of the **particulates that are driven out of coal-fired boilers together with the flue gases**.
- All fly ash includes substantial amounts of **silicon dioxide (SiO<sub>2</sub>)**, **aluminium oxide (Al<sub>2</sub>O<sub>3</sub>)** and **calcium oxide (CaO)**, the main mineral compounds in coal-bearing rock strata.
- All the heavy metals found in fly ash- **nickel, cadmium, arsenic, chromium, lead**, etc—are toxic in nature.
- The fly ash emitted by a power plant carries into the surrounding environment **100 times more** radiation than a nuclear power plant producing the same amount of energy.
- It resembles Portland cement but is chemically different. Portland cement is a binding material in the form of a finely ground powder that is manufactured by burning and grinding a mixture of limestone and clay.

The issue is coal's content of uranium and thorium, both radioactive elements. They occur in such trace amounts in natural, or "whole," coal that they aren't a problem. But when coal is burned into fly ash, uranium and thorium are concentrated at up to 10 times their original levels

- **Pradhan Mantri Awas Yojana (Urban)** has focused on new construction technologies such as using fly ash bricks that are innovative, and environmentally friendly.
- A web portal for monitoring of fly ash generation and utilization and a mobile based application titled “**ASHTRACK**” has been launched
- GST rates on fly ash and its products have been reduced to 5%.

**Leaded Petrol Eradicated Globally: UNEP**

- United Nations Environment Programme (UNEP) has declared that leaded petrol is no longer used anywhere on the planet.
- Leaded Petrol Meaning Petrol containing **tetraethyl lead** in order to improve combustion.
- **Algeria** was the last country to eradicate leaded petrol
- **India** was among the pioneering countries that took early action to phase out leaded petrol. The process of phase down started in 1994 and got completed in **2000**.

**United Nations Environment Programme**

- It was founded as a result of the UN Conference on Human Environment (**Stockholm Conference**) in 1972.
- HQ: Nairobi, Kenya
- UNEP has been active in funding and implementing environment related development projects.

- UNEP is also one of several implementing agencies for the **Global Environment Facility (GEF)** and the **Multilateral Fund for the Implementation of the Montreal Protocol**.

**Major Reports:** *Emission Gap Report, Adaptation Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.*

**Provides Secretarial Functions:**

- Convention on Biological Diversity (CBD)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on Persistent Organic Pollutants
- Minamata Convention on Mercury
- Vienna Convention for the Protection of the Ozone Layer

### Toxic Firecrackers

- Supreme Court observed that major fireworks manufacturers had violated orders requiring them not to use prohibited chemicals such as **Barium salts**.
- The orders are in continuation of **Arjun Gopal and Others vs Union of India** — filed on behalf of three children in **2015**, seeking measures to mitigate air pollution and asserting right to clean air under **Article 21** of the Constitution.

**Types Of Green Crackers** 3 types of green crackers are available in India - **SWAS, STAR, and SAFAL**.

i) SWAS (Safe Water Releaser)

- They will release water vapour in the air which will suppress the dust released
- eliminates use of Potassium Nitrate (KNO<sub>3</sub>) and Sulphur (S).

ii) STAR (Safe Thermite Cracker)

- Does not comprise potassium nitrate and sulphur.
- Reduce particulate matter including sulphur dioxide and nitrogen oxide by at least 30%

iii) SAFAL (Safe Minimal Aluminium): Minimum usage of aluminium

### No Increase In Pollution Load Certificate

- The Environment Ministry has allowed companies operating in several industries, including some polluting ones, to expand capacities on the basis of a self-certification that this will not “increase the pollution load”.
- The notification is **applicable to industries such as: coal washing, mineral processing, pesticides, fertilizers, synthetic chemicals** such as paint, cement, petrochemicals, and sugar, some of which do have a significant environmental footprint.
- Industries will also have to upload a “no increase in pollution load certificate” **from an environmental auditor** or institutions empanelled by the State Pollution Control Board or Central Pollution Control Board or Ministry of Environment, Forest and Climate Change.
- The ease of “no increase in pollution load” was introduced to the environment clearance process from 2016, to gradually exempt project expansions from the purview of carrying out impact assessments or public hearings.

## Radioactive Pollution In Water

Radioactive pollution in water and associated health impacts have been reported in many parts of the globe.

### How Water Get Radioactive Contamination

- Among anthropogenic sources of radioactive pollution, nuclear weapons investigations, nuclear disasters, nuclear power houses and the dumping of radioactive waste are major sources of pollution.
- The entry of **naturally occurring radioactive substances (NORMs)** into the aquifer from soil sediments contaminates groundwater.
  - Uranium, thorium and actinium are three NORM series
  - Radium, a descendant of the NORM series, is one of the radiotoxic elements found in aquatic systems and can be penetrated into groundwater. Radium is formed by the decay of uranium (U) and thorium (Th) in the environment.
- Sometimes, **magma also releases radioactive gases** into the environment. The deposition of these radioactive gases in waterbodies also causes radioactive contamination.
- In the soil it reacts with and destroy various nutrients, making the soil highly toxic and infertile.
- Radioactive contamination prevents the stomata from evaporating. When the radiation reaches the chromosomes, reproduction is inhibited. In plants, this results in altered type, size and health.
- It causes various disorders in human physiology, including cancer, leukaemia, genetic mutations, osteonecrosis, cataracts and chromosomal disruption.

#### Radioactivity

- Radioactivity is the phenomenon of spontaneous emission of **particles or waves** from the unstable nuclei of some elements.
- There are three types of radioactive emissions - **Alpha, Beta and Gamma**.
- Radioactive elements are naturally found in the earth's crust.
- A small amount of radiation is found in all types of water but the extended amount of radiation is harmful to human health.

#### Measuring radioactive pollution

- Radioactivity is measured in **Becquerel** (SI unit) or in **Curie**.
- The unit **Sievert** measures the quantity of radiation absorbed by human tissues.
- Radioactivity in drinking water can be determined by a **gross alpha test**.

## 'Sea Snot' Outbreak In Turkey

- Turkey's **Sea of Marmara**, that connects **Black Sea to the Aegean Sea**, has witnessed the largest outbreak of 'sea snot'.
- It is a slimy layer of grey or green sludge and is formed when **algae are overloaded with nutrients**. Overloading of nutrients happens because of warm weather caused by global warming, water pollution, uncontrolled dumping of household & industrial waste into the seas etc.
- Besides aquatic life, the 'sea snot' outbreak has also **affected the livelihoods of fishermen**. It can also cause an outbreak of **water-borne diseases** such as cholera in cities like Istanbul.



## Froth In Yamuna

Recently, a layer of froth was seen floating over parts of the Yamuna which is a sign of a polluted river.

### What Causes Frothing In The Yamuna

- The release of untreated or poorly treated effluents could lead to the frothing.
- Sewage network and industrial waste also leads to toxic frothing.
- Specifically, **phosphates** in the river form the froth. Surfactants and phosphates found in detergent in households and industrial laundry gets dumped into rivers.
- Foam is created when the surface tension of water (attraction of surface molecules toward the center, which gives a drop of water its round shape) is reduced and air is mixed in, causing bubble formulation
- The surfactant concentration at the liquid surface decreases as the bubble size increases. When this happens, the higher surface tension in the expansion area draws liquid from the lower surface tension region at the base of the bubble. This 'heals' the thinning bubble wall and stabilises the foam.

### What Are The Health Hazards

- Short-term exposure can lead to skin irritation and allergies.
- If ingested, these chemicals may cause gastrointestinal problems and diseases like typhoid.
- Long term exposure to heavy metals in industrial pollutants can cause neurological issues and hormonal imbalances.

### Yamuna River

- Yamuna river originates from the Yamunotri Glacier on the southwestern slopes or Banderpoonch peak in the Mussoorie range of the lower Himalayas.
- It meets the Ganges at the Sangam in Prayagraj, Uttar Pradesh after flowing through Uttarakhand, Himachal Pradesh, Haryana and Delhi.
- Important Tributaries of Yamuna are Chambal, Sindh, Giri, Ken and Betwa.

### SuperHydrophobic Cotton Composite For Oil Spills

- The **Indian Institute of Technology (IIT), Guwahati** has developed **super-hydrophobic cotton composite** with **Metal-Organic Framework (MOF)** that can clean-up marine **oil-spill**.
- Earlier, a study confirmed that **Stimulating Bacteria (Bioremediation)** with nutrients in the cold seawaters of the Canadian Arctic can help decompose diesel and **Other Petroleum Oil after Oil Spills**. It is a **novel MOF composite, which is a highly porous and water-repellent material** and can absorb oil selectively from an oil-water mixture.
- MOF are **crystalline porous solids** composed of a three-dimensional (3D) network of metal ions held in place by multidentate organic molecules **suited for solid-phase extraction**.

### Blue Food

- A report titled **Environmental performance of blue foods** has stated that Aquatic or blue foods can be made more environmentally sustainable than they are now.
- The report is published as **part of the Blue Food Assessment (BFA)**. The BFA is collaboration **between** Sweden-based Stockholm Resilience Centre, United States-based Stanford University, and the non-profit EAT.
- Blue foods are food derived from **aquatic animals, plants, or algae** that are caught or cultivated in **freshwater and marine environments**.

- They are found to **rank more highly than terrestrial animal-sourced foods** in terms of their **nutritional benefits and potential for sustainability gains**.  
Many blue food species are **rich in important nutrients** like omega-3 fatty acids, vitamins, and minerals.

### Kovalam And Eden Beaches Gets Blue Flag Certification

- Kovalam is near Mammallapuram while Eden beach is in Puducherry.
- The Blue Flag Beach must comply with **33 Blue Flag Criteria**. These criterias are divided into **4 major heads** namely:
  - i) **Environmental education and information**
  - ii) **Bathing water quality**
  - iii) **Environmental management**
  - iv) **Conservation and safety services on the beaches**
- The 'Blue Flag' is a certification that can be obtained by a **beach, marina, or sustainable boating tourism operator**, and serves as an **eco-label**. The certification is awarded by the **Denmark-based non-profit Foundation for Environmental Education (FEE)**, which sets stringent environmental, educational, safety-related, and access-related criteria that applicants must meet and maintain. It is awarded annually to beaches and marinas in FEE member countries.
- **India has now 10 International blue flag beaches** with the addition of Kovalam and Eden beaches this year and recertification for 8 beaches which got the tag in 2020.
- **Other Eight Beaches which have Received the Certification:** Ghoghla in Daman & Diu, Shivrajpur in Gujarat, Kasarkod in Karnataka, Padubidri in Karnataka, Kappad in Kerala, Rushikonda in Andhra Pradesh, Golden beach of Odisha, Radhanagar beach in Andaman and Nicobar.

### Plastic Waste Management Amendment Rules, 2021

Ministry of Environment, Forest and Climate Change (MoEFCC) has notified Plastic Waste Management Amendment Rules, 2021, prohibiting identified single use plastic (SUP) items by 2022.

**Single-use Plastics:-** Plastics that are used **just once**, as in disposable packaging and products. They are made primarily from fossil fuel-based chemicals (petrochemicals).

Microplastics are defined as synthetic solid particles with sizes ranging from **1-5 mm (millimetre)**, which are insoluble in water. Microplastics have been found in tap water, beer and even salt.

#### Key Provisions In Amendment Rules

- Prohibition of *manufacture, import, stocking, distribution, sale and use* of SUP, including polystyrene and expanded polystyrene, commodities from the 1st July, 2022. The ban will **not apply to commodities made of compostable plastic**.
- **Thickness** of plastic carry bags to be increased from **50 microns to 75 microns** from 30th September, 2021 and to 120 microns from the 31st December, 2022
- Guidelines for **Extended Producer Responsibility/EPR** (as per Plastic Waste Management Rules, 2016) has been given *legal force* through the 2021 Rules.
- The **plastic packaging waste**, which is not covered under the phase out of identified SUP items, shall be collected and managed in an environmentally sustainable way through the Extended Producer Responsibility (EPR) of the **Producer, importer and Brand owner (PIBO)**, as per Plastic Waste Management Rules, 2016.

**First Instalment Of State Disaster Relief Fund Released**

The Finance Ministry has released 50% of the amount. The total amount of SDRF to be released for 2021-22 is Rs 8,873 crores.

**State Disaster Response Fund**

- It was constituted based on the recommendations of **13th Finance Commission**.
- It was constituted under Disaster Management Act, 2005.
- It is audited by the Comptroller and Auditor General of India (CAG) every year.
- The Central Government contributes **75% of the SDRF allocation** for general category states. Around **90%** is contributed to the Special Category States and UTs.
- Disasters Covered under SDRF: Cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves.
- Local Disasters: A State Government may use up to 10% of the funds available under SDRF for providing immediate relief to the victims of natural disasters that they consider to be 'disasters' within the local context in the State and which are not included in the notified list of disasters of the Ministry of Home Affairs.
- The State Disaster Response Funds are supplemented by the National Disaster Response Funds.

**An Unfamiliar Lineament Is Among The Factors Behind Frequent Earthquakes In Sonitpur Area**

- National Centre of Seismology (NCS) recorded 29 earthquakes of magnitude varying from 2.6-4.7 in **Northern Assam's** Sonitpur.
- According to Geological Survey of India (GSI), Sonitpur district lies within a tectonically complex triangular area. It is bounded by the east-west trending **Atherkhet Fault**, the northwest-southeast trending **Kopili Fault** and a north-south trending lineament.
- The two faults and the lineament, along with the oblique convergence of Indian plate, have caused frequent earthquakes.
- The Indian plate is moving northeast toward the Eurasian plate in the Himalayan region, their oblique collision and release of stress and strain accumulated in the local tectonic or fault environments lead to earthquakes.
- It is a linear feature in a landscape that is an expression of an underlying geological structure such as a fault, fracture, or joint.
- These are usually associated with faults and linear zones of fracturing, bending deformation, and increased permeability of the crust.

**Indigenously Developed 'Anti-Hail Guns' To Be Used In HP**

- To help out horticulturists who face crop damage due to hailstorms, the Himachal Pradesh government will be testing the use of indigenously developed 'anti-hail guns'.
- An anti-hail gun is a machine which **generates shock waves** to disrupt the growth of hailstones in clouds. The gun is "fired" by feeding an **explosive mixture of acetylene gas and air into its lower chamber**, which releases a shock wave (which travel faster than the speed of sound, such as those produced by supersonic aircraft).
- These shock waves supposedly stop water droplets in clouds from turning into hailstones, so that they fall simply as raindrops.

Hail is produced by **cumulonimbus clouds**, which are generally large and dark and may cause thunder and

lightning. In such clouds, winds can blow up the water droplets to heights where they freeze into ice. The frozen droplets begin to fall but are soon pushed back up by the winds and more droplets freeze onto them, resulting in multiple layers of ice on the hailstones.

### Ocean Rewilding

- The concept of Ocean Rewilding is related to restoring the natural state of water bodies e.g; oceans, seas, etc. Rewilding is restoring to its natural uncultivated state.
- This is done by introducing animal or plant species that have been exterminated (destroyed completely) and allowing them to grow without human interference with the aim to restore coastal fish population, tidal marshes, mangroves, and seagrasses etc.
- Till now, Ocean Rewilding project have been initiated by **France** (BioRestore Project 2012), **United Kingdom** (Sea Grass REstoration Project, 2020).
- Examples of Rewilding: Reintroduction of wolves at Yellowstone (USA), pygmy hog returning to Assam, and conserving Indian rhinos at Dudhwa Tiger Reserve, Blackbucks in bisalpur, Jodhpur.

### Section 51 of Disaster Management (DM) Act, 2005

- Former Chief Secretary of West Bengal was recently served a show-cause notice by Union Home Ministry under Section 51 of Disaster Management (DM) Act, 2005, punishable by imprisonment of up to two years or a fine or both.
- The officer abstained himself from a review meeting taken by Prime Minister Narendra Modi at cyclone affected Kalaikunda in West Bengal on May 28. This way he has acted in a manner tantamount to refusing to comply with lawful directions of the Central Government and is thus violative of **Section 51 (b)**.
  - Though the DoPT (Department of Personnel and Training) is the cadre-controlling authority of Indian Administrative Service (IAS) officers, the show cause notice was served under provisions of the DM Act, which is under the purview of the Home Ministry.
- The Section prescribes “punishment for obstruction” for refusal to comply with any direction given by or on behalf of the Central government or the State government or the National Executive Committee or the State Executive Committee or the District Authority under the Act.

### About DM Act 2005

- The DM Act was passed by the government of India in **2005** for the efficient management of disasters and other matters connected to it. However, it came into force in **January 2006**.
- It was invoked for the first time in the country in the wake of the Covid-19 pandemic in the year 2020.
- The Centre, through **NDMA headed by the PM**, invoked the provisions of the Act to streamline the management of the pandemic, empowering District Magistrates to take decisions and centralise other decisions on supply of oxygen and movement of vehicles.
- **Structure of Disaster Management**
  - National Disaster Management Authority (NDMA) **headed by PM**, an apex **statutory body** was established in 2005, under the **Disaster Management (DM) Act 2005**.
  - **State Disaster Management Authority (SDMA)**: Headed by the **Chief Minister of the respective state**, the SDMA lays down the policies and plans for disaster management in the state.
  - **District Disaster Management Authority (DDMA)**: Section 25 of the DM Act provides for the constitution of DDMA for every district of a state.

## Hydro-Meteorological Calamities

Union Home Ministry has released **data on fatalities** caused due to hydro-meteorological calamities.

- Natural hazards are severe natural phenomena or events, broadly classified in two categories:

hydro-meteorological

geological hazards

- **Tropical cyclones, heavy rainfall, severe thunderstorms, floods and drought** are hydro-meteorological hazards whereas **earthquakes and volcanic eruptions** are grouped under geological hazards.
- **Landslides and avalanches** are caused by a combination of geological and hydro-meteorological factors
- Hydro-meteorological calamities accounted for 14% of the deaths in the country.
- Various types of fatal landslip events are common almost every year, mainly in the Himalayan States, in the Western Ghats, and Konkan areas.
- **West Bengal** has recorded the highest deaths due to such calamities among all States, followed by Madhya Pradesh and Kerala. In Madhya Pradesh and Kerala, the spike in the casualties has been caused by floods.

## Initiatives for Disaster Risk Reduction

Sendai Framework for Disaster Reduction 2015-30

United Nations Office for Disaster Risk Reduction (UNDRR)

Coalition for Disaster Resilient Infrastructure

## Aapada Mitra Programme

- Government has announced plans to have **Disaster Management Volunteers (Aapda Mitras)** in 350 districts of the country and also released documents for **Common Alerting Protocol (CAP)**.
  - ✓ CAP is a simple but **general format for exchanging all-hazard emergency alerts** and public warnings over all kinds of networks.
- It is a **Central Sector Scheme**, launched in May 2016, with **NDMA** as its implementing agency.
- **Aim: To provide the community volunteers** with the skills that they would need to **respond to their community's immediate needs** in the aftermath of a disaster thereby enabling them **to undertake basic relief and rescue tasks during emergency situations** such as **floods, flash-floods and urban flooding**.

## O-SMART Scheme

- Cabinet Committee on Economic Affairs approved the continuation of the '**Ocean Services, Modelling, Application, Resources and Technology (O-SMART)**' Scheme for the period of 2021-26.
- Launched in 2018, it is a government scheme that aims at **promoting ocean research and setting up early warning weather systems**.
- It also aims at **addressing ocean development activities** such as technology, services, resources, science, and observations as well as **offering required technological assistance for implementing aspects of the Blue Economy**.
- **Implementing Agency:** The autonomous institutes of the Ministry of Earth Sciences implement O-SMART scheme
  - ✓ National Institute of Ocean Technology (NIOT), Chennai
  - ✓ Indian National Centre for Ocean Information Services (INCOIS), Hyderabad
  - ✓ National Centre for Coastal Research (NCCR), Chennai

- ✓ Centre for Marine Living Resources and Ecology (CMLRE), Kochi
- ✓ National Centre for Polar and Ocean Research (NCPOR), Goa

### ACROSS Scheme

- The Cabinet Committee on Economic Affairs has approved the continuation of **Atmosphere & Climate Research- Modelling Observing Systems & Services (ACROSS)** Scheme along with its **eight sub-schemes for five years** (2021-2026).
- It pertains to the atmospheric science programs of the **Ministry of Earth Sciences (MoES)** and addresses different aspects of weather and climate services. It will offer improved weather, climate, ocean forecast and services, and other natural hazards related services.
- It will be implemented by the **Ministry of Earth Sciences through its institutes** namely **India Meteorological Department (IMD)**, **Indian Institute of Tropical Meteorology (IITM)**, National Centre for Medium Range Weather Forecasting (NCMRWF), and **Indian National Centre for Ocean Information Service (INCOIS)**.

### Heli-Borne Survey For Water Management

- The **Ministry of Jal Shakti** has launched a Heli-Borne Survey Technology for water management in the arid areas of Rajasthan.
- Developed by **Council of Scientific and Industrial Research (CSIR)**-National Geophysical Research Institute (NGRI), it will provide information about level, quantity, and quality of ground water.
- The Heli-borne geophysical mapping technique of CSIR-NGRI provides a **high-resolution 3D image** of the subsurface up to a depth of 500 metres below the ground. The main advantages of the Heliborne geophysical survey is that it is **fast, highly data dense, precise and economical**.

### CRISP-M Tool

- CRISP-M stands for **Climate Resilience Information System and Planning** (CRISP-M).
- **Union Minister of Rural Development & Panchayati Raj** jointly launched this tool. It was developed with the help of the British Government and all the stakeholders.
- It is a tool for making *Mahatma Gandhi National Rural Employment Guarantee Scheme* (MGNREGA) more efficient and outcome-oriented.
- It will study the soil data, rainfall data, drought data of a place and after analyzing these data further, the tool gives us an idea of what other infrastructure we need to build next under MGNREGA, which will help in solving climate change issues.
- This tool will be available as a **website or mobile application**. Inside there are at least 10 or more different geographic information systems such as maps, data support, climate information systems, implementation and monitoring systems.

### MGNREGA Scheme

- It is **one of the largest work guarantee programmes** in the world. It was launched on 2<sup>nd</sup> February 2006.
- The **Mahatma Gandhi National Rural Employment Guarantee Act** was passed on 23<sup>rd</sup> August 2005.
- **Objective:** To guarantee **100 days of employment in every financial year** to adult members of any rural household willing to do public work-related unskilled manual work.
- **Legal Right to Work:** Unlike earlier employment guarantee schemes, the act **aims at addressing the**

causes of chronic poverty through a rights-based framework.

- **Demand-Driven Scheme:** The most important part of MGNREGA's design is its legally-backed guarantee for any rural adult to get work within 15 days of demanding it, failing which an 'unemployment allowance' must be given. This demand-driven scheme enables the self-selection of workers.
- At least **one-third of beneficiaries have to be women.**
- Wages must be paid according to the statutory minimum wages specified for agricultural labourers in the state under the Minimum Wages Act, 1948 (now subsumed under Code on Wages, 2019).

### Kaho Village

- Arunachal Pradesh is planning to make a **documentary on Kaho, a village on the China border** to mark 75<sup>th</sup> year of Independence.
- Kaho is the **first village from China border** in Anjaw district. **Anjaw is one of the 11 districts of Arunachal Pradesh** that share their border with China. **Kaho had weathered the Chinese attack in 1962.** Its people had assisted Indian soldiers who had been outnumbered.
- According to the **2011 census**, Kaho has only 65 residents and a literacy rate of 64.15%.
- A documentary on village and the locals belonging to **Meyor tribe** will be made. **Meyors are also animists** like the Mishmis but they have also adopted **Mahayana Buddhism.**
- **Tribes of Arunachal Pradesh include** *Abor, Aka, Apatani, Dafla, Galong, Khampti, Howa, Mishmi, Monpa, Momba, Any Naga tribes, Sherdukpen, Singpho.*
- **One of seven villages in the Kibithoo block bisected by the Lohit river.**

**Lohit River:** It is a **tributary of Brahmaputra River.** Brahmaputra River originates under the name of **Siang or Dihang**, from the **Chemayungdung glacier of Kailash range** near Mansarovar lake (Tibet). It enters India west of Sadiya town in Arunachal Pradesh. It **originates in eastern Tibet**, in the **Zayal Chu range** and surges through Arunachal Pradesh for 200 km, before reaching in the plains of Assam.

**Water Management System For Toxic Textile Effluents**

- Indian researchers have developed an improved water management system that can completely **reuse dye wastewater** from textile industries, eliminating its **toxicity** and making it suitable for domestic and industrial usage.
- Modified treatment process consisting of the primary dosing step, followed by the sand filtration step, another AOP (advanced oxidation process), and subsequent carbon filtration step.
- AOP technology is used for degrading and mineralizing recalcitrant organic matter from effluent wastewater.

## POLITY AND GOVERNANCE

### Constitution Day 26th November

Ministry of Law & Justice has launched 'Online Course on Indian Constitution' on the eve of 'Constitution Day' as a part of celebrations of 'Azadi Ka Amrit Mahotsav' for 75 years of India's Independence.

- It is celebrated on **26th November** every year. On this day in 1949, the **Constituent Assembly of India formally adopted the Constitution of India** that came into force on 26th January 1950.
- It is also known as **National Law Day**.
- The Ministry of Social Justice and Empowerment on **19th November 2015**, notified the decision of the Government of India to **celebrate 26 November as 'Constitution Day'**.

### Renunciation Of Citizenship Simplified

Ministry of Home Affairs (MHA) has **simplified the process** for Indians who want to renounce their citizenship. Provisions have been made for applicants to **upload documents online**, with an upper limit of **60 days** for the renunciation process to be completed after "verification of documents".

- **Acquisition of Indian Citizenship** - Citizenship Act of 1955 prescribes 5 ways – **Birth, descent, registration, naturalisation and incorporation of territory.**
- **Citizenship (Amendment) Act, 2019**-To fast-track citizenship for **persecuted religious minorities**, specifically **Hindus, Sikhs, Buddhists, Jains, Parsis and Christians, from Afghanistan, Bangladesh and Pakistan** who entered India **prior to 2015**.
  - ✓ The requirement for them to stay in India for at least 11 years before applying for Indian citizenship **by naturalization** has been reduced to **5 years**.

### Ways to Renounce Citizenship in India

- **Voluntary**- If an Indian citizen wishes, who is of full age and capacity, he can relinquish citizenship of India by his will.
- **Termination**- If a person takes the citizenship of another country, then his Indian citizenship ends automatically. However, this provision does not apply when India is busy in war.
- **Deprivation By Government**
  - ✓ If citizen has disrespected the Constitution
  - ✓ If obtained citizenship by fraud
  - ✓ Citizen has unlawfully traded or communicated with the enemy during a war.
  - ✓ Within **5 years of registration or naturalisation**, a citizen has been sentenced to **2 years of imprisonment** in any country.
  - ✓ Citizen has been living outside India **for 7 years continuously**.

### Constitutional Provisions of Citizenship

- It is listed in the **Union List** and thus is under the exclusive jurisdiction of Parliament.
- The Constitution does not define the term 'citizen' but details of various categories of persons who are entitled to citizenship are given in Part 2 (Articles 5 to 11).
- Unlike other provisions of the Constitution, which came into being on 26th January, 1950, these articles

were enforced on 26th November, 1949 itself, when the Constitution was adopted.

### Registration Of Births And Deaths Act, 1969

Centre has proposed amendments to **Registration of Births and Deaths Act, 1969** that will enable it to “maintain the database of registered birth and deaths at the national level”. Presently, registration of births and deaths is done by the **local registrar appointed by States**.

#### Proposed Amendments

- **Chief Registrar (appointed by the States)** would maintain a unified database at the State level and integrate it with the data at the “national level,” maintained by the **Registrar General of India (RGI)**.
- The appointment of “**Special Sub-Registrars**, in the event of disaster, with any or all of his powers and duties for on-the-spot registration of deaths and issuance.

#### How Is It Helpful

The database can be used to update the National Population Register (Citizenship Act, 1955), electoral register, Aadhaar, ration card, passport and driving license databases

### Ladakh Resident Certificate Order 2021

Ladakh administration has decided to issue “**Resident Certificate**” only to the **Permanent Resident Certificate** holders of the region, unlike J&K where new domicile laws allowed outsiders too to apply for jobs, land and other facilities.

Objective: It is to **temporarily** define Resident of UT of Ladakh for the purpose of appointment to all the **non-gazetted** posts borne on the establishment of any department or service of administration of Ladakh.

#### Permanent Residence Certificate (PRC)

- It is a kind of domicile certificate which helps people in availing domicile linked quotas in **government jobs** and admission in **educational institutions**.
- For obtaining a ration card of the respective state, cast the vote in elections, availing the benefits of **various schemes** of the state or to claim **scholarships** of the State.
- PRC is issued by states like **Arunachal Pradesh, Assam, Mizoram, Meghalaya, Tripura & Manipur**.

### Flag Code of India

- The first national flag, which consisted of **three horizontal stripes of red, yellow and green**, is said to **have been hoisted on August 7, 1906**, in Calcutta (now Kolkata).
- In 1921, freedom fighter **Pingali Venkayya** proposed a **basic design of the flag, consisting of Two Red and green bands**. After undergoing several changes, the Tricolour was adopted as a national flag at a **Congress Committee meeting in Karachi in 1931**.
- The Indian flag was adopted in its present form during a meeting of the **Constituent Assembly held on July 22, 1947**.

#### Rules Governing The Display Of Tricolour

The Emblems and Names  
(Prevention of Improper  
Use) Act, 1950

The Prevention of Insults to  
National Honour Act, 1971.

Flag Code of India , 2002

1. **The Emblems and Names (Prevention of Improper Use) Act, 1950:** It restricts the use of **national flag**, the coat-of-arms used by a government department, the official seal of the President or Governor, the pictorial representation of Mahatma Gandhi and the Prime Minister, and the Ashoka Chakra.
2. **Prevention of Insults to National Honour Act, 1971** prohibits the desecration of or insult to the country's national symbols, including the *national flag*, the Constitution, the national anthem and the Indian map.
  - A person who is convicted for the following offences under the Act is disqualified to contest in the elections to the Parliament and state legislature for 6 years.
  - Further, **putting any kind of inscription upon the flag**, using it to cover a statue, a monument or platform, and embroidering or printing it on cushions, handkerchiefs, napkins or any dress material is also considered disrespect to the Tricolour, according to the Act.
  - Moreover, the **flag should not be allowed to touch the ground or trail in water**, or be put up in an inverted manner.
3. In 2002, the **Flag Code of India** came into effect which allowed the **unrestricted display** of the Tricolour as long as the honour and dignity of the flag were being respected. The Flag Code 2002 states that there will be no restriction on the display of the flag by public and private bodies and educational institutions except to the extent as laid down in the Emblems and Names (Prevention of Improper Use) Act, 1950 and the Prevention of Insults to National Honour Act, 1971. The flag code **did not replace the pre-existing rules** governing the display of the flag.
4. **Article 51A (a):** It shall be the duty of every citizen of India to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.

### Employment In Private Sector Bill

Jharkhand Assembly has passed **Employment of Local Candidates in Private Sector Bill 2021**, which provides **75% reservation** for local people in the **private sector** up to **Rs 40,000 salary a month**. Once notified, Jharkhand will become the **3rd State** in the country, after Andhra Pradesh and Haryana, to pass such law.

#### Bill Can Be Challenged to Violate Following Articles

- **Article 14:** Equality before the law or the equal protection of the laws within the territory of India. Reservations to locals are against that equality.
- **Articles 15(1) and 15(2)** also prohibit the state from discriminating against any citizen **only** on grounds of religion, race, caste, sex, **place of birth**. But clauses (3) to (5) of Article 15 *empower the state* to provide for positive discrimination.
- **Article 16(1):** Equality of opportunity for all citizens in matters relating to '**employment or appointment**' to any *office under the State*.
- ✓ 16(3): It provides an exception by saying that *Parliament* may make a law "prescribing" a requirement of residence for jobs in a particular state. **This power vests solely in the Parliament, not state legislatures.**
- ✓ Article 16(3) allows reservation based on the residence by a parliamentary law in matters of **public employment and not in private employment**.
- **Article 19(1)(g):** Right to practice any profession, or to carry on any occupation, trade or business. Private sector firms can claim that the law interferes with their constitutional rights to carry on their trade freely.

### LOCAL PREFERENCE

<b>Maharashtra</b>   Private sector to employ 80% domiciled workers (Maha residents for more than 15 years); <b>Status:</b> Planned, not implemented	for state govt jobs; <b>Status:</b> 70% quota applied, 'children of MP' at planning stage
<b>Haryana</b>   Ordinance mandating 75% quota for locals in private sector jobs; <b>Status:</b> Planned, not implemented	<b>Karnataka</b>   Pvt industries to give priority to Kannadigas in clerical and shop-floor jobs; <b>Status:</b> Rules amended, follow-up law not passed yet
<b>Madhya Pradesh</b>   70% quota in pvt sector jobs for locals; only 'children of MP' to be eligible	<b>Andhra Pradesh</b>   Up to 75% quota for locals in govt and pvt sector; <b>Status:</b> Law passed, yet to be implemented

**Vanniyar Reservation Law Unconstitutional**

**Madras high court** has declared as unconstitutional a legislation granting **10.5%** reservation to the Vanniyar community within the **existing 20% quota** (in education and public employment) **for the most backward classes (MBC)** in Tamil Nadu.

**Who Are Vanniyars**

- They were one of the largest and most consolidated backward communities that had a consistency in retaining political representation from 1940s and 1950s.
- They were in the backward classes list for many years. The second Tamil Nadu Backward Commission in 1983, held that their population was found to be 13.01% of the State's total population, consisting predominantly of **agricultural laborers**.

**Reason For Court Judgement**

- The Act was unconstitutional mainly on the ground that the **Assembly had no legislative competence** to pass the law on that date of the enactment. This was because the **102nd Amendment** to the Constitution was in force in February 2021.
- **The 102nd Constitution Amendment Act of 2018 inserted Articles 338B and Article 342A**
  - **Articles 338B** deals with the structure, duties and powers of the National Commission for Backward Classes (NCBC).
  - **Article 342A:** President, in consultation with the Governor, would specify the socially and educationally backward classes.
- Later, the **105th Amendment** made it explicit that the States could make changes in their lists.

**Right to Protest**

- Supreme Court observed that it was not against people's right to protest even on matters that are sub judice, but made it clear that such protesters **cannot block public roads indefinitely**.
- Right to Protest is **not an explicit right** under the Fundamental rights, it can be **derived from Right to Freedom of Speech and Expression under Article 19(1)(a), 19(1)(b), 19(1)(c)**.
- **Article 19(2)** imposes reasonable restrictions on the right to freedom of speech and expression.

**Essential Defence Services Bill, 2021**

The bill seeks to replace the Ordinance promulgated in June 2021. It allows central government to **prohibit strikes, lock-outs, and lay-offs** in units engaged in the production of essential defense services.

- Provide for the maintenance of essential defence services.
- Empowers the government to declare services mentioned in it as essential defence services.
- It amends the Industrial Disputes Act, 1947 to include essential defence services under **public utility services**.
  - The undertakings which supply the basic necessary services such as electricity, water, gas, power, transport etc. comes under the purview of the public utility services.
- It also defined strikes and punishments for violations

**Present Status Of Right To Strike**

- The right to strike is **a statutory and a legal right**.
- There is **no fundamental right to strike under Article 19(1) of the Constitution**. However, it includes the fundamental right to protest, the right to form associations, and trade unions.

- The right to strike has been recognized under the **Industrial Disputes Act, 1947**, as a legal right.
- **Trade Unions Act, 1926** also recognizes the right to strike.

### An Institution's Right To Government Aid Is Not A Fundamental Right: Sc

Top court upheld a 2010 policy decision of the Uttar Pradesh government to outsource appointment of Class IV employees in all state-run and aided institutions and schools.

#### Key Highlights of The Judgement

- **Government aid to an institution** is a matter of policy and it is **not a fundamental right**.
- **Article 30 is subject to reasonable restrictions:** For aided institutions, there cannot be any difference between a minority and non-minority one, but **if an institution does not want to accept and comply with the conditions accompanying such aid, it is well open to it to decline the grant and move in its own way.**
- **Article 30(2): State shall not, in granting aid to educational institutions, discriminate against any educational institution** on the ground that it is under the management of a minority, whether based on religion or language.

Article 30(1) recognizes **linguistic and religious minorities** but **not** those based on **race, ethnicity**. It recognizes the right of religious and linguistic minorities to establish and administer educational institutions, in effect recognizing the role educational institutions play in preserving distinct culture.

### Plea In SC Challenging the Constitutional Validity of Section 124-A of IPC (Sedition Law)

- Plea by two journalists—Kishorechandra Wangkhemcha from Manipur and Kanhaiya Lal Shukla from Chhattisgarh - contended that Section 124-A of IPC infringes upon the fundamental right of freedom of speech and expression, guaranteed under **Article 19(1)(a)** of the Constitution. Supreme Court (SC) rejected this plea.
- The constitutionality of sedition was challenged in SC in **Kedar Nath Vs State of Bihar (1962)**. The Court **upheld the law** on the basis that this power was required by the state to protect itself.
- SC laid down that every citizen has a right to say or write about the government, by way of criticism or comment, as long as it does not **"incite people to violence"** against the government established by law or with the intention of creating public disorder.

#### History of Sedition Law

- Lawmakers during 17th century England wanted only **pro government** opinion to survive. The British used this law to suppress opinions against the government. It was used to suppress the freedom movement.
- The law was originally drafted in **1837** by Thomas Macaulay, the British historian-politician, but was omitted when the Indian Penal Code (IPC) was enacted in 1860
- The rule was first used to prosecute Bal Gangadhar Tilak in 1897. After independence Constitution Amendment Act, 1951 introduced **new grounds of public order** to the sedition law. Sedition is defined as an **offense committed under section 124 of IPC**.

#### Section 124A of the IPC

- It defines sedition as crime when "any person by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into **hatred or contempt, or excites or attempts to excite disaffection towards the government established by law in India.**"
- Disaffection includes disloyalty and all feelings of enmity. However, comments without exciting or attempting to excite hatred, contempt or disaffection, will not constitute an offence under this section.

#### Punishment for Offense of Sedition

- Sedition is a **non-bail able** offense. The sentence ranges from imprisonment up to three years to life term, to which a fine may be added.
- The person charged under this law is not eligible to work in the government sector as a government employee.
- They have to live without passports and must produce themselves in court whenever required. Amnesty International was also charged under sedition in 2016 for their programme that showcased human suffering of the Kashmir conflict.

#### Section 501 of IPC

It says, whoever prints or engraves any matter, knowing or having good reason to believe that such matter is defamatory will be punished with simple imprisonment for a term that may extend up to two years or fine or both.

- Assam's newspaper editor and co-owner were charged with Sedition under (**section 124 A**) and section **501**, for editorial believed to promote hostility between the Assamese and Bengali-speaking people of the state.
- As per **Kedar Nath judgment in 1962**, the sedition law was supposed to be applied in rare cases where the security and sovereignty of the country is at stake. Thus, invoking sedition charges against academicians, lawyers, socio-political activists and students is in disregard of the Supreme Court's order.

### Government Again Warns Whatsapp To Scrap 2021 Privacy Policy

- Facebook and WhatsApp explained that the new privacy policy was necessary because WhatsApp had to share some info with Facebook to implement the **e-commerce features** in the app.

**Sharing of Metadata:** WhatsApp held that the end-to-end encryption clause remains intact, which will ensure that it can't see your messages or share them with anyone.

- However, with the updated privacy policy, WhatsApp can now share one's metadata, essentially everything beyond the conversation's actual text.
- Meta data virtually gives a 360-degree profile into a person's online activity.
- The policy is not in tune with the **IT (Intermediary Guidelines) Rules, 2011**. The rules require a body corporate who collects, stores or otherwise deals with data to issue a privacy policy providing for certain safeguards, in addition to imposing various other obligations.
- Policy is against the recommendations of **Justice B N Srikrishna Committee** - The *principle of Data Localisation*, which aims to put curbs on transfer of personal data outside the country, may come in conflict with WhatsApp's new privacy policy.
- Recently, WhatsApp has approached the Delhi High Court challenging the Central government's new **Information Technology Rules, 2021**. The new rules compel the social media platforms to compulsorily enable "the identification of the first originator of the information" in India upon government or court order.
- In its petition before the Delhi High Court, Whatsapp said that it would have to build an ability to identify the first originator of every message, to be served up to the government forever. This means even legal users and their messages would be under watch. It would have a chilling effect on free speech.

### IT RULES 2021

- The new rules have been framed by the Central Government in exercise of powers under section 87 (2) of the **Information Technology Act, 2000** and in supersession of the earlier **IT (Intermediary Guidelines) Rules 2011**.
- The rules prescribe due diligence that must be followed by intermediaries, including social media intermediaries. In case, due diligence is not followed by the intermediary, **Safe Harbour provisions** will not apply to them.
- **Removal of Unlawful Information:** Social media companies are prohibited from hosting or publishing any unlawful information. This information is "*about the interest of the sovereignty and integrity of India, public order, friendly relations with foreign countries, etc.*"
- **Government Can Take Down Content:** If such information is hosted or published, the government can take down such information within 24 hours. The user will be given a notice before his/her content is taken down.
- **Strengthening Traceability:** The government can direct messaging

Safe harbour provisions have been defined under **Section 79** of the IT Act. These *protect social media intermediaries* by giving them **immunity from legal prosecution** for any content posted on their platforms as long as they comply with the legal order to take down content from courts or other authorities.

#### 'Loss Of Safe Harbour' For Twitter.

- It is the courts, not the government, who will decide on whether Twitter or other social media intermediaries can lose this status under law.
- Recently, Twitter lost its intermediary status in India over non-compliance of the new IT rules.

platforms to tie the identity of the user with the message transmitted by him/her for strengthening traceability.

- **Monthly Compliance Report:** The IT rules 2021 call for social media companies to publish a monthly compliance report.

### Israeli Spyware Pegasus And Surveillance Laws In India

- **Pegasus is a spyware tool** developed by an Israeli firm, the **NSO Group**. Spyware spy on people through their phones. Pegasus works by **sending an exploit link**, and if the target user clicks on the link, the malware or the code that allows the surveillance is installed on the user's phone. Once Pegasus is installed, the attacker has complete access to the target user's phone.

- **Communication surveillance in India takes place primarily under two laws:**

Telegraph Act, 1885

Information Technology Act, 2000

- Telegraph Act deals with interception of calls. Under this law, the government can intercept calls only in certain situations — *interests of the sovereignty and integrity of India, the security of the state, friendly relations with foreign states or public order, or for preventing incitement to the commission of an offence.*
- These are the same restrictions imposed on free speech under **Article 19(2)** of the Constitution. The law also states that even this **lawful interception cannot take place against journalists except under a few circumstances.**

#### Rule 491A of Telegraph Act

- A **Secretary to the Government of India in Ministry of Home Affairs** can pass orders of interception in the case of Centre, and a secretary-level officer who is in-charge of the Home Department can issue such directives in case of a state government.

#### IT Act

- **All electronic transmission of data can be intercepted**, apart from the restrictions provided in **Section 5(2) of Telegraph Act & Article 19(2)**
- Section 69 of IT Act adds another aspect that makes it broader — interception, monitoring and decryption of digital information “for the investigation of an offence”.

### Section 66A of the Information Technology Act

- The Supreme Court had expressed shock and dismay over police continuing to register cases under **section 66A** despite it being quashed six years ago (**Shreya Singhal Case 2015**).

#### Section 66A

- It empowered police to make arrests over what policemen, in terms of their subjective discretion, could construe as “offensive” or “menacing” or for the purposes of causing annoyance, inconvenience, etc.

- It prescribed the **punishment** for sending messages through a computer or any other communication device like a mobile phone or a tablet, and a conviction could fetch a maximum of three years in jail.
- SC had noted that Section 66A arbitrarily, excessively and disproportionately invades the **right of free speech, under article 19(1)(a)** and upsets the balance between such right and the reasonable restrictions.

### Preventive Detention

- The Supreme Court has passed an order on the use and applicability of Preventive Detention in the Country. The detention of an individual under preventive detention law should be based on apprehensions

that the concerned person is a **threat to “public order”** affecting the community at large. Mere *‘law and order’* would not be sufficient.

- The state should not arbitrarily use preventive detention to deal with all “law and order” problems, which could be dealt with by **ordinary law**.
- Preventive detention must fall within the four corners of **Article 21 (due process of law)**. It must be read with **Article 22 (safeguards against arbitrary arrest and detention)** and the statute in question.

- **Article 22 of the Constitution** allows for preventive detention and restriction on personal liberty for reasons of state security and public order for a **period not more than three months** unless an Advisory Board reports sufficient cause for extended detention.
- However, under **National Security Act**, none of these rights (right to consult, and to be defended by a legal practitioner of his choice; right to know grounds of detention etc.) are available to the person detained. The government holds the right to conceal information which it considers to be against public interest to disclose.
- Certain Features of National Security Act are:
  - ✓ **NSA** is an act that empowers government to **detain a person** to prevent him or her from acting in any manner prejudicial to **“the security of the state”** or for **“maintenance of the public order.”**
  - ✓ A person can be **detained for up to 12 months without a charge**. A person can be held for **10 days without being told the charges** against them. The person can appeal before a high court advisory board but will not be allowed a lawyer during the trial.
  - ✓ The administrative order is passed either by the **Divisional Commissioner or the District Magistrate**.
  - ✓ It also empowers the government to **detain foreigners** and regulate his/her presence or expel him/her from India.
  - ✓ The law also **takes away an individual’s constitutional right to be produced before the magistrate within 24 hours** as is the case when the accused is in police custody; the detained person also **does not have the right to move a bail application** before a criminal court.
  - ✓ No prosecution or any legal proceeding can be initiated against DM who carried out the orders. Therefore, the **writ of Habeas Corpus is the only protection guaranteed** under the Constitution against the unchecked state power of taking people into custody under the NSA.
  - ✓ The **National Crime Records Bureau (NCRB)**, which collects crime data in India, **does not include cases under the NSA** as no FIRs are registered.

### Gujarat Prohibition Act, 1949

- Introduced by the then Bombay province as **Bombay Prohibition Act, 1949** to overhaul the law relating to intoxicating drugs and narcotics total prohibition. The Bombay state was divided into the states of Maharashtra and Gujarat in 1960.
- Gujarat adopted the prohibition policy in 1960. In 2011, it renamed the Act as Gujarat Prohibition Act.
- Under the Act, a permit is mandatory to purchase, possess, consume or serve liquor. The Act empowers the police to arrest a person for purchasing, consuming or serving alcohol without the permit with punishment ranging from three months to five years in prison.
- The first hint at the prohibition of liquor was through the **Bombay Abkari Act, 1878**. This Act dealt with levying of duties on intoxicants among other things.

The Constitution places a responsibility on all state governments to “at least contain, if not curtail, consumption of alcohol” (**Article 47 under DPSP**).

## Right To Be Forgotten

A petition by two businessmen, who have invoked the Right to be forgotten, and sought the removal of certain articles relating to a criminal case lodged against them, from various online platforms.

- Right to be forgotten, in Indian context, falls under the purview of an Individual's right to privacy. The Right to Privacy was declared a fundamental right (under **Article 21**) by the Supreme Court in its landmark verdict (**Puttuswamy case 2017**).
- RTBF has been recognised as a statutory right in the European Union under the **General Data Protection Regulation (GDPR)**.
- In India, there is no law that specifically provides for the right to be forgotten. However, the Personal Data Protection Bill 2019 recognised this right.

### Personal Data Protection Bill, 2019

Currently, the usage and transfer of personal data of citizens is regulated by the Information **Technology (IT) Rules, 2011**, under the IT Act, 2000. The PDP Bill 2019 was introduced in Lok Sabha, on December 11, 2019.

- **Objective:** The Bill seeks to provide for protection of personal data of individuals, and establishes a **Data Protection Authority** for the same.
- **Applicability:** The Bill governs the processing of personal data by: (i) government, (ii) companies incorporated in India, and (iii) foreign companies dealing with personal data of individuals in India.
- **Obligations of data fiduciary:** All data fiduciaries must undertake certain transparency and accountability measures such as:
  - **Implementing security safeguards** (such as data encryption and preventing misuse of data),
  - **Instituting grievance redressal mechanisms** to address complaints of individuals.
- **Rights of the individual:** The Bill sets out certain rights of the individual (or data principal). These include the right to:
  - **Obtain confirmation from the fiduciary** on whether their personal data has been processed and **Seek correction** of inaccurate, incomplete or out-of-date personal data.
  - **Have personal data transferred** to any other data fiduciary in certain circumstances.
  - **Restrict continuing disclosure** of their personal data by a fiduciary, if it is no longer necessary or consent is withdrawn.
- **Grounds for processing personal data:** The Bill allows processing of data by fiduciaries only if consent is provided by the individual. However, in certain circumstances, **personal data can be processed without consent**. These include: (i) if required by the State for providing benefits to the individual, (ii) legal proceedings, (iii) to respond to a medical emergency.
- **Social media intermediaries:** Intermediaries which enable online interaction between users and allow for sharing of information, which have users above a notified threshold, and whose actions can impact electoral democracy or public order, have certain obligations, which include providing a voluntary user verification mechanism for users in India.
- **Data Protection Authority:** It may take steps to protect interests of individuals, prevent misuse of personal data and ensure compliance with the Bill. It will consist of a chairperson and six members, with at least 10 years' expertise in the field of data protection and information technology.
- **Transfer of data outside India:** Sensitive personal data may be transferred outside India for processing if explicitly consented to by the individual, and subject to certain additional conditions. However, such sensitive personal data should continue to be stored in India.
- **Exemptions:** The central government can exempt any of its agencies from the provisions of the Act:

- **In interest of security of state**, public order, sovereignty and integrity of India and friendly relations with foreign states, and
- **For preventing incitement to commission of any cognisable offence** relating to the above matters.
- **Processing of personal data is also exempted** from provisions of the Bill for certain other purposes such as: (i) prevention, investigation, or prosecution of any offence, or (ii) personal, domestic, or (iii) journalistic purposes. However, such processing must be for a specific, clear and lawful purpose, with certain security safeguards.
- **Sharing of non-personal data with government:** The central government may direct data fiduciaries to provide it with any: (i) non-personal data and (ii) anonymised personal data (where it is not possible to identify data principal) for better targeting of services.
- **Amendments to other laws:** The Bill amends the **Information Technology Act, 2000** to delete the provisions related to compensation payable by companies for failure to protect personal data.

Recently, a Joint Parliamentary Committee (JPC) has finalised and adopted the draft report on **Personal Data Protection (PDP) Bill, 2019** by a majority. The JPC has got five extensions to submit a report on the Bill in two years. JPC on Personal Data Protection (PDP) Bill 2019 has argued in its report defending the controversial **exemption clause 35** that allows the Government to keep any of its agencies outside the purview of the law **in the name of “public order”, ‘sovereignty’, “friendly relations with foreign states” and “security of the state”**. The committee has retained the Clause with minor change.

### **Karnataka Passes Anti-Conversion Bill In Assembly**

Karnataka Assembly adopts the **Karnataka Protection of Right to Freedom of religion** bill. Other states which have passed bills to restrict religious conversion are *Arunachal Pradesh, Chhatisgarh, Gujrat, Himachal Pradesh, Odisha, Uttar Pradesh, and Uttrakhand.*

#### **Salient Features of the Act**

1. It prohibits conversion from one religion to another by misrepresentation, force, fraud, allurement, or marriage.
2. The offense of conversion is **cognizable and non-bailable**. It will attract a jail term of three to five years and a fine of Rs 25,000 for people found violating the law and a jail term of three to 10 years, and a fine of Rs. 50,000 for people converting minors, women and persons from the SC and ST communities.
3. Locus Standi Doesn't Apply: Complaints of conversions can be filed by family members or relatives or any person in association.
4. It provides an exemption in the case of a person who reconverts to his immediate previous religion.
5. Any person intending to convert to another religion will have to inform District Magistrate at least 30 days in advance.

#### **Anti-Conversion Provisions**

There has been no central legislation restricting or regulating religious conversion.

- **Article 25** guarantees the freedom to profess, propagate and practice religion. However, no person shall force their religious belief on others.
- **Article 21** says that the right to marry a person of one's choice is integral. Supreme Court in **Hadiya Judgement 2017** says that neither the law nor state can dictate a choice of partners.

**Right To Sit**

- **Tamil Nadu government** tabled a Bill in the Legislative Assembly making it mandatory for establishments to provide **seating facilities** for employees. The Bill sought to amend **Tamil Nadu Shops and Establishments Act, 1947**.
- The persons are made to stand throughout their duty time” resulting in varied health issues.
- It is in conformity with **Article 42** of Constitution (DPSP) which prompts the State to make provisions for just and humane conditions at work.
- Past demands: In 2018 Workers of textile showrooms in **Kerala** had gone on a protest demanding the ‘Right to Sit’, prompting the government to amend the Kerala Shops and Establishments Act.

**Grant In Aid For Rural Local Bodies**

- The **Ministry of Finance** has released an amount of Rs. 13,385.70 crore to 25 States for providing grants to **rural local bodies**. This Grant-in-aid is the 1st installment of Tied grants for the year 2021-22. The grants have been released as per the recommendations of the **15th Finance Commission**.
- **Finance Commission (FC) Grants:** Union Budget provides **funds to local bodies, state disaster relief funds** and **compensates any revenue loss to states** after devolution of taxes on the recommendation of FC.
- **73rd Constitutional Amendment, 1992** requires both the Centre and states to help Panchayati Raj institutions to evolve as a **unit of self-governance** by assigning them funds, functions and functionaries.

**Finance Commission (FC)**

- It is a **constitutional body** that **determines the formula for distributing the tax proceeds between the Centre and States**, and among the states as per the constitutional arrangement and present requirements.
- Under **Article 280** of the Constitution, the **President of India** is required to constitute a FC **at an interval of five years** or earlier.
- The **15th FC** was constituted in November 2017, under the chairmanship of **NK Singh**. Its recommendations will cover a period of five years from the year 2021-22 to 2025-26.

**Recommendations of 15th FC**

Vertical Devolution (Devolution of Taxes of the Union to States)	Horizontal Devolution (Allocation Between the States)
<ul style="list-style-type: none"> <li>○ It has recommended <b>maintaining the vertical devolution at 41%</b> - the same as in its <b>interim report for 2020-21</b>.</li> <li>○ It is <b>at the same level of 42% of the divisible pool</b> as recommended by the <b>14<sup>th</sup> Finance Commission</b>.</li> <li>○ It has <b>made the required adjustment of about 1%</b> due to the changed status of the erstwhile State of Jammu and Kashmir into the new <b>UTs of Ladakh and Jammu and Kashmir</b>.</li> </ul>	<p>For horizontal devolution, it has suggested</p> <ul style="list-style-type: none"> <li>• <b>12.5% weightage to demographic performance</b></li> <li>• <b>45% to income</b></li> <li>• <b>15% each to population and area</b></li> <li>• <b>10% to forest and ecology</b></li> <li>• <b>2.5% to tax and fiscal efforts.</b></li> </ul>

**Grants for Rural Local Bodies (Tied vs Untied Grant)**

- Out of the total Grant-in-aid allocated for Panchayati Raj institutions, **60% is ‘Tied Grant’**. Tied grants are meant to ensure availability of additional funds to the Rural local bodies over and above the funds allocated by the Centre for **improving the sanitation and maintenance of Open-Defecation Free (ODF) status** and

supply of drinking water, rainwater harvesting and water recycling under the Centrally Sponsored Schemes.

- **Remaining 40% is 'Untied Grant'** and is to be utilized at the discretion of the Panchayati Raj institutions for location specific needs, except for payment of salaries.

#### **Post Devolution Revenue Deficit (PDRD) Grants to States**

- Revenue deficit grants **emanate from the requirement to meet fiscal needs of States** on their revenue accounts that remain to be met, even after considering their own tax and non-tax resources and tax devolution to them.

Revenue Deficit is **defined as** the difference between revenue or current expenditure and revenue receipts that includes tax and non-tax.

- This grant forms the 2<sup>nd</sup> largest chunk of FC grant after the assistance to local rural bodies. It has recommended post-devolution revenue deficit grants amounting to about **Rs. 3 trillion over the five-year period** ending FY26.
- The **number of states qualifying** for the revenue deficit grants **decreases from 17 in FY22**, the first year of the award period to 6 in **FY26**, the last year.

#### **Grants for Urban Local Bodies**

- Along with grants for municipal services and local government bodies, it includes **performance-based grants for incubation of new cities** and **health grants** to local governments.
- In grants for Urban local bodies, **basic grants are proposed only for cities/towns having a population of less than a million.**
- For **Million-Plus cities**, 100% of the grants are performance-linked through the **Million-Plus Cities Challenge Fund (MCF)**. MCF amount is linked to the performance of these cities in **improving their air quality** and meeting the service level benchmarks for **urban drinking water supply, sanitation and solid waste management.**

#### **Assistance to SDRF**

- The central government also provides funds to State Disaster Relief Funds in addition to funding the National Disaster Management Authority (NDMA).
- The assistance to the state government's disaster relief authorities is provided as per the recommendations of the FC.

In addition to the 4 main transfers under the FC Grants, the Centre also transfers a considerable sum to states and vulnerable groups from its own resources.

- Central pool of resources for north-eastern region and Sikkim
- Externally aided project grants/loans
- Schemes for north-east council
- Schemes under Article 275 (1) of the Constitution
  - ✓ It provides for the payment of such sums as Parliament may by law provide as grants-in aid to such States as Parliament may determine to be in need of assistance.
  - ✓ The grants are paid out of the Consolidated Fund of India in each year, and different sums may be fixed for different States
- Special central assistance to scheduled castes and special central assistance to tribal areas.

**Performance Based Incentives and Grants to States**

These grants revolve around four main themes.

- a) **Social sector** focused on **health and education**.
  - b) **Rural economy** focused on **agriculture and the maintenance of rural roads**. The rural economy encompasses **two-thirds of the country's population, 70% of the total workforce and 46% of national income**.
  - c) **Governance and administrative reforms** under which it has recommended grants for **judiciary, statistics and aspirational districts and blocks**.
  - d) **Performance-based incentive system for the power sector**, which is not linked to grants but provides an important, additional borrowing window for States.
- **Fiscal Space for Centre:** Total **15<sup>th</sup> Finance Commission transfers (devolution + grants)** constitutes about **34% of estimated Gross Revenue Receipts** to the Union, **leaving adequate fiscal space** to meet its resource requirements and spending obligations on national development priorities.

**Sixth Schedule And Ladakh**

Member of Parliament from Ladakh demanded to include Ladakh in 6<sup>th</sup> schedule of the constitution. Ladakh became UT in 2019 and since then residents of Ladakh are demanding for 6<sup>th</sup> schedule.

- The primary Scheduled Tribes in Ladakh are **Balti Beda, Bot (or Boto), Brokpa (or Drokpa, Dard, Shin), Changpa, Garra, Mon and Purigpa**.
- There are two **autonomous Hill councils** in **Leh and Kargil**, but none is under the sixth schedule and has limited power. Inclusion will help in democratic devolution of powers and will also enhance the transfer of funds for speedy development of the region.

**Difficulty Behind Ladakh's Inclusion**

- **6<sup>th</sup> Schedule is for the Northeast. For tribal areas in the rest of country, there is the 5<sup>th</sup> Schedule.**
- **No region outside the Northeast has been included in the Sixth Schedule.** In fact, even in Manipur, which has predominantly tribal populations, the autonomous councils are not included in the Sixth Schedule. **Nagaland and Arunachal Pradesh**, which are totally tribal, are also not in the Sixth Schedule
- If included, Ladakh will be the only UT in 6<sup>th</sup> Schedule. Also, bestowing such a status to Ladakh would require a constitutional amendment.

**Sixth schedule**

1. Article 244(2) and 275 (1) of constitution has provisions relating to the administration of tribal areas in the state of **Assam, Meghalaya, Tripura, and Mizoram**. As of now 10 autonomous councils are constituted in these states.
2. Though these areas fall within the executive authority of the state, provision has been made for the creation of the **District Councils and Regional Councils** for the exercise of the certain legislative and judicial powers.
3. Each district is an **autonomous district** and the Governor is empowered to organise and re-organise the autonomous districts.
4. Each autonomous district has a **district council** consisting of **30 members** except Bodoland territorial council. Bodoland territorial council has 40 members.
  - ✓ Out of 30, **4 is nominated by Governor** and **remaining 26 are elected** on the basis of adult franchise.
  - ✓ The elected members hold office for a term of 5 years (unless the council is dissolved earlier) and nominated members hold office during the pleasure of the governor.
  - ✓ Each autonomous region also has a separate regional council.

5. **Village council:** District and regional councils within their territorial jurisdictions can constitute **village councils** or courts for trial of suits and cases between the tribes.

### Constitution (Scheduled Tribes) Order (Amendment) Act 2021

- It amends the nomenclature of certain tribes from Arunachal Pradesh mentioned in the Constitution (Scheduled Tribes) Order, 1950.
- It provides for modifying **Part-XVIII** of the Schedule to the Constitution (Scheduled Tribes) Order, 1950, relating to state of Arunachal Pradesh.
  - At present, there are 18 communities with their synonyms appearing in the illustrative list of STs in respect of the state of Arunachal Pradesh.
- It replaces certain STs with other tribes. This includes Tai Khamti, Mishmi-Kaman (Miju Mishmi), Idu (Mishmi) and Taraon (Digaru Mishmi).
- This amendment in the list of STs, relating to Arunachal Pradesh, will entail no additional recurring expenditure from the Consolidated Fund of India, on account of benefits likely to be provided to persons belonging to the communities proposed.

**Definition of STs:** - The Constitution does not define the criteria for recognition of Scheduled Tribes. However,

#### Article 366(25)

- Only provides process to define Scheduled Tribes

#### Article 342(1)

- The President may with respect to any State or UT, and where it is a State, after consultation with the Governor, by a public notification, specifies the tribes or tribal communities or part of or groups within tribes or tribal communities as STs in relation to that State or UT.

The Constitution is **silent about the criteria** for specification of a community as ST. Primitiveness, geographical isolation, shyness and social, educational & economic backwardness are the traits that distinguish Scheduled Tribe communities from other communities.

### Bill To Restore States' Rights To Specify OBC Groups

The Constitution 127th Amendment Bill, 2021 became 105<sup>th</sup> Amendment Act.

#### Highlights Of The Act

- Seeks to enable state governments to spot Other Backward Classes that are socially and economically backward.
- It amends to provide that the President may notify the list of socially and educationally backward classes only for purposes of the central government.
- It enables **states and union territories to organize their own list** of socially and educationally backward classes. This list must be made by law, and should differ from the central list.

**Empowering the States** | The 127th Constitution Amendment Bill benefits 671 castes in the country and restores the States' rights to make their own list of OBCs

**1** The Bill seeks to restore the power of the States to identify OBCs that are socially and economically backward after a Supreme Court order in May 2021 empowered only the Centre for this

**2** The amendment was thought necessary because the SC, in its order on Maratha reservations, upheld the 102nd Constitutional Amendment Act, which said the President of India, in consultation with Governors, would specify socially and economically backward classes, taking away the powers of the State governments to do so

**3** Several parties also demanded a caste-based census to get a real idea of the number of OBCs in the country and to remove the 50% cap on reservations currently in place

#### National Commission for Backward Classes

- NCBC was established under the National Commission for Backward Classes Act, 1993.
- The Constitution **102nd Amendment Act**, 2018 has given the constitutional status to the NCBC and inserted Articles 338B and Article 342A. This has empowered the President to notify the list of socially and educationally backward classes for any state or UT for all purposes.

- **Article 338B** of the Constitution mandates the central and state governments to consult the NCBC on all major policy matters affecting the socially and educationally backward classes. It deals with the structure, duties and powers of the NCBC
- **Article 342A** says that the President, in consultation with the governor, would specify the socially and educationally backward classes.

### SC Sets Aside Haryana Order Creating A Sub-Category Of Creamy Layer

The Supreme Court **struck down** Haryana govt notification that gave preference to those having income up to Rs 3 lakh within the non-creamy layer group of Backward Classes in government jobs and admission to educational institutions.

### Constitutional And Legal Backing Related To Reservation

- **Article 16(1)** provides for equality of opportunity for all citizens in matters relating to employment or appointment' to any office under the State.
- **Article 16(2)** provides that there cannot be any discrimination on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them.

However, Article 16(4) and 16(4A) provides for the grounds of **positive discrimination or Reservation**.

- **Article 16 (4)** provides that the State can make any provision for the **reservation of appointments or posts** in favour of any backward class of citizens who, in the opinion of the state, are not adequately represented in the services under the State.
- **Article 16 (4A)** provides that State can make any provision for reservation **in matters of promotion** in favour of the SC/ST if they are not adequately represented in the services under the State.

### What Is Creamy Layer

- It is a concept that sets a threshold within which OBC reservation benefits are applicable. While there is a 27% quota for OBCs in government jobs and higher educational institutions, those falling within the "creamy layer" cannot get the benefits of this quota.
- Based on the recommendation of **Mandal Commission**, the government on August 13, 1990 had notified 27% reservation for Socially and Educationally Backward Classes (SEBCs) in vacancies in civil posts and services that are to be filled on direct recruitment.
- After this was challenged, the Supreme Court on November 16, 1992 (Indira Sawhney case) upheld 27% reservation for OBCs, subject to exclusion of the creamy layer

### Part Of 97th Amendment Quashed

- Upholding the Gujarat High Court's 2013 decision striking down **certain provisions** of the 97th constitutional amendment, the Supreme Court held that the **Parliament cannot enact laws with regard to cooperative societies as it is a State subject**.
- The Centre has stated that the amendment was enacted to bring uniformity in the management of cooperative societies and it did not take away the powers of states.
- SC said if the Centre wanted to achieve uniformity then the only way available was to take the **recourse under Article 252** of the Constitution which deals with the power of Parliament to legislate for two or more states by consent.
- The subject of cooperative societies fell in the state list and "belongs wholly and exclusively to the State legislatures to legislate upon" and any change would require the **ratification by at least one-half of the state legislatures** as per **Article 368(2)** of the Constitution.

**Part IX- Panchayats**

**Part IX-A: Municipalities**

**Part IX-B: Cooperative Societies**

- It is declared that Part IXB of the Constitution is operative only insofar as it concerns multi-State cooperative societies (MSCS) both within the various States and in the Union Territories.
- It did not strike down the portions of Part IXB of the Amendment concerning **MSCS** due to the lack of ratification because when it comes to MSCS with objects not confined to one State, the legislative power would be that of the Union of India which is contained in **Entry 44 List I** (Union List).

**Provisions of Indian Constitution Related to Cooperatives:** The Constitution (97th Amendment) Act, 2011 added a new Part IXB right after Part IXA (Municipals) regarding the cooperatives working in India.

- The word “cooperatives” was added after “unions and associations” in **Art. 19(1)(c)** under Part III of the Constitution. This enables all the citizens to form cooperatives by giving it the status of fundamental right.
- A new **Article 43B** was added in the Directive Principles of State Policy (Part IV) regarding the “promotion of cooperative societies.

Pre-independence Scenario: In 1919, cooperation became a provincial subject and the provinces were authorised to make their own cooperative laws under the Montague-Chelmsford Reforms. The categorization carried on to the Government of India Act, 1935.

A new ‘**Ministry of Cooperation**’ has been created for strengthening the cooperative movement in the country by providing a separate administrative, legal and policy framework. It will help deepen cooperatives as a “true people-based movement reaching up to the grassroots” and Streamline processes for ease of doing business’ for cooperatives and enable development of **multistate cooperatives** (MSCS).

### Rengma Nagas Demand An Autonomous District Council

- This comes amid a decision by the Central and the State governments to upgrade **Karbi Anglong Autonomous Council (KAAC) and North Cachar Hills Autonomous Council (NCHAC)** into a **territorial council** like the **Bodoland Territorial Council**.
- With Assam government on verge of inking **peace Accord with Karbi Anglong based militant outfits**, National Socialist Council of Nagaland - Isak-Muivah (NSCN-IM) stated **any agreement that victimize the Rengma Nagas would not be acceptable**.
- The issue in focus is Karbi Anglong, erstwhile known as Rengma Hills. Rengma Hills are made the victims of **aggressive influx of outsiders for vested interest**.

#### About Rengma Tribe

- It is a **Naga tribe** found in Nagaland, Assam and Arunachal Pradesh.
- The first official recording of Rengma Nagas staying in Assam’s Karbi Hills (then known as Mikir Hills) was made in 1855 by Major John Butler.
- Butler recorded that the Rengmas in Karbi Anglong had migrated there from the Naga Hills in the early part of the 18th century, abandoned many of their tribal customs and married within the local communities.
- Festival: Their harvest festival is called **Ngada**.

### Khasi Inheritance Of Property Bill 2021

- The **Khasi Hills Autonomous District Council (KHADC)** in Meghalaya announced that it would introduce the ‘Khasi Inheritance of Property Bill, 2021. The bill is aimed at “equitable distribution” of parental property among siblings in the Khasi community.
- If implemented, the proposed Bill would modify an age-old customary practice of inheritance of the matrilineal Khasi tribe.

**Matrilineal System of Inheritance**

- The **three tribes of Meghalaya — Khasis, Jaintias, and Garos**— practice a matrilineal system of inheritance. In this system, **lineage and descent are traced through the mother’s clan**.
- **Youngest daughter (khatduh)** of the family is entrusted the full share of the ancestral - or the clan’s - property.
- The **khatduh becomes the “custodian” of the land**, and assumes all responsibility associated with the land, including taking care of aged parents, unmarried or destitute siblings.
- **If a couple does not have any daughters**, then the **property goes to the wife’s elder sister**, and her daughters.
- If the wife does not have sisters, then the **clan usually takes over the property**.

**Proposal To Shift Laskhwadeep’s Legal Jurisdiction From Kerala High Court To Karnataka High Court**

- The proposal was initiated by the administration after several litigations were moved before the Kerala High Court against the decisions taken by the islands’ new Administrator Praful Khoda Patel.
- The jurisdiction of a High Court can be shifted only through an **Act of Parliament**.

**Article 241** •It states that Parliament may by law constitute a HC for a UT or declare any court in any such territory to be a HC for all or any of the purposes of this Constitution.

**Section 4 of Art.241** •It mentions that “nothing in this Article derogates from the power of Parliament to extend or exclude the jurisdiction of a high court for a State to, or from, any Union Territory or part thereof”.

- According to **Article 214**, each state of India shall have a High Court. However, Article 231 also mentions that there can be a common High Court for two or more States or for two or more states and a union territory.
- There are **25 High Courts** in India, 6 having control over more than one State/UT. Delhi has a High Court of its own among the UTs. Each High Court shall consist of a Chief Justice and such other judges as appointed by the President of India.

**Collegium System for Appointment of Judges**

For the first time ever, the Supreme Court Collegium led by the Chief Justice of India (CJI) recommended/selected as many as **nine persons** at one go to be appointed to the apex court.

**Collegium System**

- It is a system under which appointments/elevation of judges/lawyers to SC and transfers of judges of HCs and Apex Court are decided by a **forum of the CJI and the four senior-most judges of the SC**.
- There is no mention of Collegium either in the original Constitution of India or in successive amendments.
- The recommendations of Collegium are **binding on the Central Government** if the Collegium sends the names of judges/lawyers to the government for **second time**.

A JURY OF JUDGES		
<b>WHAT IS THE COLLEGIUM SYSTEM?</b>		<b>CRITICISMS</b>
<ul style="list-style-type: none"> <li>• A forum which decides on <b>appointments, transfers (A/Ts) of judges</b>.</li> <li>• Comprised of Chief Justice of India, <b>4 Supreme Court Judges</b></li> <li>• President merely <b>approves CJI's choice</b></li> </ul>	<ul style="list-style-type: none"> <li>• Born from 'Three Judges Cases' which gave <b>primacy to CJI's call on A/Ts</b></li> <li>• Judiciary gets <b>greater say than Executive on A/Ts</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Administrative burden</b> of checking professional background data</li> <li>• Closed-door affair, <b>lacks transparency</b></li> <li>• <b>Exclusivity</b> sidelines talented junior judges, advocates</li> </ul>
<b>SOME OF THE CHANGES SOUGHT:</b>		
<ul style="list-style-type: none"> <li>• CJI cannot make <b>unilateral choice</b></li> <li>• Consulted <b>judges' views need to be in writing</b></li> <li>• <b>Non-compliance</b> must make CJI choice <b>non-binding</b></li> <li>• <b>Transfer of Judges</b> reviewable only in case of non-compliance</li> </ul>		

**Evolution of Collegium System in Judiciary**

- **First Judges Case (1981):** It declared that the “primacy” of CJI’s recommendation on judicial appointments and transfers can be refused for “cogent reasons.” The ruling gave the Executive primacy over the Judiciary in judicial appointments for the next 12 years.
- **Second Judges Case (1993):** Supreme Court introduced the Collegium system, holding that “consultation” really meant “concurrence”. It added that it was not the CJI’s individual opinion, but an institutional opinion formed in consultation with the two senior-most judges in the SC.
- **Third Judges Case (1998):** Supreme Court on President’s reference expanded the Collegium to a five-member body, comprising the CJI and four of his senior-most colleagues

**Tribunals Reforms (Rationalization and Conditions of Service) Act, 2021**

The Act replaces the Ordinance which was quashed by Supreme Court. It seeks to provide for uniform terms and conditions of the various members of the Tribunal and abolish certain tribunals, as a part of its bid to rationalize the tribunals.

- **Dissolution of Existing Bodies:** It seeks to dissolve certain appellate bodies (*Film Certification Appellate Tribunal, Intellectual Property Appellate Tribunal, Custom, Excise And Service Tax Appellate Tribunal, Airport Appellate Tribunal, National Highway Tribunal*) and transfer their functions to other existing judicial bodies. For example, the disputes heard by the Film Certification Appellate Tribunal will be addressed by the High Court.
- **Eligibility and Term of Office:** The Act provides for a *four-year term of office* (subject to the upper age limit of *70 years for the Chairperson, and 67 years for members*). Further, it specifies a minimum age requirement of 50 years for appointment of a chairperson or a member.
- **Search-cum-selection Committees:** The Chairperson and Members of the Tribunals will be appointed by central government on recommendation of a Search-cum-Selection Committee consisting of:
  - Chief Justice of India, or a Supreme Court Judge nominated by him, as the Chairperson (with casting vote).
  - Two Secretaries nominated by central governments.
  - The sitting or outgoing Chairperson, or a retired Supreme Court Judge, or a retired Chief Justice of a High Court, and
  - Secretary of the Ministry under which the Tribunal is constituted (with no voting right).

Tribunals were not part of the original constitution; it was incorporated in the Indian Constitution by **42<sup>nd</sup> Amendment Act, 1976**.

Article 323-A deals with Administrative Tribunals

Article 323-B deals with tribunals for other matters

**Foreigner’s Tribunals**

Assam Government’s Political Department has issued a notification ordering the State police’s Border wing not to forward any case against Gurkhas to **Foreigners’ Tribunals under Foreigners’ Act of 1946**.

- The Border wing is tasked with identifying people of doubtful citizenship and serving them notices for a Foreigners’ Tribunal.
- Foreigners’ Tribunals are quasi-judicial bodies established as per the **Foreigners’ Tribunal Order, 1964 and the Foreigners’ Act, 1946**.
- The Ministry of Home Affairs (MHA) has amended the Foreigners (Tribunals) Order, 1964, and has empowered **District Magistrates** in all States and Union Territories to set up tribunals to decide whether a person staying illegally in India is a foreigner or not.
- The amended order (Foreigners (Tribunal) Order, 2019) also empowers individuals to approach the Tribunals. Earlier, only the State administration could move the Tribunal against a suspect.

### Speedy Trial A Fundamental Right: Bombay HC

- In Bhima Koregaon caste violence case, highlighting the issue of undertrials, the Bombay High Court has said that “speedy trial is a fundamental right”.
- **Constitutional Right to Speedy Trial:** The main aim of the Right to Speedy trial is to inculcate Justice in the society. It was **first mentioned** in landmark document of English law - the **Magna Carta**. In India, it is **covered under Article 21** which declares that “no person shall be deprived of his life or personal liberty except according to the procedure laid by law.”

**Hussainara Khatoun v. State of Bihar, 1979**

• It formed the basis of the concept of Speedy Trial. It was held that where under trial prisoners have been in jail for **duration longer** than prescribed, if convicted, their detention in jail is totally unjustified and in violation to fundamental rights under **article 21**.

**Kartar Singh v. State of Punjab 1994**

• It was declared that the right to speedy trial is an **essential part of fundamental right to life and liberty**.

### FASTER System

Supreme Court has introduced a new “**Fast and Secured Transmission of Electronic Records**” (**FASTER**) system by which its crucial decisions, including orders on bail and stay of arrest, can be communicated **electronically** to prison authorities and investigating agencies through a secure channel.

#### Significance

- Ensure that **undertrials are not made to wait for days** to be released because the certified hard copies of their bail orders were late to reach the prison.
- Prevent **unnecessary arrests and custody**.
- It may even communicate a **stay on an execution ordered** by the final court on time.
- It will ensure effective implementation of Article 21 (right to life)

#### Other Initiatives

##### SUPACE (Supreme Court Portal for Assistance in Court’s Efficiency)

- It is Artificial Intelligence (AI) based portal that collects relevant facts and laws and makes them available to a judge.

##### E-Courts Project

- To transform the Indian Judiciary by ICT (Information and Communication Technology) enablement of Courts.
- It is a pan-India Project, monitored and funded by the Department of Justice, Ministry of Law and Justice, for the **District Courts** across the country

### Default Bail

- National Investigation Agency (NIA) has filed an appeal against Bombay High Court order, which granted statutory bail to lawyer-activist Sudha Bharadwaj. She was granted default bail in Bhima –Koregaon case by Mumbai High court.
- Bail is the conditional release of a person held under legal custody by undertaking promise to appear in the court as and when required.

#### Default Bail

- It is also known as statutory bail.

- Supreme Court Judgment: In **Bikramjit Singh case 2020**, the apex court observed that the accused gets an indefeasible right to 'default bail' if he makes an application after the maximum period for investigation of an offence is over, and before a charge sheet is filed.
- Right to default bail under Section 167(2) of CrPC is not merely a statutory right, but part of procedure established by law under Article 21.

**Time Period:** The issue of default bail arises where it is not possible for the police to complete an investigation in 24 hours, the police produce the suspect in court and seek orders for either police or judicial custody.

**For Ordinary Penal Law**

**Special Cases**

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>➤ For most offences, the police have <b>60 days</b> to complete the investigation and file a final report before the court.</li> <li>➤ However, where the offence attracts death sentence or life imprisonment, or a jail term of not less than 10 years, the period available is 90 days.</li> <li>➤ At the end of this 60-90 days period, if the investigation is not complete, the court shall release the person "if he is prepared to and does furnish bail".</li> </ul> | <ul style="list-style-type: none"> <li>➤ In <b>Unlawful Activities (Prevention) Act 1967</b>, the default limit is 90 days only that can be extended to another 90 days.</li> <li>➤ In the <b>Narcotic Drugs and Psychotropic Substances (NDPS) Act 1985</b>, the period is 180 days, which can be extended up to 1 year</li> </ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**National Legal Services Day 2021**

9<sup>th</sup> November - The day is observed to commemorate the enactment of **Legal Services Authorities Act** and to create awareness about the various provisions related to the act. It was first started by the Supreme Court of India in 1995

**What Does The Legal Services Authorities Act Entail**

- Enacted in 1987 to provide competent and **free legal aid** to people who belonged to **marginalized socio-economic communities** in the country.
- The Act also mentions the **setting up of Lok Adalats** for the settlement of disputes amicably.
- Free legal services are provided in matters before Civil, Criminal and Revenue Courts, Tribunals or any other authority exercising judicial or quasi judicial functions.
- **The Free Legal Services** include the following in legal proceedings:
  - ✓ Payment of court fee, process fees and all other charges payable or incurred
  - ✓ Providing service of lawyers;
  - ✓ Obtaining and supply of certified copies of orders and other documents.
  - ✓ Preparation of appeal, paper book including printing and translation of documents
- Act provides free legal aid to a person if any of the **following criteria** are met:
  - ✓ member of a **Scheduled Caste/ Scheduled Tribe**.
  - ✓ **woman, child, specially-abled or mentally challenged**.
  - ✓ **victim of human trafficking or beggar**.
  - ✓ **industrial workman**.
  - ✓ Have an **annual income of less than Rs 9,000** or any such amount laid down by the government.
  - ✓ A **victim of "a mass disaster, ethnic violence, caste atrocity"**, natural or industrial disaster.
  - ✓ In custody, juvenile home or protective custody or in a psychiatric nursing home or hospital.
- **National Legal Services Authority (NALSA)** will bear the costs of filing or defending the case, as well as provide the person with counsel at the expense of the state.
- **Chief Justice of India is the Patron-in-Chief** and the Senior most Hon'ble Judge, Supreme Court of India is the Executive Chairman of the Authority.

**Constitution Provisions**

- **Article 39A:** Provides for free legal aid to poor and weaker sections of the society and ensures justice for all.
- **Articles 14 and 22(1):** Make it obligatory for the State to ensure equality before law and a legal system which promotes justice on the basis of equal opportunity to all.

**Furlough Not Prisoners Right: SC**

- Reversing Gujarat High Court order granting relief to a convict, **SC discussed differences between 'furlough' and 'parole' and the principles relating to grant of them.**
- Furlough and parole (covered under The Prisons Act of 1894) **envisage a short-term temporary release from custody.** Both were introduced with a view to humanising the prison system.
  - ✓ While **parole is granted to the prisoner to meet a specific exigency, furlough may be granted** after a stipulated number of years have been served **without any reason.**
  - ✓ The grant of furlough is to break the monotony of imprisonment and to enable the convict to maintain continuity with family life and integration with society.
  - ✓ Period of furlough granted to a prisoner is **treated as remission of his sentence**, whereas parole is a system of releasing a prisoner with **suspension of the sentence.**
- SC stated that although furlough can be claimed without a reason, prisoner **does not have an absolute legal right** to claim furlough. Grant of furlough **must be balanced against public interest** and can be refused to certain categories of prisoners.
- Prisoners convicted of multiple murders or under the anti-terror Unlawful Activities Prevention Act (UAPA) **are not eligible for parole.**
- **Prisons Act of each state government (Prison is a state subject) defines the rules under which parole is granted** in that state.

**Deputy Speaker Lok Sabha**

- Delhi High Court asked Central government to explain its stand on a petition for keeping the post of Deputy Speaker of the Lok Sabha vacant.
- The petition claimed that it is a violation of **Article 93** of the Constitution. **Article 93** provides for election of both the **Speaker and the Deputy Speaker of Lok Sabha.** **Article 178** contains the corresponding position in **State Legislative Assembly.**

Advantage	Issue
<ul style="list-style-type: none"> <li>● Ensures continuity of Speaker’s office</li> <li>● Under <b>Article 95</b> - A Deputy Speaker enjoys the same legislative and administrative powers as the Speaker in absence of the Speaker because of death, illness, resignation or any other reason.</li> <li>● When a resolution for removal of the Speaker is up for discussion, Deputy Speaker presides over the proceedings of the House.</li> <li>● A Deputy Speaker is also ex-officio chairman of some committees by virtue of his position</li> </ul>	<ul style="list-style-type: none"> <li>● No specific timeline for Deputy Speaker’s appointment: Article 93 for Lok Sabha and Article 178 for state Assemblies state that these Houses <b>“shall, as soon as may be”</b> choose two of its members to be Speaker and Deputy Speaker.</li> <li>● It would be unrealistic to expect complete neutrality while functioning.</li> </ul>

- **Elected By:** The **Deputy Speaker is elected by the Lok Sabha** from amongst its members right after the election of the Speaker has taken place.
- The **date of election of Deputy Speaker is fixed by the Speaker** (date of election of Speaker is fixed by the President).
- **Term of Office and Removal**
  - ✓ Like the Speaker, Deputy Speaker remains in office usually during the life of Lok Sabha (5 years).
  - ✓ The Deputy Speaker may vacate his/her office earlier in any of the following three cases:

- If he ceases to be a member of the Lok Sabha.
- If he resigns by writing to the Speaker.
- If he is removed by a resolution passed by a majority of all the then members of Lok Sabha.

- ✓ Such a resolution can be moved only after giving **14 days' advance notice**
- The institutions of **Speaker and Deputy Speaker originated in India** in 1921 under the provisions of the **Government of India Act of 1919 (Montague-Chelmsford Reforms)**.
- **Deputy Speaker and Tenth Schedule (Exception):** Anti-defection law says that a person who has been elected Speaker/ Deputy Speaker shall not be disqualified if he, by reason of his election to that office, voluntarily gives up the membership of the political party to which he belonged immediately before such election. **And does not**, so long as he continues to hold such office thereafter, **rejoin that political party** or become a member of another political party.
- This **exemption applies to** Rajya Sabha Deputy Chairman, Chairman/ Deputy Chairman of a state Legislative Council, and Speaker/ Deputy Speaker of a state Legislative Assembly as well.

### 10 Schedule

Grounds for Disqualification	Exceptions under the Anti Defection Law
<ul style="list-style-type: none"> <li>● If an <b>elected member</b> voluntarily gives up his membership of a political party.</li> <li>● If he votes or abstains from voting in the House, contrary to any direction issued by his political party.</li> <li>● If any member who is <b>independently elected</b> joins any party.</li> <li>● If any <b>nominated member</b> joins any political party after the end of 6 months.</li> </ul>	<ul style="list-style-type: none"> <li>● Where 2/3<sup>rd</sup> of the legislators of a political party decide to merge into another party, neither the members who decide to join nor the ones who stay with the original party will face disqualification.</li> <li>● Any person elected as chairman or speaker can resign from his party, and rejoin the party if he demits that post.</li> <li>● Earlier, the law allowed parties to be split, but at present, this has been outlawed.</li> </ul>

Any question regarding disqualification arising out of defection is to be decided by the presiding officer of the House.

**Process To Arrest A Cabinet Minister In India**

Union Minister Narayan Rane was arrested over his statement on the Maharashtra Chief Minister.

**Procedure to Arrest A Cabinet Minister**

When Parliament Is Not In Session	When Parliament Is In Session
<ul style="list-style-type: none"> <li>• A cabinet minister can be arrested by a law enforcement agency in case of a criminal case registered against him.</li> <li>• As per Section 22 A of the Rules of Procedures and Conduct of Business of the Rajya Sabha, the Police, Judge or Magistrate would have to <u>intimate the Chairman of the Rajya Sabha</u> about the reason for the arrest, the place of detention or imprisonment in an appropriate form.</li> <li>• The Chairman is expected to inform the Council if it is sitting about the arrest. If the council is not sitting, he/she is expected to publish it in the bulletin for the information of the members.</li> </ul>	<ul style="list-style-type: none"> <li>• Members of both the houses of Parliament enjoy some immunity from arrests when Parliament is in session.</li> <li>• Under Section 135 of the Civil Procedural Code, in civil cases, they have freedom from arrest during continuance of the House and <u>40 days before its commencement and 40 days after its conclusion.</u></li> <li>• The privilege of freedom from arrest <u>does not extend to criminal offences or cases of detention under preventive detention.</u></li> </ul>

**Suspension Of MPs For Disorderly Conduct**

Six Trinamool Congress MPs were ordered to leave Rajya Sabha for rest of the day by Rajya Sabha Chairman over “grossly disorderly” conduct.

**Rule 255 of General Rules of Procedure of the Rajya Sabha**

•The Chairman may direct any member, whose conduct is in his opinion grossly disorderly, to withdraw immediately from the Council and any member so ordered to withdraw shall do so forthwith and shall absent himself during the remainder of the day’s meeting.

- Lok Sabha Speaker and Chairman of Rajya Sabha is empowered to “direct any Member whose conduct is in his opinion grossly disorderly to withdraw immediately” from the House.
- The Rajya Sabha Chairman does not have the **power to suspend a member** but **Speaker of LS can.**

**Governor’s Power to Pardon Overrides Section 433A: SC**

- The Supreme Court held that the Governor’s power to pardon overrides Section 433A of Code of Criminal Procedure (CrPC).
- **Section 433A:** It states that where a sentence of imprisonment for life is imposed for an offence for which
  - i) Death is one of the punishments provided by law, or
  - ii) Where a sentence of death has been commuted under section **433 into imprisonment for life.**
 Then, such person shall not be released from prison unless he had served **at least fourteen years of imprisonment.**
- However Section 433-A cannot and does not in any way affect the constitutional power conferred on the President/Governor to grant pardon under **Articles 72 or 161** of the Constitution. SC held that the Governor of a State can pardon prisoners, even before they have served a minimum 14 years of prison sentence.
- The court noted that the sovereign power of a Governor to pardon a prisoner under **Article 161** is actually exercised by the State government and not the Governor on his own since the advice of the appropriate government binds the Head of the State.

## Governor's Pardoning Power

Article  
161

- The Governor of a State shall have the power to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence against any law relating to a matter to which the executive power of the State extends.

The scope of the **pardoning power of the President under Article 72** is wider than the pardoning power of the Governor under Article 161 in a way that President's pardoning power extends to cases where the punishment or sentence is by a **Court Martial** or in all cases where the sentence given is the **sentence of death**.

## Who is a Whip

Two members of the opposition party have been selected as whips in the Upper House.

- A whip is a political party official whose job it is to **maintain party discipline in the legislature** and it also ensures that party members vote in accordance with the **party platform** rather than their **own personal ideologies or the wishes** of their funders or constituency.
- Members who vote against party policy risk "losing the whip," which effectively expels them from the organization.
- If a legislator disobeys the party whip, she or he may face **disqualification under anti defection law** unless the number of parliamentarians opposing the whip is **2/3<sup>rd</sup>** of the party's strength in the house.

## Different Types Of Whip

## One-line whip

- It is used to notify members of a political party about a vote. It permits a member to *vote no if they do not agree* with the party position

## Two-line whip

- It is used to tell members that they *must be present in the House* when voting takes place.

## Three-line whip

- Members are given a three-line whip instructing them to *vote in accordance with the party line*.

India inherited the concept of the whip from the British parliamentary system.

**Constitutional status:** The office of 'whip' is mentioned neither in the Constitution of India nor in the Rules of the House nor in a Parliamentary Statute. It is based on the conventions of the parliamentary government.

**Non-applicability of Whip:** There are some cases such as **Presidential elections** where whips cannot direct a MP or MLA on whom to vote.

## Shiromani Akali Dal (SAD) Has Decided To Move An Adjournment Motion

- Against the Union government on the three controversial farm laws.
- Adjournment motion is **introduced only in the Lok Sabha** to draw the attention of the House to a **definite matter of urgent public importance**. It involves an element of censure against the government, therefore Rajya Sabha is not permitted to make use of this device.
- It is regarded as an **extraordinary device** as it interrupts the normal business of the House. It needs the support of **50 members** to be admitted. The **discussion** on this motion should last for **not less than two hours and thirty minutes**.

## Privilege Motion

- Congress' chief whip in the **Rajya Sabha** sought to move a privilege motion **against the Union Culture Minister over the appointment of chairperson of the National Monuments Authority (NMA)**.

- The educational and professional background of the current chairperson of NMA does not meet the requirements of law passed by Parliament in March 2010.

### **National Monuments Authority**

- It is set up under the **Ministry of Culture** as per the provisions of **Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act (AMASR)** which was enacted in March, 2010.
- **Qualifications for the Appointment of the Chairman:** AMASR Act says that the chairperson of the NMA should have “proven experience and expertise in the field of archaeology, country and town planning, architecture, heritage, conservation architecture or law”.

### **Parliamentary Privileges**

- Parliamentary privileges are **special rights, immunities and exemptions enjoyed** individually and collectively, **by the two Houses of Parliament, their committees and their members.**
- The Constitution also extends the parliamentary privileges to those persons who are entitled to speak and take part in the proceedings of a House of Parliament or any of its committees. **These include the Attorney General of India and Union ministers.**
- The parliamentary privileges **do not extend to the President** who is also an integral part of the Parliament. **Article 361** of the Constitution provides for privileges for the President.
- **Article 105** of the Constitution expressly mentions **two privileges**, that is, freedom of speech in Parliament and right of publication of its proceedings.
- Apart from the privileges as specified in the Constitution, **the Code of Civil Procedure, 1908**, provides for freedom from arrest and detention of members under civil process during the continuance of the meeting of the House or of a committee thereof and forty days before its commencement and forty days after its conclusion.
- It needs to be noted that the **Parliament, till now, has not made any special law** to exhaustively codify all the privileges.

### **Privilege Committee**

- It is a **Standing Committee**. It examines the cases of breach of the privileges of the House and its members and recommends appropriate action.
- The **Lok Sabha** committee has **15** members, while the **Rajya Sabha** committee has **10 members**.

### **Privilege Motion**

- It is moved by a member when he feels that a minister has committed a breach of privilege of the House or one or more of its members by withholding facts of a case or by giving wrong or distorted facts. Its purpose is **to censure the concerned minister.**
- It can be moved in **Rajya Sabha as well as Lok Sabha.**

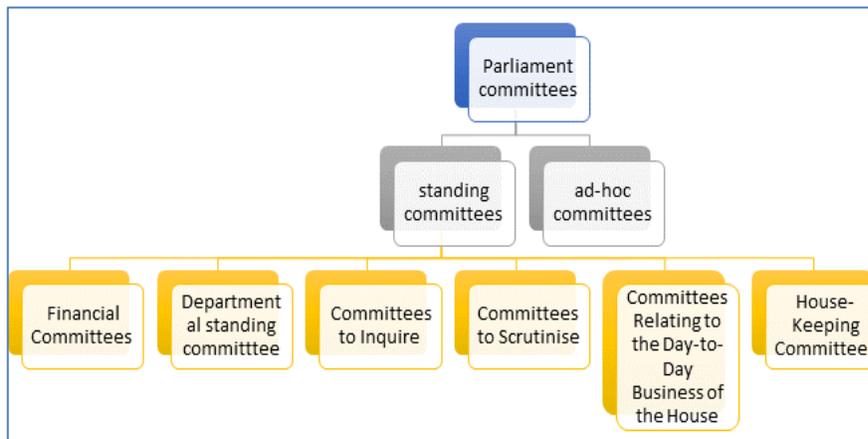
### **Role of the Speaker/Rajya Sabha (RS) Chairperson**

- The Speaker/ chairperson is the first level of scrutiny of a privilege motion.
- The Speaker/Chairperson can decide on the privilege motion himself or herself or refer it to the privileges committee of the Parliament.

### **100 Years Of PAC**

Public account committee (PAC) is working since 100 years on strengthening of systems and promoting good governance ensuring citizens right to due process and value for tax-payers money.

- PAC is one of the three financial parliamentary committees. The other two are the Estimates Committee and the Committee on Public Undertakings.
- Parliamentary committee draws their authority from **Article 105** (privileges of Parliament members) and **Article 118** (Parliament's authority to make rules for regulating its procedure and conduct of business)



### Public Account Committee

1. It was introduced in 1921.
2. It was first mentioned in **Government of India Act, 1919 (Montford Reforms)**.
3. It is now constituted every year under section 308 of the Rules of Procedure and Conduct of Business in Lok Sabha.
4. Not being an executive body, it can only make decisions that are **advisory** by nature.
5. Chairman of the committee is appointed by the **speaker of Lok Sabha**. It presently comprises of **22 members** (15 from Lok Sabha and 7 from Rajya Sabha).
6. The members of the committee are elected annually by the Parliament from amongst its members by the principle of **Proportional Representation (PR)** by means of **Single Transferable Vote (STV)**. This election method gives equal representation to all the members of the Parliament. Members are eligible for reappointment.
7. PAC restricts any Minister from being elected as a member of it.

### Functions of Public account committee

1. It examines the **appropriation account of the annual financial statement (budget)**
  - ✓ Such other accounts laid before the House as the Committee may think fit **except those relating to Public Undertakings** which are allotted to the Committee on Public Undertakings.
2. Committee examines the various **audit reports of Comptroller and Auditor General** of India on **revenue receipts expenditure** by various ministries/ department of Government and **account of autonomous bodies**.
3. To examine the **money spent** on any service during financial year **in excess of the amount granted by the Lok Sabha** for the purpose.

### Delimitation Exercise in J&K- A Timeline

- The Jammu and Kashmir Delimitation Commission has said that it will base its final report on the 2011 Census and will also take into account the topography, difficult terrain, means of communication and convenience available for the ongoing delimitation exercise.
- The first delimitation exercise, carving out 25 assembly constituencies in the then state, was carried out by a Delimitation Committee in **1951**.
- The first full-fledged Delimitation Commission was formed in 1981 and it submitted its recommendations in 1995 on the basis of 1981 Census. Since then, there has been no delimitation.

- In March 2020, the Delimitation Commission was constituted to carry out the exercise on the basis of 2011 Census, with a mandate to add seven more seats to the Union Territory' and grant reservations to SC and ST communities.
- Now, the total number of seats in Jammu and Kashmir will be raised to 90 from 83. This is apart from 24 seats which have been reserved for areas of PoK and have to be kept vacant in the Assembly.

- The Delimitation Commission is appointed by the **President**
- Delimitation Commission orders have the force of law and they **cannot be challenged** before any court.
- **Constitutional Provisions:** Under **Article 82**, the Parliament enacts a Delimitation Act *after every Census*. Further, under **Article 107**, States also get divided into territorial constituencies as per Delimitation Act after every Census.
- Delimitation Commissions have been set up 4 times — **1952, 1963, 1973 and 2002**. There was no delimitation after 1981 and 1991 Censuses.
- According to the **Delimitation Commission Act, 2002**, the Delimitation Commission will have three members:
  - **serving or retired judge of Supreme Court as the chairperson,**
  - Chief Election Commissioner or Election Commissioner nominated by the CEC
  - State Election Commissioner as ex-officio members.

### Ranked-choice Voting for New-York Mayoral Polls

- The method allows voters to **rank candidates** by preference rather than selecting just their top choice. New York City is having voters rank their top five — though voters are not required to choose five.
- If someone gets 50% plus one after all the first-choice votes are counted, then the election is over and that candidate wins.
- But if no one gets 50% plus one, it's on to **Round 2**. The person with the lowest number of first-place votes is eliminated, and that candidate's voters' second choices get redistributed as votes for other candidates. This reallocation of votes goes on until someone reaches 50% plus one.
- It has also been used by **Australia, Ireland and Malta** since the early 20th century. **Northern Ireland, New Zealand and Scotland** have all adopted it as well.
- Single transferable vote (STV) is a type of ranked preferential electoral system which uses multiple-member constituencies where each voter casts a single ballot where they rank candidates

### Electoral Trusts Scheme, 2013

- **Paribartan Electoral Trust** has anonymously disbursed Rs 3 crore it received from Birla Corporation in 2019-20 using electoral bonds. This is the **first time that an electoral trust (under Electoral Trusts Scheme, 2013) has taken the bonds route** to disburse corporate donations to unnamed political parties.
- Electoral Trust is a **non-profit organization** formed in India for orderly receiving of the contributions from any person. The scheme was notified by the Central Board of Direct Taxes (CBDT).
- The sole object of the electoral trust is to distribute the contributions received by it to the political party, registered under **section 29A of the Representation of the People Act, 1951**.
- These Electoral Trust companies are **not allowed to accept contributions from foreign citizens or companies** or from Government company as defined in section 2 of the Companies Act, 2013.
- An electoral trust can accept contributions only by **cheque, demand draft or account transfer** to the bank.
- The trust shall also **maintain a list of persons** from whom contributions have been received and to whom the same have been distributed.

### **Electoral Bonds**

Announced in the 2017 Union Budget, electoral bonds are **interest-free bearer instruments** used to donate money **anonymously to political parties**. A bearer instrument does not carry any information about the buyer or payee and the holder of the instrument (which is the political party) is presumed to be its owner.

- The bonds are sold in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore, and the State Bank of India (SBI) is the only bank authorised to sell them.
- Only those parties, which have got 1% of all votes polled in the last Lok Sabha or state assembly polls, are eligible for funding through these bonds.
- Donors can purchase and subsequently donate the bonds to their party of choice, which the party can then encash through its verified account within 15 days. There is no limit on the number of bonds an individual or company can purchase. SBI deposits bonds that a political party hasn't encashed within 15 days into the Prime Minister's Relief Fund.

### **Election Amendment Bill 2021**

Election laws (amendment) Bill, 2021 was passed in the Lok Sabha. It provides for amendment of **section 23 and section 14** of the Representation of People's Act 1950 and **section 20** of Representation of People's Act 1951.

#### **Key Feature Of The Bill**

1. It seeks to link **electoral roll data and voter ID cards with the Aadhar ecosystem**.
2. January 1<sup>st</sup> as qualifying date is changed to **four qualifying date** i.e. 1<sup>st</sup> of January, April, July and October. Earlier anyone who turn 18 after January 1<sup>st</sup> was eligible for voting only after a year.
3. The language for registration of **wives of service voters** will now be replaced by **spouse**. Thus, making it gender neutral. Service voters are those serving in armed forces, armed police forces of a state serving outside it and government employees posted outside India.
4. Election laws (Amendment) act seeks to allow the electoral registration officers to ask for Aadhar for authentication of entries in the electoral role.

### **1st Audit Diwas: CAG**

- The Prime Minister **unveiled the statue of Sardar Vallabhbhai Patel** at the office of the **Comptroller and Auditor General (CAG)** of India to mark the **First Audit Diwas (16th November 2021)**.
- **Article 148** provides for an independent office of the CAG. It is the **supreme audit institution of India**.
- **Other Provisions** related to CAG include **Articles 149-151** (Duties & Powers, Form of Accounts of the Union and the States and Audit Reports), **Article 279** (calculation of net proceeds, etc.) and **Third Schedule** (Oath or Affirmation) and **Sixth Schedule** (Administration of Tribal Areas in the States of Assam, Meghalaya, Tripura and Mizoram).
- **Appointment:** Appointed by the **President of India** by a warrant under his hand and seal.
- **Tenure:** A period of **six years** or upto the age of **65 years**, whichever is earlier.
- **Removal:** CAG can be removed by the President on the **same grounds and in the same manner as a judge of the Supreme Court**. He **does not hold his office till the pleasure of the President**.
  - ✓ In other words, he can be removed by the President on the basis of a **resolution** passed to that effect by both the **Houses of Parliament with special majority**, either on the ground of **proved misbehaviour or incapacity**.

**• Functions of CAG:**

- ✓ Head of **Indian Audit and Accounts Department** - created in 1753.
- ✓ **Guardian of the public purse** and controls the entire **financial system** of the country at both the levels—**the Centre and the state**.
- ✓ The **accountability of the executive (i.e. Council of Ministers)** to the Parliament in the sphere of **financial administration** is secured through audit reports of the CAG.

**CBI And Enforcement Directorate Chiefs Can Hold Office Upto 5 Years**

- In November, President promulgated two ordinances that **would allow Centre to extend the tenures** of directors of Central Bureau of Investigation (CBI) and ED **from two years to up to five years**.
- Government **amended the Delhi Special Police Establishment Act, 1946** (For CBI Director) and **Central Vigilance Commission Act, 2003** (For ED director).
- Now CBI director position can be extended for **every one year till five years** of continuous service.

**About CBI**

- The CBI was established as the Special Police Establishment in 1941, to investigate cases of corruption in the procurement during the Second World War.
- Later, the **Santhanam Committee** on Prevention of Corruption recommended the establishment of the CBI. The CBI was then formed by a resolution of Home Affairs Ministry. The **Ministry of Personnel**, later on, took over the responsibility of the CBI and now it plays the role of an attached office.
- It is **not a statutory body**; it derives its powers from DSPE, 1946.
- It functions under the superintendence of the Dept. of Personnel, Ministry of Personnel, Pension & Public Grievances, Government of India - which falls under the prime minister's office. However, for investigations of offences under the Prevention of Corruption Act, its superintendence vests with the Central Vigilance Commission.
- It is also the nodal police agency in India which coordinates investigation on behalf of Interpol Member countries.
- CBI has jurisdiction to investigate offences pertaining to 69 laws, 18 state acts and 231 offences in IPC.
- At present, CBI has the following divisions: Anti-Corruption Division, Economic Offences Division, Special Crimes Division, Policy and International Police Cooperation Division, Administration Division, Directorate of Prosecution, and Central Forensic Science Laboratory.
- The CBI is headed by a Director. In 2014, the Lokpal Act provided a committee for appointment of Director. The committee comprises of **Prime minister as chairperson**, the Chief Justice of India and leader of opposition in the Lok Sabha or leader of the single largest opposition party in the Lok Sabha when there is no recognized leader of opposition in the Lok Sabha.
- **State government consent:** CBI has to take mandatory consent from the state to investigate against corruption cases of central government employ in the state. If state withdraws the general consent, CBI needs to take consent on case-to-case basis. Currently **eight states** have withdrawn the general consent

**Suo moto Powers of NGT**

- Recently, National Green Tribunal (NGT) took Suo motu cognizance of the Vizag Gas Leak. The Respondent Company, LG Polymers appealed before the Supreme Court (SC) challenging the exercise of Suo motu powers by the NGT.

- Court ruled that the NGT, which safeguards the right to life under **Article 21** of the Constitution, even in the absence of an application, can **self-ignite action** either towards amelioration or towards prevention of harm.
- At the same time, it clarified that NGT's Suo motu jurisdiction would be subject to the **principles of natural justice and fair play**.

#### About NGT

- It was set up under the National Green Tribunal Act (2010). India became the 3<sup>rd</sup> country to set up a specialised environmental tribunal, after Australia & New Zealand
- It has got **original as well as appellate jurisdiction** on matters relating to water, air, forest conservation, environment protection and biological diversity. (i.e., on all civil matters).
- New Delhi is the Principal Place of Sitting of the Tribunal and *Bhopal, Pune, Kolkata and Chennai* are other 4 place of sitting of the Tribunal.
- The Tribunal is headed by **a sitting or retired Supreme Court judge or the Chief Justice of a High Court**.
- The chairperson is appointed by the **Government with the consultation of CJI**. The maximum age of chairperson will be *70 years if he is from SC and 67 years if he is from HC*. He can be removed by central government after an inquiry made by a judge of Supreme Court.
- Anybody can approach the NGT. It can be **any individual, media organisation or NGO**.
- It is mandated to make disposal of applications or appeals finally within **6 months** of filing the same.
- Its decisions are subjected to **judicial review**. The Tribunal has powers to review its own decisions. If this fails, the decision can be challenged before the Supreme Court within **90 days**.

#### Whistle Blower Portal

- Indian Renewable Energy Development Agency (IREDA), launched a 'whistle-blower Portal', as a part of 'Vigilance Awareness Week 2021'.
- *IREDA is a Mini Ratna (Category – I) Government of India Enterprise.*

#### Vigilance Awareness Week

- It is celebrated every year in the birthday week of Sardar Vallabhbhai Patel (Bismark of India). It is observed by the Central Vigilance Commission.
- National Unity Day (Rashtriya Ekta Diwas) is celebrated on 31st October every year to mark the birth anniversary of Sardar Vallabhbhai Patel.
- Through this portal, IREDA employees can raise concerns related to fraud, corruption, abuse of power etc.

#### What Is Whistle Blowing

- According to the **Companies Act, 2013**, whistleblowing is an action aimed at drawing the attention of stakeholders to instances of unethical practices in an **organization**.
- RTI Act 2005 is a 'twin sister' of whistleblowing.

#### Key Features Of Whistleblower Protection Act, 2014

- It enables **any person** (i.e. a whistleblower) to report an act of corruption, willful misuse of power or discretion, or criminal offence by a **public servant**. This includes all public servants, including *Ministers, Members of Parliament, the lower judiciary* etc.
  - ✓ The definition goes beyond government officials and includes **any other person or NGO**.
  - ✓ The act is **not applicable to SPG personnel and officers**, constituted under the Special Protection Group Act, 1988.
  - ✓ Disclosures can be made in **writing or by email message** and contain full particulars and be

accompanied by supporting documents, or other material.

- The Act specifies the **Competent Authority** for each category of public servant. For example, it would be the Prime Minister for a Union Minister; Speaker/ Chairman for Members of Parliament; the Chief Justice of the High Court for district court judges etc.
- Any person aggrieved by any order of the Competent Authority can make an appeal to the **concerned High Court** within a period of **sixty days** from the date of the order.
- The law **does not allow anonymous complaints** to be made and clearly states that no action will be taken by a competent authority if the complainant does not establish his/her identity. The **maximum time period for making a complaint is seven years**.
- Any person who negligently or mala-fidely reveals the **identity of a complainant** will be punishable with imprisonment for a term extending up to 3 years and a fine which may extend up to Rs 50,000.
- If the disclosure is done mala-fidely and knowingly that it was incorrect or false or misleading, the person will be punishable with imprisonment for a term extending up to 2 years and a fine extending up to Rs. 30,000.
- Disclosures can be made under the Act **even if they are prohibited under the Official Secrets Act, 1923**.
- Once a whistleblowing complaint is admitted, and is being inquired into, no person is required to provide any information if it falls under **five categories**. These categories include:



### Bribery Risk Matrix 2021

- **India has slipped to 82nd position** in 2021, five places down from 77th rank last year, in a global list that measures business bribery risks.
- This score is based on **four factors**:
  - **Business interactions with the government**
  - **Anti-bribery deterrence and enforcement**
  - **Government and civil service transparency**
  - **Capacity for civil society oversight which includes the role of the media**
- North Korea, Turkmenistan, Venezuela and Eritrea pose the highest commercial bribery risk, while Denmark, Norway, Finland, Sweden etc. present the lowest.

### Global State Of Democracy (GSOD) Report

- International Institute for Democracy and Electoral Assistance (**International IDEA**) released GSoD.
- The GSoD 2021 report assesses 165 countries on 116 indicators spread across five identified core attributes of democracy: **Representative government, Fundamental rights, Checks on Government, Impartial administration, and Participatory engagement**
- The report noted that the number of countries moving towards authoritarianism in 2020 was higher than that of countries going in the other direction, i.e., towards democracy.
- India is described as **“backsliding democracy”** with the most democratic violations during the pandemic.
- **International IDEA** is a Stockholm based intergovernmental think-tank that works to boost democracy globally.
- *Founded in 1995, it has 34 member states. India is one of the founding members of this organisation.*

- Former Chief Election Commissioner Sunil Arora has been invited to join the board of advisers at the International IDEA.

### Integrated Command and Control Centres (ICCCs)

The Ministry of Housing and Urban Affairs (MoHUA) has begun work to finalize its recommendation for providing ICCCs as a service to states and smaller cities.

#### What is ICCC?

- ICCCs equip cities to **do more with less** by *graduating to real time data driven decision making* with better situational awareness in an integrated manner.
- ICCCs, designed to enable authorities to **monitor the status of various amenities** in real time, were initially aimed at controlling and monitoring water and power supply, sanitation, traffic movement, integrated building management, city connectivity etc.
- **Linked to CCTNS** (Crime and Criminal Tracking Networks and Systems) network under the Ministry of Home Affairs (MHA).
- **Now, they are being used to tackle the coronavirus pandemic.**
- Implement a pilot project across **six major states** — Uttar Pradesh, Maharashtra, Karnataka, Madhya Pradesh, Rajasthan and Tamil Nadu.
- The **Smart Cities project**, which aims at developing **100 citizen-friendly and self-sustainable urban settlements**, includes setting up ICCCs for each city as a vital step.

#### Smart City Mission

- It is an innovative initiative under the **Ministry of Housing and Urban Affairs**.
- **Objective:** To promote cities that **provide core infrastructure** and give a decent quality of life to its citizens, a clean and sustainable environment and application of Smart Solutions.
- **Focus:** On **sustainable and inclusive development** and to look at compact areas, create a replicable model which will act like a lighthouse to other aspiring cities.
- **Strategy:** Develop areas step-by-step with the help of these three models - **Retrofitting, Redevelopment, Greenfield**.
- **Coverage and Duration:** The Mission covers 100 cities for the duration of **five years** starting from the financial year (FY) 2015-16 to 2019-20.
- **Financing:** It is a **Centrally Sponsored Scheme**.

### PM's 60 Point Action Plan

Centre has prepared a comprehensive **60-point action plan**. The action plan is targeted at specific ministries and departments, but a closer analysis suggests they fall under broadly **three buckets**:

**Improving Business Climate**

- Doing away completely with certain permissions, reducing cost of starting a business in 10 sectors and bring it on a par with **Vietnam and Indonesia**, automatic notification of clearances, single-point access to all government services, incentives to states for timely land acquisition and forest clearances, **one comprehensive Environment Management Act** that subsumes various laws in the sector, **mentoring platform for start-ups** and skilling programmes for emerging sectors.
- Using Geographic Information System (**GIS mapping**) for decision making to increase the country's GDP
- Pushing for jobs while negotiating **trade pacts**
- Mostly directed at Department for Promotion of Industry and Internal Trade, Ministry of Environment, Forest, and Climate Change, and the Niti Aayog

**Leveraging IT and Technology for Governance**

- Several actionable inputs for Ministry of Electronics and Information
- Technology from streamlining **disbursement of scholarships** to bridging **digital divide** for underprivileged students by developing **indigenous tablets and laptops**.
- Digitizing all land records by 2023 under the central database called '**Matribhumi.**' Integration with e-Courts system will provide transparency on title/possession related issues.
- **Citizenship may be linked to birth certificates** through technology and mainstreamed.
- Appointment of **more Chief Information Officers (CIOs) and Chief Technology Officers (CTOs)**. All government data should be made accessible to all ministries

**Upgrading the Civil Services**

- On capacity building – training of officers on various aspects of **infrastructure** in both the Centre and states
- Infusion of expertise and exposure to latest technologies for higher civil services
- **Performance-based working**, clear and specific **targets** for ministries and departments just like that for public sector undertakings
- Institutional mechanisms for addressing issues of states given their limited capacities and restructuring of departments through **government process re-engineering every 10 years**.

**SAKSHAM**

- As part of **Azadi ka Amrit Mahotsav**, a total of 152 **Centre for Financial Literacy & Service Delivery (SAKSHAM Centres)** across 77 districts of 13 states were launched.
- The centres were launched under **Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM)** of the **Ministry of Rural Development**.
- SAKSHAM Centres would act as a **one stop solution/single window system** for basic financial needs of **SHGs** households in rural areas.
- **Objective:** To provide financial literacy & facilitate delivery of financial services (savings, credit, insurance, pensions etc.) to SHG members and rural poor.
- Managed by SHG network, largely at the level of the Cluster Level Federations (CLFs), with the help of trained Community Resource Persons (CRPs).

- **SAKSHAM Application:** A mobile & web-based application called “SAKSHAM” has also been developed. It will be used by the **CRP of the Centre** to know the penetration of various financial services for each SHG & village, identify major gaps and accordingly provide training and deliver the required financial services.

#### **DAY-NRLM**

- It is a centrally sponsored programme, launched by the **Ministry of Rural Development** in June 2011.
- Aim: To eliminate rural poverty through the promotion of multiple livelihoods and improved access to financial services for the rural poor households across the country.

#### **Sub-Schemes**

- **SVEP and AGEY:** As part of its *non-farm livelihoods strategy*, DAY-NRLM is implementing Start-Up Village Entrepreneurship Programme (SVEP) and Aajeevika Grameen Express Yojana (AGEY).
  - ✓ **SVEP** aims to support entrepreneurs in rural areas to set up local enterprises.
  - ✓ **AGEY:** To provide safe, affordable and community monitored rural transport services to connect remote rural villages.
- **Deendayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY):** Aims at building placement-linked skills of the rural youth and placing them in relatively higher wage employment sectors of the economy.
- **MKSP:** In order to promote agro-ecological practices that increase women farmers’ income and reduce their input costs and risks, the Mission has been implementing the Mahila Kisan Shashaktikaran Pariyojana (MKSP).
- **Rural Self Employment Institutes (RSETIs):** In partnership with 31 Banks and State Governments, it is supporting RSETIs for skilling rural youth to take up gainful self-employment.

#### **National Achievement Survey 2021**

- It is a nationwide survey, conducted by CBSE, **to assess the learning outcomes and health of the education system.**
- It is undertaken by **Ministry of Education.**
- The **NCERT** designed an assessment framework and tools for NAS-2021.

#### **Education In India**

- **Part IV of Indian Constitution, Article 45 and Article 39 (f) of Directive Principles of State Policy (DPSP)** has a provision for state-funded as well as equitable and accessible education.
- The **42nd Amendment** to Constitution in 1976 moved education from the State to the **Concurrent List.**
- The **86th Amendment in 2002** made education an enforceable right under **Article 21-A.**

#### **SDG Urban Index: NITI Aayog**

- **NITI Aayog** under **Indo-German Co-operation** released the inaugural **Sustainable Development Goals (SDGs) Urban Index and Dashboard 2021-22.**
- **Performance of the States:**
  - ✓ **Top Performers:** Shimla, Coimbatore, Chandigarh, Thiruvananthapuram and Kochi.
  - ✓ **Worst Performers:** Dhanbad, Meerut, Itanagar, Guwahati and Patna.
- In this index, the cities are divided into 4 categories – (I) Achiever (100 marks), (II) Front runner (65-99 marks), (III) Performer (50-64 marks) and (IV) Aspirant (0-49 points).

**Jharkhand Passed The Prevention Of Mob Violence And Mob Lynching Bill 2021**

Jharkhand passed the prevention of Mob violence and Mob lynching Bill. Jharkhand will become the **fourth state** to bring law against mob violence. The first three states are **West Bengal, Rajasthan, and Manipur**.

**Key Point Of The Act**

1. The Act provides punishment for varying jail terms ranging from three years to life imprisonment and monetary fine up to Rupees 25 lakh against those involved in mob lynching.
2. The Act aims to put in place a top to the bottom mechanism, with inspector General Rank Police officers to be appointed as nodal officers in different areas.
3. The act also seeks to punish those responsible for irresponsibly sharing information.

**Law Against Mob Lynching**

- IPC and CRPC do not have a separate definition for such incidence. However, it is nowhere mentioned in law of the land and is hence simply put as murder since it has not been yet incorporated under the IPC. These incidences are dealt with under sections 300 and 302 of IPC.
- In July 2017, the Supreme Court in **Tahseen s. Poonawala v. UOI** had laid down several preventive, remedial and punitive measures to deal with lynching and mob violence.
- **Designated Fast Track Courts:** States were directed to set up designated fast track courts in every district to exclusively deal with cases involving mob lynchings.
- **Special Task Force:** The court had also mooted the setting up of a special task force with the objective of procuring intelligence reports about the people involved in spreading hate speeches, provocative statements and fake news which could lead to mob lynchings.

**“Super Censorship” Clause Introduced In Draft Cinematograph (Amendment) Bill 2021**

- In the draft, there is a provision which allows the **government to order recertification** for a film already certified by the Central Board of Film Certification (CBFC)- a kind of ‘super censorship’. The government says the clause would only be invoked if the content of a film impinged on **security and integrity of the nation**.
- A **Supreme Court order passed in 2000** says that the government could not exercise revisional powers on films already certified by the CBFC.
- The government cites the **“reasonable restrictions”** placed by the constitution in **Article 19** of the constitution to justify exercising its powers to act as a super-censor for films about which it receives complaints – even if the CBFC finds those film do not trigger those restrictions.

**Key Provisions In Draft Bill**

**Age-based certification:** It seeks to introduce age-based categorisation and classification. It proposes to divide the existing categories (U, U/A and A) into further age-based groups: U/A 7+, U/A 13+ and U/A 16+.

**Provision against piracy:** At present, there are no enabling provisions to check film piracy. Violation shall be punishable with imprisonment and fine.

**Eternal certificate:** It proposes to certify films for perpetuity. Currently a certificate issued by the CBFC is valid only for 10 years.

**Draft Anti-trafficking Bill**

The Ministry of Women and Child Welfare has invited suggestions and comments for its **Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2021**.

- It extends to all citizens **inside as well as outside India**.
- It extends beyond the protection of women and children as victims to now include **transgenders** as well as any person who may be a victim of trafficking.
- It also does away with the provision that a victim necessarily needs to be transported from one place to another to be defined as a victim.

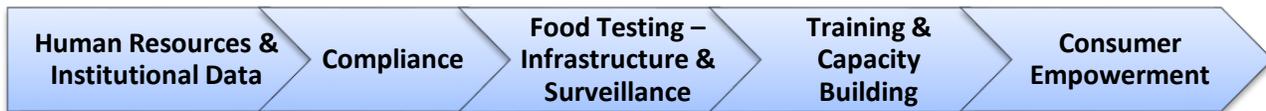
<b>KEY FEATURES</b>	
<ul style="list-style-type: none"> <li>➤ <b>The Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2021 proposes that any person committing an offence of “trafficking in persons” shall be punished with imprisonment not less than seven years but which may extend to ten years and shall also be liable to a fine of at least one lakh rupees</b></li> <li>➤ <b>NIA shall act as the</b></li> </ul>	<p><b>national investigating and coordinating agency</b> responsible for prevention and combating of trafficking in persons</p> <ul style="list-style-type: none"> <li>➤ <b>A national anti-human trafficking committee will be formed</b> for ensuring overall effective implementation of the provisions of this law</li> <li>➤ <b>State and district level anti-human trafficking committees</b> will also be constituted</li> </ul>

**Provisions Related to Trafficking**

- Trafficking in Human Beings or Persons is prohibited under the Constitution of India under **Article 23 (1)**.
- The **Immoral Traffic (Prevention) Act, 1956 (ITPA)** is the premier legislation for prevention of trafficking for commercial sexual exploitation.
- **Criminal Law (amendment) Act 2013** has come into force wherein **Section 370** of the Indian Penal Code has been substituted with **Section 370 and 370A IPC** which provide for comprehensive measures to counter the menace of human trafficking.
- **Sections 366(A) and 372** of the IPC, prohibits kidnapping and selling minors into prostitution respectively.

**3<sup>rd</sup> State Food Security Index**

Union Minister for Health and Family Welfare released FSSAI’s **3rd State Food Safety Index (SFSI)** to measure the **performance of States (qualitative & quantitative)** across **five parameters** of food safety. The parameters include:



First State Food Safety Index was announced on the first-ever World Food Safety Day on 7th June 2019.

**Rankings**

- **Among larger states:** Gujarat was the top-ranking state, followed by Kerala and Tamil Nadu.
- **Among smaller states:** Goa stood first followed by Meghalaya and Manipur.
- **Among UTs:** Jammu & Kashmir, Andaman & Nicobar Islands and New Delhi secured top ranks.

**NCPCR Recommended Minority Schools Be Brought Under RTE**

The Constitution of India does not specify the term ‘minorities’, however, the Constitution recognizes **only religious and linguistic minorities**.

- **Article 30** of the Indian Constitution states - “All minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.”
  - This article has been used to bypass RTE and keep minority schools outside the purview of RTE Act. Further, in 2014, the **SC in Pramati Judgment** made the whole RTE Act inapplicable to minority schools.
- **86th Amendment, 2002** to the Constitution provided the RTE as a fundamental right. The same amendment inserted **Article 21A**, which made the RTE a fundamental right for children aged between **6 and 14 years**

- In 2006, the 93rd CAA inserted **Clause (5) in Article 15**. This enabled the State to create special provisions, such as reservations for the advancement of any backward classes of citizens like SCs and STs, in all aided or unaided educational institutes, except minority educational institutes.
- The government subsequently brought the **Right to Education (RTE) Act, 2009**, which centers around inclusive education for all, making it mandatory to include underprivileged children in schools.

**Why Bring Minority Schools Under RTE Now**

NCPCR is of the view that the two different sets of rules -- Article 21A that guarantees fundamental right of education to all children, and Article 30 which allows minorities to set up their own institutions with their own rules & Article 15 (5) which exempts minority schools from RTE - create a conflicting picture between fundamental right of children and right of minority communities.

**National Commission for Protection of Child Rights (NCPCR)**

- NCPCR is a **statutory body** set up in March 2007 under the **Commissions for Protection of Child Rights (CPCR) Act, 2005**.
- It is under the administrative control of **Ministry of Women & Child Development**.
- It inquires into complaints relating to a child's right to free and compulsory education under **Right to Education Act, 2009**.
- It monitors the implementation of **Protection of Children from Sexual Offences (POCSO) Act, 2012**

**Sarva Shiksha Abhiyan (SSA)**

- It is the Government of India's flagship programme for the achievement of Universalization of Elementary Education (UEE) in a time-bound manner, as mandated by the **86th amendment** to the Constitution of India making free and compulsory Education to the Children of **6-14 years age group**.
- A new scheme called **Samagra Shiksha** now subsumes the earlier **three Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE)**.

**Prohibition of Child Marriage (Amendment) Bill 2021**

- Prohibition of child marriage (Amendment) Bill was introduced in Lok Sabha. The bill has been referred to Parliamentary standing committee for discussion. The bill has been decided on recommendation of four-member committee led by Jaya Jaitly.
- It seeks to fix **21 years as the uniform age of marriage for women and men**. The bill once become act will amend the prohibition of Child Marriage Act 2006 and following six personal laws.

**Increases Window For Filing A Petition To Declare A Child Marriage Void**

- Presently, section 3(4) of the Prohibition of Child Marriage Act allows a woman to file for declaration of child marriage as a void before she turns 20 and for the man before he turns 23.
- Prohibition of Child Marriage (Amendment) Bill 2021 proposes to extend this window for both the woman and the man to five years after attaining the age of 18.

**Background**

- In India, the minimum age of marriage was prescribed for the first time (14 years for girls and at 18 years for boys) by the law known as the **Sarda Act, 1929**. It was later renamed as the **Child Marriage Restraint**

**Act (CMRA), 1929.**

- In **1978**, the law was amended to raise the minimum age of marriage to 18 years for girls and 21 years for boys. This position remains the same even in the new law called the **Prohibition of Child Marriages Act (PCMA), 2006**, which replaced the CMRA 1929.
- PMCA makes contracting a marriage by a man who is over 18 years of age with a woman under 18 years, a cognizable and non-bailable offence punishable with imprisonment of two years and a fine of Rs one lakh, but recognizes the union as valid and voidable.

**Current Law On Marriage Age**

- The **Special Marriage Act, 1954** and **Prohibition of Child Marriage Act 2006**, prescribes 18 and 21 years as minimum age of consent for marriage for women and men respectively.
- The **Muslim Personal Law (Shariat) Application Act**: The marriage of a minor who has attained puberty is allowed according to Muslim personal law.
- **Hindu Marriage Act**: It sets 18 years as minimum age for bride and 21 for groom. Child marriage is not illegal but can be declared void at the request of minor in the marriage.

**Need To Reopen Anganwadis**

Due to the Covid pandemic, Anganwadis were closed owing to lockdown. There is need to reopen Anganwadis. Government has proposed to roll out **Early Childhood Care And Education (ECCE) programme** in all Anganwadi centers in phased manner with 2021 -22 as beginning financial year

**About Anganwadi Center**

It is a type of rural child care center. They were started as part of Integrated child development service (ICDS) scheme in 1975. This is world largest early childhood service provider. Anganwadis perform an essential role in developing a *child's mental, physical and social health*. National Education Policy has made anganwadis an important platform to provide early childhood care and education (ECCE).

**Integrated Child Development Service (ICDS) Scheme**

- The scheme provides additional nutrition, immunization and preschool education to the children. It is a widespread programme run by the **Ministry of Women and Child Development (MWCD)**.
- It is a centrally sponsored scheme **implemented by state government and union territories**. The programme is funded under **60:40 ratio (central: state)**. The scheme has been renamed as Anganwadi service.
- There are six services provided under ICDS. The services are provided by the Ministry of women and child development (MWCD) and the Ministry of Health and family welfare (MHFW).

Following table shows the component of ICDS:

Services	Target Group	Service provided by
(i) Supplementary Nutrition	Children below 6 years, Pregnant & Lactating Mothers (P&LM)	Anganwadi Worker and Anganwadi Helper (MWCD)
<b>(ii) Immunization</b>	Children below 6 years, P&LM	<b>(MHFW)</b>
<b>(iii) Health Check-up</b>	Children below 6 years, P&LM	<b>(MHFW)</b>
(iv) Referral Services	Children below 6 years, P&LM	(MHFW)
(v) Pre-School Education	Children 3-6 years	(MWCD)
(vi) Nutrition & Health Education	Women (15-45 years)	(MHFW & MWCD)

**Assisted Reproductive Technology (ART) Bill 2020**

- Lok Sabha passed the Assisted Reproductive Technology (Regulation) Bill, 2020. It makes provisions for the safe & ethical practice of assisted reproductive technology service in country.
- **Assisted reproductive technology comprises of modern technique such as in vitro fertilization, intra uterine insemination, oocyte and sperm donation, cryopreservation that can help infertile couple.**

**Key Point of The Bill**

1. The bill will provide for **regulation and supervision of ART clinic.**
  - ✓ **Formation of National board:** It will advise centre on policy matters. It determines minimum standard of physical infrastructure, laboratory and diagnostic equipment and expert manpower to be employed by clinics and banks.
  - ✓ **State boards** will coordinate the implementation of the guidelines.
  - ✓ **Formation of National registry:** It will have central database for all clinics and medical professionals serving in the field to provide data to National board.
  - ✓ **Formation of Registration Authority:** It will have a chairperson an officer above the rank of joint secretary in the health department, a vice chairperson above the rank of the Joint director in health department, an eminent woman representing a women’s organisation, an officer of the law department and an eminent registered medical practitioner.
    - Registration authority’s functions: To grant, suspend, or cancel the registration of ART centres; to enforce the standards and supervise implementation of the law; to take legal action against the misuse of ART and initiate independent investigations; and to recommend to National and State Boards on modifying the regulation with changes in technology and social conditions.
2. It makes genetic testing of embryo mandatory.
3. Stringent punishment for those practising sex selections, sale of human embryo, gametes or found running agencies, rackets and organisations for such practices in violation of the law.
4. ART procedures are open to married **heterosexual** couples, live in partners, single women and foreigners. Foreigner can visit India under medical tourism to avail ART facility. **Single men and LGBTQ+ individuals and couples** are excluded from accessing ARTs
5. ART services will apply to women above the legal age of marriage and below 50, and to men above the legal age of marriage to 55.

**Bullock Cart Racing Event Permitted In Maharashtra**

Supreme Court allowed Maharashtra to hold **100-year-old** traditional bullock cart racing event. It was earlier banned in 2017. The decision was grounded on amendment to the Prevention of Cruelty to Animals (PCA) Act, 1960 implemented by state in line with Karnataka and Tamil Nadu.

**Background**

- **In 2014**, the Supreme Court **banned traditional sports** like ‘Jallikattu’, bull race and bullock-cart races across the country noting that they violated provisions of the PCA Act.
- Subsequently, Karnataka and Tamil Nadu had amended the law to continue the tradition in a regulated manner, which are under challenge and pending before the Supreme Court since 2018.
- In February 2018, the Supreme Court had referred the pleas related to 'Jallikattu' to a **five-judge Constitution Bench** which would decide if the bull-taming sport fell under cultural rights or perpetuated cruelty to animals

### Prevention of Cruelty to Animal Act 1960

- The act intends to prevent unnecessary pain or suffering on animals.
- **Animal welfare board of India (AWBI)** was established in **1962** under **section 4** of the act.
- Headquarter of AWBI recently being shifted from Chennai to Ballabhagarh in Delhi NCR.

### Other traditional sports involving animals

- Jalikattu (bull taming race) is played in Tamil Nadu during Pongal harvest festival.
- Kambala is buffalo race occurs in paddy fields of coastal areas of Karnataka from November to March.
- Camel race is famous part of festivals in Rajasthan such as Pushkar fair.
- Bulbul fights are organised in Assam during the Bihu festival.

### Dam Safety Act 2021

Dam Safety Act 2021 received President's assent. The centre has brought the legislation under **Article 246** of the constitution read with Entry 56 and Entry 97 of the union list.

- Although water is under the **state list** (Entry 17), the Act no way takes away the authority of the state. It provides a mechanism to ensure that the guidelines are followed.

#### Article 246

Article 246 empowers Parliament to legislate on any matter enumerated in **List I** of the Union list in the **7th Schedule** of the Constitution.

#### Entry 97

Entry 97 allows Parliament to legislate on any other matter not enumerated in List II or List III including any tax not mentioned in either of those Lists.

#### Entry 56

Entry 56 of List I allows Parliament to make laws on the regulation of **inter-state rivers and river valleys** if it declares such regulation to be expedient in public interest

### Salient Feature Of The Act

1. **National Committee on Dam Safety** will be constituted with three-year tenure.
  - ✓ Chaired by Chairman of Central Water Commission with Maximum of 10 representatives of central government in the ranks of joint secretary, maximum 7 representatives of state governments & 3 experts.
  - ✓ Functions of the Committee will include formulating policies and regulations regarding dam safety standards and prevention of dam failures, and analysing the causes of major dam failures and suggesting changes in dam safety practices
2. **National Dam Safety Authority (NDSA)**: A NDSA, headed by an officer not below the rank of an Additional Secretary, is to be appointed by central government. Its head office will be in New Delhi.
  - ✓ The main task of **NDSA** includes implementing the policies formulated by the National Committee on Dam Safety, resolving issues between State Dam Safety Organisations (SDSOs), or between an SDSO and any dam owner in that state, specifying regulations for inspection and investigation of dams.
  - ✓ The NDSA will also provide accreditation to agencies working on construction, design and alteration of dams
3. **State Dam Safety Organisation**: It envisages constituting a State Dam Safety Organisation whose functions will be to keep perpetual surveillance, inspection, monitoring the operation and maintenance of dams, keeping a database of all dams, and recommending safety measures to owners of dams. It will report to **NDSA** in case of problem faced.
4. **Obligations of Dam Owners**: The owners of the specified dams are required to provide a **dam safety unit** in each dam. This unit will inspect the dams before and after the monsoon session, and during and after every earthquake, flood, or any other calamity or sign of distress.

- ✓ Dam owners will be required to prepare an emergency action plan, and carry out risk assessment studies for each dam at specified regular intervals through a panel of experts.
5. **Punishment:** The Bill provides for two types of offences - obstructing a person in the discharge of his functions, and refusing to comply with directions issued.

### Eat Right Station Certification

- **Chandigarh Railway Station** has been awarded a **5- star** 'Eat Right Station' certification - the **fifth station** in India to get this recognition after Anand Vihar Terminal, Delhi, Chhatrapati Shivaji Terminus (Mumbai), Mumbai Central Railway Station, and Vadodara Railway Station.
- It is awarded by **FSSAI** to railway stations that set benchmarks (As per the Food Safety and Standards Act, 2006) in providing safe and wholesome food to passengers.
- ✓ FSSAI is an **autonomous statutory body** established under **Food Safety and Standards Act, 2006**.
- Tagline is '**Sahi Bhojan, Behtar Jeevan**'.
- The certification is part of the '**Eat Right India**' movement which is aligned to **National Health Policy 2017** with its focus on preventive and promotive healthcare and flagship programmes like Ayushman Bharat, POSHAN Abhiyaan, Anemia Mukh Bharat and Swachh Bharat Mission.

### National Drugs And Psychotropic Substances (Amendment) 2021

Parliament has passed National Drugs and Psychotropic substances (Amendment) 2021. It amends the Narcotic Drugs and Psychotropic Substances Act, 1985.

Narcotic Drugs and Psychotropic Substances Act 1985 regulates certain operation (manufacture, transport and Consumption) related to narcotic drugs and psychotropic substances.

- Under the Act, financing certain illicit activities such as cultivating cannabis, manufacturing narcotic drugs or harbouring persons engaged in them is an offence
- Persons found guilty of this offence will be punished with rigorous imprisonment of at least 10 years (extendable up to 20 years) and a fine of at least Rs.1 lakh. It also provides for death penalty in some cases where a person is a repeat offender.
- **Narcotic Control Bureau** was constituted in 1986 under the NDPS Act.
- The act was earlier amended in 2014.

### Need of Amendment 2021

- The bill would replace an ordinance promulgated earlier this year (2021) to correct a drafting error in a 2014 amendment to the Act.
- In 2014, the Act was amended & clause number of definition for such illicit activities was changed.
- However, the section (27A) on penalty for financing these illicit activities was not amended and continued to refer to the earlier clause number of the definition. Thus making the section virtually inoperable.

### Vehicle Scrappage Policy, 2021

- The launch of India's vehicle scrapping policy or the **Voluntary Vehicle-Fleet Modernization Programme** (VVMP) seeks to usher in a new age of what it means to own and use an automobile in India.
- Old vehicles will have to pass a fitness test before re-registration and as per the policy government commercial vehicles more than 15 years old and private vehicles which are over 20 years old will be

scrapped. Old vehicles will be tested at authorized Automated Fitness Center and will not be scrapped merely on the basis of age.

- As a disincentive, increased re-registration fees would be applicable for vehicles 15 years or older from the initial date registration.
- The **state governments** may be advised to offer a road-tax rebate of up to 25% for personal vehicles and up to 15% for commercial vehicles to provide incentive to owners of old vehicles to scrap old and unfit vehicles.
- Vehicle manufacturers will also give a discount of 5% to people who will produce the 'Scrapping Certificate' and registration fees will be waived off on the purchase of a new vehicle.

### Model Tenancy Act, 2015

- States and Union territories can now adopt the Model Tenancy Act by enacting fresh legislation or they can amend their existing rental laws suitably.
- The Act will enable institutionalisation of rental housing by gradually shifting it towards the formal market.
- Applicable prospectively and will not affect the existing tenancies.
- It is an important piece of legislation that promises to ease the burden on civil courts, unlock rental properties stuck in legal disputes, and prevent future tangles by balancing the interests of tenants and landlords.

#### **NO EVICTION**

- > Agreements for new tenancies to be 'written' & submitted to Rent Authority
- > Owners to give 3-month notice before revising rent
- > Security amount should be maximum 2 months' rent for residential & 6 months for commercial property
- > No snapping of services like power & water; no eviction during contract period

Model laws are **not binding on states**. Since MTA is a model law (**as land is a state subject**) the responsibility will now be on the states to accept or reject it. States can adopt the Act as it is with fresh legislation, or they can amend their existing rent acts to factor in the new MTA. States and Union Territories have MoUs with the Centre under the Pradhan Mantri Awas Yojana-Urban which has this provision. Like in the case with RERA (Real Estate Regulation and Development Act), the fear is that states may choose not to follow guidelines, diluting the essence of the Model Act.

## SOCIAL ISSUES

## Digital Initiatives That Have Proved To Be Very Effective During COVID Crisis

## Gyankosh

- It is a national repository for storing digital learning resources developed by Open and Distance Learning Institutions in the country.

## Gyandhara

- It is an internet audio counselling service offered by IGNOU. Students can listen to the live discussions by the teachers and experts on the topic of the day and interact with them through telephone, email and also chat mode.

## Swayam

- It is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., **access, equity and quality**. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged.

## PMGDISHA

- The Pradhan Mantri Gramin Digital Saksharta Abhivan (**PMGDISHA**) is a program under **Digital India Mission** to usher digital literacy in rural India.
- **Ministry for Electronics & IT (MeitY)** launched the program of PMGDISHA Drive & Announcement of 100% Digital Literacy of all digital villages' under Azadi Ka Amrit Mahotsav.
- Under the scheme, **6 crore households in rural areas** will be covered and will be made digitally literate by 31.03.2022.
- To ensure equitable geographical reach, each of the 2,50,000 Gram Panchayats across the country is envisaged to register an average of 200-300 candidates.
- All the households where not a single family member is digitally literate will be eligible under the Scheme. The beneficiary must be digitally illiterate. Only one person per eligible household would be provided with training in the age group of 14 – 60 years.

## Members Of 8 Different PVTGs Got Infected In Second Wave Of Covid-19 In Odisha

- The infected PVTGs include the **Bonda tribe** of Malkangiri hills and **Dongaria Kondh tribe** of Niyamgiri hills.
- Of the 62 tribal groups residing in Odisha, 13 are recognised as PVTGs. The 13 PVTGs in Odisha are: Bonda, Birhor, Chuktia Bhunjia, Didayi, Dungaria Kandha, Hill Kharia, Juang, Kutia Kondh, Lanjia Saora, Lodha, Mankirdia, Paudi Bhuyan and Saora.

**Particularly Vulnerable Tribal Groups (PVTGs):** In 1973, the **Dhebar Commission** created Primitive Tribal Groups (PTGs) as a separate category, which are less developed among the tribal groups. In 2006, the Government of India renamed the PTGs as PVTGs. At present there are **75 PVTGs**. Among the 75 listed PVTGs, the highest number are found in Odisha.

**SC/ST (Prevention of Atrocities) Act 1989 or PoA Act**

- In case of **Patan Jamal Vali v. State of Andhra Pradesh**, the accused was sentenced to life in prison by both the trial court and the High Court. He was convicted guilty of rape under **Section 376** of Indian Penal Code (IPC) and **Section 3(2)(v) of the Prevention of Atrocities Act**.
- It was enacted to protect the marginalized communities against discrimination and atrocities. It was amended in 2015 to specifically recognise more atrocities against Dalit and Adivasi women including sexual assault, Devadasi dedication, etc.

**Section 3(2)(v)**

• It imposes a punishment of life imprisonment on a non-SC/ST person who has committed an offence under IPC on SC/ST person. However, the offence should have a minimum punishment of 10 years and it should be committed against the victim on the ground that such a person is from an SC/ST community.

- The section was amended in 2015, to change the phrase “on the ground that such a person is a member of SC/ST” to “**knowing that such person is a member of SC/ST**”.
- In the amended SC/ST Act (2018), preliminary inquiry is not a must and no prior approval is also required for appointing authorities for senior police officers to file FIRs in cases of atrocities on SC and ST.

**Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi (PM-DAKSH) Scheme**

- Recently, the Government has launched the ‘**PM-DAKSH**’ Portal and the ‘**PM-DAKSH**’ Mobile App.
- The **Ministry of Social Justice and Empowerment**, in collaboration with **National e-Governance Division (NeGD)**, has developed this portal and app to make the skill development schemes accessible to the target groups of *SC (Scheduled Caste), OBC (Other Backward Classes), Economically Backward Classes, Denotified tribes, Sanitation workers including waste pickers, manual scavengers, transgenders and other similar categories*.
- Under this Yojana, eligible target group are being provided skill development training programmes on up-skilling/Re-skilling, short Term & long-term Training Programme, and Entrepreneurship Development Program (EDP).
- It is implemented by 3 Corporations under the Ministry:
  - National Scheduled Castes Finance and Development Corporation (NSFDC),
  - National Backward Classes Finance & Development Corporation (NBCFDC),
  - National Safai Karamcharis Finance and Development Corporation (NSKFDC).

**Safaimitra Suraksha Challenge**

- The Ministry of Housing and Urban Affairs (MoHUA) has launched a **week-long awareness campaign** on SafaiMitra Suraksha Challenge (SSC) as part of the ‘World Toilet Day (19th November) celebrations, to run up to the ‘Swachh Amrit Diwas’.
- SSC has main objective of eradicating the practice of hazardous cleaning of sewers and septic tanks and promoting mechanized cleaning of the same.

**Components of Safaimitra Suraksha Challenge**

1. Skill Development Trainings of Safaimitras have been conducted with the support of Ministry of Social Justice and Empowerment. It will also include ‘**Recognition of Prior Learning**’ (RPL) model for **Green jobs**.
2. Under SSC, National Safai Karamcharis Finance & Development Corporation (NSKFDC), Ministry of Social Justice and Empowerment, supported by MoHUA are organizing Loan Melas across the country.
3. All 246 participating cities have already notified ban on single-use plastic (SUP).

4. **Separate Standard uniform designs** for different categories of sanitation workers across urban India. It will include:

- **Swachhata Commandos (sanitation workers engaged in underground cleaning of sewers and septic tanks)**
- **Safaimitras (engaged in road sweeping and waste collection)**
- **Swachhata Supervisors/ Operators**

5. Assessment by **independent third party**.
6. Cities can try to implement innovative solutions for this like **Bandicoot robot** deployed by Kerala government for cleaning of sewer.
7. 31 States/UTs have established a **Responsible Sanitation Authority (RSA)** and 210 cities are having the Sanitation Response Units (SRU)
8. A dedicated helpline number has been set up to register complaints and provide real-time solutions on desludging or sewer overflow.
9. Cities being awarded a cash prize based on their performance.

### Rising Complaints Of Crime Against Women

- National Commission for Women (NCW) has informed that there was **46% rise** in complaints of crimes against women in the first eight months of 2021 over the corresponding period of last year.
- **Complaint received under various Heads in the decreasing order are:** Right to live with dignity > domestic violence > harassment of married women or dowry harassment >outraging modesty of women or molestation > rape and attempt to rape > cyber crimes
- The right to live with dignity clause takes into account **emotional abuse** of women.
- **State wise: Uttar Pradesh** (10,084) > Delhi (2,147)> Haryana (995) > Maharashtra (974). Over half of these were from Uttar Pradesh.
- NCW was set up as a **statutory body** in January 1992 under the National Commission for Women Act, 1990.
- Its mission is to strive towards enabling women to achieve equality and equal participation in all spheres of life.
- Functions is to review the Constitutional and Legal safeguards for women; recommend remedial legislative measures; facilitate redressal of grievances and advise the Government on all policy matters affecting women.
- The Commission shall consist of :-
  - i) A **Chairperson**, committed to the cause of women, to be nominated by the Central Government.
  - ii) **five Members** to be nominated by the Central Government from amongst persons of ability, integrity and standing who have had experience in law or legislation, trade unionism, management of an industry potential of women, women's voluntary organisations (including women activist), administration, economic development, health, education or social welfare;
    - ✓ Provided that at least one member each shall be from amongst persons belonging to the Scheduled Castes and Scheduled Tribes respectively;
  - iii) a **Member-Secretary** to be nominated by the Central Government who shall be:-
    - ✓ an expert in the field of management, organisational structure or sociological movement, or

- ✓ an officer who is a member of a civil service of the Union or of an all-India service or holds a civil post under the Union with appropriate experience.

### NFHS-5-Women Related Data

- The latest data from National Family Health Survey (NFHS 2019-21) has been released.
- It is conducted by the Ministry of Health and Family Welfare in coordination with the *International Institute of Population Science, Mumbai*.
- The fifth NFHS survey has spotlighted **women's health** as one of its core dimensions.
- It has also surveyed some in-depth issues like components of micro-nutrient to children, menstrual hygiene, reproductive health, etc.

### Key Findings

- **Improvements have been witnessed in several dimensions** such as educational attainment, institutional deliveries, vaccinations, infant mortality, etc.
- **A decline in TFR, a Major Positive:** The Total Fertility Rate (TFR) has been falling over time and has **now reached (at 2.0)** just below the replacement rate of 2.1.
- For the first time in India, between 2019-21, there were **1,020 adult women per 1,000 men**. Uttar Pradesh, Haryana, Punjab, Rajasthan, Bihar, Delhi, Jharkhand, Andhra Pradesh, Tamil Nadu, Odisha, Maharashtra are the major states with low SRB.
- **Marriage age:** The share of women aged 20-24 who married before turning 18 has **declined** from 27% to 23% in the last five years.
  - ✓ **West Bengal and Bihar**, with around 41% such women each, had the highest prevalence of girl child marriage. The maximum reduction in the proportion of underage marriages was observed in Rajasthan, Madhya Pradesh, and Haryana.
- **Poor Performance in Dealing with Anaemia:** The incidence of anaemia in under-5 children (from 58.6 to 67%), **women** (53.1 to 57%), and men (22.7 to 25%) have **worsened in all States of India** (20%-40% incidence is considered moderate).
- **Performance of Malnutrition Indicators:** The three indicators of **malnutrition** - stunting (low height-for-age), wasting (low weight-for-height), and underweight (low weight-for-age) - **show an overall improvement**.
- **Women reproductive Health:** Problems like high rate of C-section is high as 47.5% in private hospital compared to 14.7% in public facility. Addressing issues like menstrual hygiene are still taboo.

### SACRED Portal

- **Senior Able Citizens for Re Employment in Dignity (SACRED) Portal** will support India's elderly.
- **Aim:** Devise ways to ensure Senior Citizens live healthy, happy, empowered, dignified & self-reliant life.

### About

- Citizens above 60 years of age can register on the portal and **find jobs and work opportunities**.
- Weighing experience and new recruitment: Any individual/ firm/ company/ agency will seek the services of the senior citizens in respect of those tasks where experience can naturally outweigh hiring new personnel and providing them training etc. Examples can be short term employment, contract for a project, teaching, counselling jobs.

- Cost: Rs. 10 Cr would be provided for funding of the platform development along with maintenance grant of @ Rs. 2 Cr per year for 5 years. Expenditure would be incurred on actual basis. An amount of Rs. 10 cr would be spent annually for publicity about the portal in various business enterprises.

### Vayo Naman Programme

- It was organised by **Ministry of Social Justice and Empowerment** on the occasion of International Day of Older Persons (1st October).
- On the occasion **following initiatives were launched:**
  - ✓ An **Elderly Help Line** 14567.
  - ✓ **SAGE (Seniorcare Aging Growth Engine) portal** to encourage entrepreneurs in the area of elderly care. Launched by **Ministry of Social Justice and Empowerment**, the portal will be a “one-stop access” of elderly care products and services by credible start-ups. The start-ups selected under SAGE will be those which will provide new innovative products and services to elderly persons in various areas like health, travel, finance, legal, housing, and food among others.

### Maintenance and Welfare of Parents and Senior Citizens Act, 2007

The High Court of Karnataka has said that there is a complete failure on the part of State government to comply with its statutory obligation of establishing old-age homes as per the provisions of the Maintenance and Welfare of Parents and Senior Citizens Act, 2007

#### Section 19 of the law

- State Government may establish and maintain such number of old-age homes at accessible places, as it may deem necessary, in a phased manner, beginning with **at least one in each district.**

### Maintenance and Welfare of Parents and Senior Citizens Act, 2007

- This Act makes it *legally obliging for adult children and heirs* to provide for parents by way of a monthly allowance. This Act provides an inexpensive and speedy procedure to claim monthly maintenance for parents and senior citizens.
- According to this Act, parents could mean biological, adoptive or step-parents.
- Under this Act, there are also provisions to protect the life and property of such persons (elderly).
- State governments may set up maintenance tribunals in every sub-division to decide the level of maintenance. Appellate tribunals may be established at the district level.
- State governments shall set the maximum monthly maintenance allowance. The Act caps the *maximum monthly allowance at Rs 10,000 per month.*
- Punishment for not paying the required monthly allowance shall be Rs 5,000 or up to three months imprisonment or both.

### Ministry of Social Justice and Empowerment's SMILE Scheme for Support for Marginalized Individuals

- “SMILE stands for **Support for Marginalized Individuals for Livelihood and Enterprise**”.
- Focus of the scheme is on rehabilitation, provision of medical facilities, counselling, basic documentation, education, skill development, economic linkages etc.
- It includes sub scheme - ‘**Central Sector Scheme for Comprehensive Rehabilitation of persons engaged in the act of Begging**’.
- The scheme would be implemented with the support of **State/UT Governments/Local Urban Bodies, Voluntary Organizations, Community Based Organizations (CBOs), institutions and others.**

**Comprehensive Rehabilitation Of Persons Engaged In The Act Of Begging**

- The scheme has been implemented in selected cities on pilot basis having large concentrations of the Beggar community.
- During the year 2019-20, this Ministry had released an amount of Rs. 1 Crore to National Institute of Social Defence (NISD) and Rs. 70 Lakh to National Backward Classes Finance & Development Corporation (NBCFDC) for skill development programmes for beggars.
- Ministry had identified 10 cities for undertaking this pilot project. Currently, pilot project is ongoing in 7 cities namely Delhi, Bangalore, Hyderabad, Indore, Lucknow, Nagpur and Patna. However, due to COVID pandemic, project couldn't start in three cities.

**Status of Beggars in India**

Recently, the Supreme Court has agreed to examine a plea for decriminalizing begging which has been made an offense in various states under Prevention of Begging Act 1959.

<b>Census 2011</b>	•Total number of beggars in India is 4,13,670 ( 2,21,673 males and 1,91,997 females) and the number is increasing
<b>Among states</b>	• <b>West Bengal</b> tops the chart followed by UP and Bihar at number two and three respectively
<b>Among UTs</b>	• <b>New Delhi</b> had largest number of beggars 2,187 followed by 121 in Chandigarh. Lakshadweep merely has 2 vagrants according to 2011 census
<b>Among Northeastern states</b>	• <b>Assam</b> topped the chart with 22,116 beggars, while Mizoram ranked low with 53 beggars.

**Child Marriage**

- The Odisha government has rolled out a plan to make the state completely free of child marriage **by 2030**.
- The Odisha government has **roped in five departments for observing “convergent action points on adolescent empowerment and ending child marriage” in line with the state strategy action plan (SSAP)**.
- These departments include school and mass education, skill development and technical education, Scheduled Tribe and Scheduled Caste Development, minorities & backward classes welfare, higher education, and law.

**Efforts To Curtail Child Marriages Before Independence**

- **Ram Mohan Roy created Bramho Samaj in 1828** that sought to break the shackles of caste system, and the fight against Sati that saved the lives of many women. He also advocated **for property rights for women and fought child marriage**.
- **Rukhmaibai**, born in 1864, contested her husband’s claim to conjugal rights in an iconic courtcase *Dadaji Vs Rukhmabai* that led to the passage of **Age of Consent Act in 1891**. In this case, she was helped by **Behramji Malabari**.
- **Child Marriage Restraint Act, 1929/Sharda Act** passed in the Imperial Legislative Council of India, fixed the age of marriage for girls at 14 years and boys at 18 years.

**Legal Framework Governing Adoption Laws in India**

- Muslims, Christians, Parsis, and Jews are governed by the **Guardians and Wards Act, 1890**, as formal adoption is not allowed in these religions.
- Hindus, Sikhs, Buddhists, and Jains, on the other hand, follow **Hindu Adoption and Maintenance Act, 1956**.

**Central Adoption Resource Authority (CARA)**

- The Juvenile Justice (Care and Protection of Children) law was enacted in 2015. The Juvenile Justice Rules of 2016 and the Adoption Regulations of 2017 followed to create the **Central Adoption Resource Authority**.
- CARA is a **statutory body of Ministry of Women & Child Development**, Government of India.
- It functions as the nodal body for the adoption of Indian children and is mandated to monitor and regulate **in-country and inter-country** adoptions.
- CARA is designated as the Central Authority to deal with inter-country adoptions in accordance with the provisions of **Hague Convention on Inter-country Adoption, 1993**, ratified by Government of India in 2003.
- In 2018, CARA allowed individuals in a **live-in relationship** to adopt children from and within India.

**Juvenile Justice (Care and Protection of Children) Amendment Act, 2021**

- It provides that instead of the court, the **District Magistrate** (including Additional District Magistrate) will issue such adoption orders.
- **Appeals:** It provides that any person aggrieved by an adoption order passed by District Magistrate may file an appeal before the **Divisional Commissioner, within 30 days** from the date of passage of such order.
- Additional Functions of District Magistrate: These include supervising the *District Child Protection Unit*, and conducting a quarterly review of the functioning of *Child Welfare Committee*.
- Designated Court: It proposes that all offences under the earlier Act be tried in children’s court.

**‘PM CARES For Children’ Scheme**

- The scheme has been launched for support & empowerment of Covid affected children.
- **Eligibility:** All children who have **lost both parents or surviving parent or legal guardian/adoptive parents** due to Covid 19 will be supported under the scheme.
- **Entitlements:** Such Children to get:

- a monthly stipend once they turn 18 and a fund Rs 10 Lakh when they turn 23 from PM Cares
- Free education
- Free Health insurance of Rs 5 Lakh under Ayushman Bharat till 18 years and premium to be paid by PM Cares

**Prime Minister’s Citizen Assistance and Relief in Emergency Situations Fund (PM-CARES Fund)**

- It is to deal with any kind of emergency or distress situation like posed by the Covid-19 pandemic.
- It is a **public charitable trust with the PM as its Chairman**. Other Members include *Defence Minister, Home Minister and Finance Minister*.
- The Fund enables **micro-donations**.
- It will strengthen disaster management capacities and encourage research on protecting citizens.
- Contribution to PM - CARES Fund Qualifies as **CSR** Expenditure.

**Global Girlhood Report**

- **Save the Children** released the Global Girlhood Report 2021: **Girls Right in Crisis**.
- **West and Central Africa** have the highest rate of child marriage in the world.
- Child marriage kills more than 60 girls a day globally, 26 girls a day in West and Central Africa and six girls a day in South Asia.

India Smart Cities Awards (ISCA) 2020

- The awards were announced by **Ministry Of Housing and Urban Affairs** to commemorate 6 years of the central government’s three initiatives to spur urban development:



- Uttar Pradesh** emerged on the top among all states, followed by **Madhya Pradesh and Tamil Nadu**.
- Indore and Surat** won the award jointly for their overall development.
- Ahmedabad** bagged the 'Smart Cities Leadership Award' and Chandigarh, the award for Union Territories, while Indore won the "Innovative Idea Award".
- These rankings were arrived at by the government on the basis of several parameters such as *social aspects, governance, culture, urban environment, sanitation, economy, water, urban mobility*. It also took into account parameters of *sustainable business model of Integrated Command and Control Centres and innovation in Covid-19 management*.

Smart City Mission	AMRUT Mission	Pradhan Mantri Awas Yojana – Urban
<p><b>Concerned Ministry:</b> Ministry of Housing and Urban Affairs</p> <p><b>Objective:</b> To promote cities that provide <i>core infrastructure</i> and give a <i>decent quality of life</i> to its citizens, a clean and sustainable environment and application of Smart Solutions.</p>	<p><b>Concerned Ministry:</b> Ministry of Housing and Urban Affairs</p> <p><b>Purpose:</b> To ensure that every household has access to a <u>tap with the assured supply of water and a sewerage connection</u>.</p> <ul style="list-style-type: none"> <li>To increase the amenity value of cities by developing greenery and well-maintained open spaces (e.g. parks).</li> <li>To reduce pollution by switching to public transport or constructing facilities for non-motorized transport (e.g. walking and cycling).</li> </ul>	<p><b>Implemented by:</b> Ministry of Housing and Urban Affairs</p> <p><b>Features:</b> Intends to provide housing for all in urban areas by year 2022. Addresses Urban housing shortage among the <u>Urban Poor including the Slum Dwellers</u> by ensuring a pucca house to eligible urban poor.</p> <ul style="list-style-type: none"> <li>The Mission covers the entire urban area consisting of Statutory Towns, Notified Planning Areas, Development Authorities, Special Area Development Authorities, Industrial Development Authorities or any such authority under State legislation which is entrusted with the functions of urban planning &amp; regulations.</li> </ul>

Swachh Survekshan Grameen 2021

- Jal Shakti Ministry** launched Swachh Survekshan Grameen 2021 or rural cleanliness survey 2021
  - ✓ Swachh Survekshan Urban comes under Ministry of Housing and Urban Affairs (MoHUA).
- It comes under **Swachh Bharat Mission (Grameen) Phase-II** which is from **2020-21 to 2024-25**.
- Department of Drinking Water and Sanitation (DDWS)** will undertake Swachh Survekshan Grameen 2021 countrywide to support **acceleration of ODF Plus** interventions.
- ODF plus is to increase momentum for improving ODF Sustainability as well as **Solid and Liquid Waste Management (SLWM) activities** across the villages in the country.
- Weightage to Different Elements**



**About Swachh Bharat Mission**

- To accelerate the efforts to achieve universal sanitation coverage, the Prime Minister of India had **launched the Swachh Bharat Mission on 2<sup>nd</sup> October 2014**.
- Under the mission, all villages, Gram Panchayats, Districts, States and Union Territories in India **declared themselves "Open-Defecation Free" (ODF) by 2<sup>nd</sup> October 2019**, the 150<sup>th</sup> birth anniversary of **Mahatma Gandhi**, by constructing over 100 million toilets in rural India.
- SBM is being implemented by **Ministry of Housing and Urban Affairs and by Ministry of Jal Shakti** for urban and rural areas respectively.
- In **Union Budget 2021-22**, the **Swachh Bharat Mission (Urban) 2.0 was announced** to be implemented over five years – 2021 till 2026 – with an outlay of Rs. 1.41 lakh crore.
- **Swachh Bharat Mission (Grameen) Phase-II** was launched in 2020.
- It further led to **Jal Jeevan Mission (JJM)** for addressing water security.

**Schemes As Part of SBM**

- **GOBAR-DHAN (Galvanizing Organic Bio-Agro Resources) Scheme:** Launched by Ministry of Jal Shakti in 2018 and aims to **augment income of farmers** by converting biodegradable waste into compressed biogas (CBG).
- **Individual Household Latrines (IHHL):** Individuals get around 15,000 for the construction of toilets.
- **Swachh Vidyalaya Abhiyan:** The **Ministry of Education** launched the Swachh Vidyalaya Programme with an objective to provide separate toilets for boys and girls in all government schools within one year.

**'Drink From Tap' Project: Sujal Mission**

- Odisha government has declared **Puri as the first city in the country to have city-wide safe drinking tap water** that can be used directly for drinking and cooking without further filtration or boiling.
- Under **Drink From Tap- Sujal Mission**, people of Puri will be able to fetch water directly from the tap to drink. There is no need for storage or a filter. Tap water will be available 24x7.

**Jal Jeevan Mission envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024. It is under the Ministry of Jal Shakti.**

**Sujalam Campaign**

- Ministry of Jal Shakti has recently launched "**Sujalam**", a **100 days campaign as part of "Azadi ka Amrit Mahaotsav"**. The campaign is meant for Greywater management & ODF sustainability.
- It aims to achieve Open defecation free (ODF) plus status for Villages across the Country in an accelerated manner.
- Cities that had been certified ODF at least once, on the basis of the ODF protocols, are eligible to declare themselves as SBM-ODF+ & SBM-ODF++.

**Panni Maah Campaign**

- The **Union Territory of Ladakh** has launched a month-long campaign- 'Pani Maah' (Water Month) to increase the pace of implementation of Jal Jeevan Mission (JJM), and to inform and engage village communities on the importance of clean water.
- 'Pani Maah' will run at the Block and Panchayat level in two phases.

**First phase:** Here, the focus will be on **Swachhta Sarvekshan** and **Sanitation drives** by Village Water and Sanitation Committee (VWSC)/ **Pani Samiti**

**Second phase:** Here, the focus will be on organizing **Pani Sabhas** and **door-to-door visits** for effective communication on water quality and service delivery under JJM.

### Glue Grant Scheme

- Central universities will kick off the implementation of **academic credit banks** and the glue grant meant to encourage **multidisciplinary** in UG courses.
- Institutions in the same city would be encouraged **to share resources, equipment and even allow their students to take classes from each other.**
- The idea behind the glue grant scheme is - these institutions can have better synergy, while also retaining their internal autonomy.

### Academy Bank of Credit Proposed Under NEP 2020

- Set-up by the University Grants Commission (UGC). Under the ABC, students will be given **multiple entry and exit options.** This enables students to leave a degree or course and get a corresponding certification and rejoin studies after a certain time and be able to start from where they had left. It will also provide students with the **flexibility to move between institutes while pursuing one degree or leave a course.**
- ABC will keep records of the academic credits of a student. It will not accept any credit course document directly from the students for any course they might be pursuing, but only from higher education institutes, who will have to make deposits in students' accounts.
- ABC will help in credit verification, credit accumulation, credit transfer and redemption of students, and promotion of the students.

### Vernacular Innovation Program (VIP)

- With an ambition to empower innovators and entrepreneurs across the country, **Atal Innovation Mission (AIM), NITI Aayog** has come up with a first of its kind Vernacular Innovation Program (VIP).
- It which will enable innovators and entrepreneurs in India to have access to the innovation ecosystem in 22 scheduled languages by the Government of India.
- To build the necessary capacity for the VIP, AIM has identified and will be training a Vernacular Task Force (VTF) in each of the **22 scheduled languages.**
- Each task force comprises of vernacular language teachers, subject experts, technical writers, and the leadership of regional Atal Incubation Centers (AICs).
- India may be the first nation in the world to launch such an initiative where an innovation ecosystem catering to 22 languages plus English is being built.

### INSPIRE AWARDS-MANAK

8th National Level Exhibition and Project Competition (NLEPC) for INSPIRE Awards – MANAK (**Million Minds Augmenting National Aspiration and Knowledge**), showcased the **innovative ideas** from 581 students representing various States/UT's.

### Innovation In Science Pursuit for Inspired Research (INSPIRE) Scheme

- Launched in 2008, it is an innovative scheme proposed by **Department of Science & Technology (DST).**

- To **attract youth talent** at an **early stage** and build the required critical **human resource pool** for expanding the Science & Technology system and R&D base.
- It has **3 programs** and five components.
  1. Scheme for Early Attraction of Talents for Science (**SEATS**)
  2. Scholarship for Higher Education (**SHE**)
  3. Assured Opportunity for Research Careers (**AORC**).

#### About INSPIRE Awards - MANAK

- The scheme is aligned with the '**Start-up India**' initiative and comes under **DST**.
- The scheme aims to motivate students in the **age group of 10-15 years** and studying in **classes 6 to 10** to become future innovators and critical thinkers.
- **Award of Rs.10,000** is disbursed into bank accounts of winning students under DBT scheme.

#### NIPER Amendment Act 2021

- President gives his assent to the National Institute of Pharmaceutical Education And Research (Amendment) Act, 2021 (NIPER).
- It amended the **NIPER Act 1998** which established the National Institute of Pharmaceutical Education and Research at Mohali in Punjab and declared it an institution of national importance.

#### Key Points of Act

1. It declares **six** additional National Institute of Pharmaceutical Education and Research as **Institute of National Importance**. These institutes will be located in **Ahmadabad, Hajipur, Hyderabad, Kolkata, Guwahati and Raebareli**.
2. It seeks **establishment of advisory council**, which will be a central body to coordinate the activities of all institutes.
3. It rationalises the Board of Governor of each NIPER from existing **23 to 12**.
4. It widens the scope and number of courses run by the institute.
5. NIPER will be governed on the lines of Indian Institute of Technology.

#### ASER REPORT

- **16<sup>th</sup> edition** of the Annual Status of Education Report (**ASER 2021**) survey was released. ASER has been conducted every year **since 2005** in **all rural districts** of India.
- Unlike most other large-scale learning assessments, ASER is a **household-based rather than school-based survey**. All children to be included – those who have never been to school or have dropped out, as well as those who are in government schools, private schools, religious schools or anywhere else.
- The survey **analysed the impact of Covid-19 on learning**.

#### Key Highlights

- **Increasing Enrollment in Government School:** There was an unprecedented jump in government school students, and a 10-year low in private school enrolments.
  - A clear shift from private to govt schools — from 64.3% in 2018 to 65.8% in 2020, to 70.3% in 2021.
  - A fall in private school enrolment from 28.8% in 2020 to 24.4% in 2021.
- **Growing Dependency On Private Tuition:** It has reported a growing dependency on private tuition classes. Students, especially those from poor families, are dependent more than ever on private tuition.

- **Digital Divide:** There exists a stark digital divide, which carries the risk of severely affecting learning abilities of primary grade students. Almost a third of all children in Classes I and II did not have a smartphone available at home.
- **Problems With New Entrants:** From having no experience of pre-primary class or anganwadis to the lack of access to digital devices, the pandemic has left the youngest entrants in India’s formal education system **particularly vulnerable**. 1 in 3 children in Classes I and II have never attended an in-person class.
- **Learning Gap:** 65.4% teachers flagged the problem of children being “unable to catch up” as one of their biggest challenges. This is also a warning that their learning outcomes are set to be affected unless addressed with urgency.

**Positive Trend**

- The report captured a **decline in the proportion of children not currently enrolled in the 15-16 age group**. This is one of the sections which faces the highest risk of dropping out.
- In 2010, the proportion of 15-16-year-olds who were out of school was 16.1%.
- Driven by the government’s push to universalise secondary education, this number has been steadily declining and stood at 12.1% in 2018. The decline continued in 2020 to 9.9% and to 6.6% in 2021.

**SOER For India: UNESCO**

- On the Occasion of the World Teachers’ Day, UNESCO launched its *2021 State of the Education Report (SOER) for India: “No Teacher, No Class”*
- It is the annual flagship report of UNESCO.
- This third edition focused on the theme of **3Ts - Teachers, Teaching, and Teacher education**.
- The report aims to serve as a reference for enhancing the implementation of NEP as well as towards the realization of SDG 4 target 4c on teachers.
- **Target 4c:** By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States.

**Shikshak Parv**

- Prime Minister addressed teachers and students during the inaugural conclave of ‘Shikshak Parv’. He highlighted that the transformation being ushered in the education sector is not just policy-based but **also participation based**.
- Ministry of Education (MoE) celebrated Shikshak Parv, 2021 from **September 5-17** in recognition of the **valuable contributions of teachers** and to take National Education Policy (NEP) 2020 a step forward.
- **Theme for 2021:** Quality and Sustainable Schools: Learnings from Schools in India.

### New Education Policy (NEP) 2020

<p><b>FOR SCHOOLS</b>  <b>From 10+2 to 5+3+3+4:</b> Current 10+2 structure in which policy covered schooling from Class 1 to 10 (age 6-16) and then Class 11-12 (age 16-18) gives way to 5 years of foundational education, 3 of preparatory, 3 of middle &amp; 4 years of secondary schooling</p> <p><b>Multi-Stream:</b> Flexibility to choose subjects across streams; all subjects to be offered at two levels of proficiency</p> <p><b>Diluted Board:</b> Board exams to test only core competencies; could become modular (object and subjective) and will be offered twice a year</p> <p><b>Multilingual:</b> 3-language policy to continue with preference for local language medium of instruction till class 8</p> <p><b>Bag-Less Days:</b> School students to have 10 bag-less days in a year during which they are exposed to a vocation of choice (i.e. informal internship)</p>	<p><b>FOR COLLEGES</b>  <b>SAT-Like College Test:</b> National Testing Agency to conduct common college entrance exam twice a year</p> <p><b>4-Year Bachelor:</b> 4-year multi-disciplinary bachelor’s programme to be preferred; mid-term dropouts to be given credit with option to complete degree after a break</p> <p><b>No Affiliation:</b> Over next 15 years colleges will be given graded autonomy to give degrees, affiliation with universities to end, so would deemed university status</p> <p><b>Fee Cap:</b> Proposal to cap fee charged by private institutions of higher learning</p> <p><b>Going Global:</b> Top-rated global universities to be facilitated to come to India, top Indian institutions to be encouraged to go global</p>
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**PISA**

- The field trial of **PISA (Program for International Student Assessment)** is scheduled to be held.
- India has participated in PISA test **only once before in 2009**. Students from Himachal Pradesh and Tamil Nadu sat for the test, **India ranked 72<sup>nd</sup> out of 73 countries**, outranking only Kyrgyzstan. Since then, India has stayed away from the test until now.
- It is a **competency-based test** designed to assess the ability of **15-year-old candidates** that **measures their reading, mathematics, and science literacy every three years** to apply their knowledge to real-life situations.
- It is an international survey coordinated by the **Organization for Economic Cooperation and Development (OECD)** and was first conducted in 2000.

**Organization for Economic Cooperation and Development**

- Headquartered in **Paris**, it was formed in **1961**. It has **38 member countries**. **India is not a member** but one of the key partners of the organisation.
- It is an **international organisation**, having a goal to shape policies that foster prosperity, equality, opportunity, and well-being for all.
- The **Financial Action Task Force (FATF) Secretariat** is located at OECD headquarters.

**Performance Grading Index (PGI) For 2019-2020 Released By Ministry Of Education**

- PGI is a tool to grade all States and UTs on their performance **across 70 indicators on school education** to encourage States & UTs to adopt best practices like online recruitment and transfer of teachers, electronic attendance of students & teachers.
- First published in 2019 with reference year 2017- 18.
- The indicators have been grouped into 2 Categories – **Outcomes** and **Governance & Management**.
- **Punjab, Chandigarh, Tamil Nadu, Andaman & Nicobar Islands, and Kerala** occupy the highest grade A++ in 2019-20.
- **Bihar and Meghalaya** have scored the lowest in terms of infrastructure and facilities.

**NISHTHA: Teachers' Training Programme**

- **Ministry of Tribal Affairs and NCERT** have come together on a joint mission for **NISHTHA Capacity Building Programme for Eklavya Model Residential Schools (EMRSs)** Teachers and Principals.
- **National Initiative for School Heads and Teachers Holistic Advancement (NISHTHA)** is a national mission to improve learning outcomes at the elementary level. This is done through integrated teacher training.
- It is the **largest teachers' training programme** of its kind in the world. It has been launched under the Centrally Sponsored Scheme of **Samagra Shiksha** in 2019-20.

**Eklavya Model Residential Schools (EMRS)**

- EMRS started in the year **1997-98** to impart quality education to **ST children in remote areas**. The schools focus not only on academic education but on the all-round development of the students.
- It will not only enable them to avail reservation in high and professional educational courses and as jobs in government and public and private sectors but also to have access to the best opportunities in education at par with the non-ST population.
- Each school has a capacity of 480 students, catering to students from **Class VI to XII**.
- These are being set up by **grants provided under Article 275(1)** of the Constitution.
- EMRSs are funded by the **Ministry of Tribal Affairs**.

- In order to give further impetus to EMRS, it has been decided that by the year 2022, every block with more than 50% ST population and at least 20,000 tribal persons, will have an EMRS.

### Samagra Shiksha Scheme

- Integrated scheme for school education covering entire gamut from **pre-school to class XII**.
- It subsumes the three Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE).
- It is being implemented as a centrally sponsored scheme. It involves a **60:40 split** in funding between the Centre and most States. It was launched by the **Ministry of Education in 2018**.

### Samagra Shiksha Scheme 2.0

- **Direct Benefit Transfer (DBT):** DBT would include RTE (Right to Education) entitlements such as textbooks, uniforms and transport allowance.
- **Encouraging Indian languages:** It has a new component for appointment of language teachers, which includes salaries, and training costs as well as bilingual books and teaching learning material as recommended in NEP.
- **Pre-primary Education:** It will now include funding to support **pre-primary sections** at government schools, i.e. for teaching and learning materials, indigenous toys and games and play-based activities. Master trainers for pre-primary teachers and anganwadi workers will be supported
- **NIPUN Bharat Initiative:** Annual provision of Rs. 500 per child for learning materials, Rs. 150 per teacher for manuals and resources and Rs. 10-20 lakh per district will be given for assessment for foundational literacy and numeracy.
- **Digital Initiatives:** Provision for ICT labs and smart classrooms, including support for digital boards, virtual classrooms and DTH channels
- **For out-of-school children:** Provision to support out of school children from age 16 to 19 with funding of Rs. 2000 per grade to complete their education via open schooling.

### Ministry of Education Launched NIPUN Bharat Programme

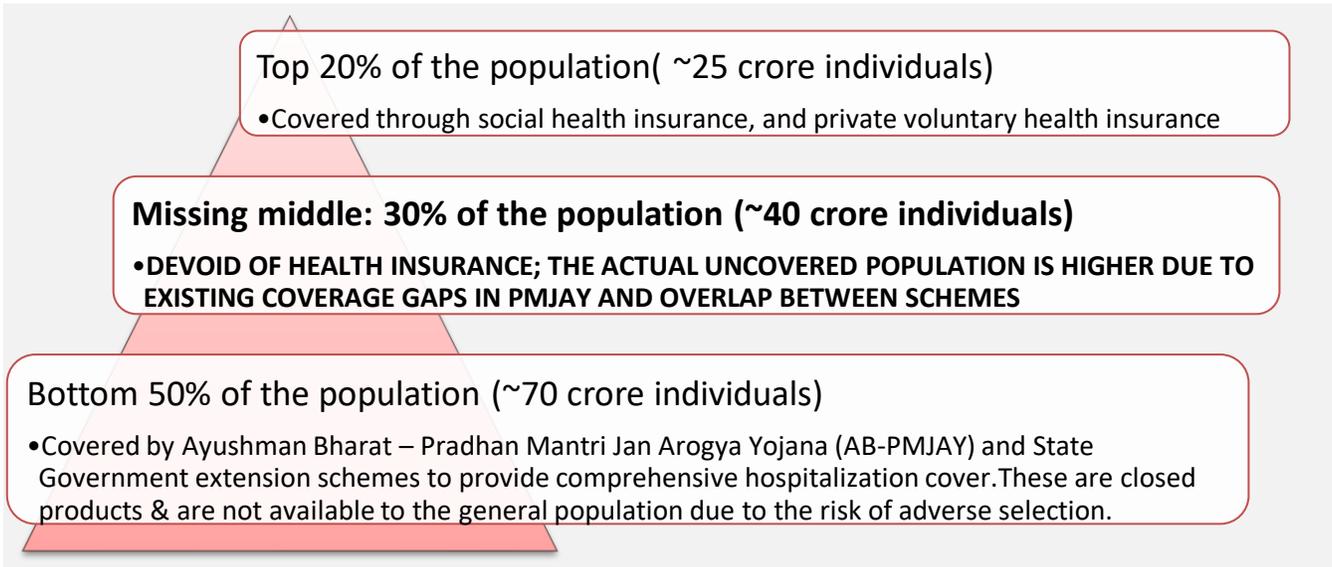
- NIPUN stands for the **National Initiative for Proficiency in Reading with Understanding and Numeracy**. It will be implemented by the **Department of School Education and Literacy**.
- Launched as a **part of NEP (National Education Policy) 2020**, it has been envisioned for ensuring that every child in the country necessarily attains foundational literacy and numeracy by end of **Grade 3 by 2026-27**.
- It will cover the learning needs of children in the age group of **3 to 9 years**.
- A special package for **foundational literacy and Numeracy (FLN)** under **NISHTHA** is being developed by **NCERT**. Around 25 lakh teachers teaching at pre-primary to primary grade will be trained this year on FLN.
- A **five-tier** implementation mechanism will be set up at the *National- State- District- Block- School level* in all States and UTs, under the aegis of the centrally sponsored scheme of Samagra Shiksha.

### School Innovation Ambassador Training Program

- It is innovative and one of its kind training program for School Teachers.
- **Aim:** Training **50,000 school teachers** on Innovation, Entrepreneurship, IPR, Design Thinking, Product development, Idea generation etc.
- The training will be delivered in **online mode only** and has been designed by **Innovation Cell of the Ministry of Education** and **AICTE** for School Teachers.
- It is a collaborative effort by the **Ministry of Education's Innovation Cell, Ministry of Tribal Affairs**, Central Board of Secondary Education (**CBSE**) and the **AICTE**.

**Health Insurance For India’s Missing Middle**

- NITI Aayog has released a comprehensive report titled **Health Insurance for India’s Missing Middle**. It brings out the gaps in health insurance coverage across the Indian population and offers solutions to address the situation.
- The report has suggested sharing the government scheme data with private insurance companies. Government databases such as National Food Security Act (NFSA), Pradhan Mantri Suraksha Bima Yojana, or the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) for agricultural households can be shared with private insurers after taking consent from these households, suggesting an outreach strategy.



**Baby Friendly Hospital Initiative (BFHI)**

- A new initiative will now help mothers identify “breastfeeding-friendly” hospitals before they give birth.
- The Breastfeeding Promotion Network of India (**BPNI**), in collaboration with Association of Healthcare Providers of India (**AHPI**), which comprises more than 12,000 private hospitals, has launched an accreditation programme that will enable hospitals to get a “breastfeeding-friendly” tag.
- The certification process involves two stages — first stage includes self-assessment by a hospital, followed by an external assessment by an authorised appraiser who interviews doctors, nurses and patients as well as reviews different practices and training of staff. The accreditation process costs ₹17,000 per hospital.

**About**

- The initiative is only for private hospitals and is based on the Ministry of Health and Family Welfare's **MAA programme** for government hospitals launched in 2016.
- The tools for this evaluation process have been developed in partnership with the Health Ministry and WHO.
- The BFHI programme is a worldwide programme of the **WHO and UNICEF**. Though India adopted it in 1993, it fizzled out by 1998 and is now being revived after more than two decades.
- **Chennai's Bloom Healthcare** has become the first hospital to be recognised as “breastfeeding-friendly” under this programme.

BPNI is a 30-year-old organisation for protection, promotion and support of breastfeeding in India. It is a national organisation that works towards protecting, promoting and supporting breastfeeding and appropriate complementary feeding of infants & young children

**Immunisation Agenda 2030 (IA2030)**

- It sets an ambitious, overarching global vision and strategy for vaccines and immunization for the decade 2021–2030.
- Global agencies like WHO, UNICEF and others have set a target of **avoiding 50 million vaccine preventable infections** in this decade as part of a new immunisation programme.
- It also intends to **reduce the number of zero-dose children by 50%**. Zero-dose children are those who have received no vaccines through immunisation programmes.
- To achieve **90% coverage for essential vaccines** given in childhood and adolescence.
- To complete 500 national or subnational introductions of new or under-utilized vaccines - such as those for Covid-19, rotavirus, or human papillomavirus (HPV).

The IA2030 is based on learnings from Global Vaccine Action Plan (GVAP). It aims to address the unmet targets of the GVAP. GVAP was developed to help realize the vision of the Decade of Vaccines, that all individuals and communities enjoy lives free from vaccine preventable diseases.

**Drug Abuse**

- Calling for a humane approach towards **drug users and addicts**, the Union Ministry of Social Justice and Empowerment has recommended changes to the Narcotic Drugs and Psychotropic Substances (NDPS) Act to **exempt them from a prison term**.
- **Consumption across states: Uttar Pradesh** has the highest number of cannabis users, followed by Punjab, Sikkim, Chhattisgarh, and Delhi, according to the AIIMS report.
- Of the total opioid users, nearly 77 lakh or **over one-third** are in the harmful or drug-dependent category due to **excess use**.
- Roughly one-third of such cases are from **Uttar Pradesh, Punjab, Haryana, Maharashtra and Delhi**.
- However, in terms of population percentage, the **north-eastern states top the list**. Nearly **7% of the population in Mizoram**, for instance, consume opioids.
- **Extent of Drug abuse in India:** From traditional **plant-based drugs** such as cannabis, cocaine, and heroin to **synthetic drugs** such as tramadol, consumption of narcotic substances in India has increased manifold in recent years.
- In terms of users, India's illicit drug markets are **mostly dominated by cannabis and opioids**.



**Gaming Disorder**

- The gaming disorder is quickly growing as the pandemic spurred an increased use of Internet devices.
- According to the All India Gaming Federation, India’s **online gaming industry is expected to be worth Rs.15,500 crore by 2023**.
- A 2019 survey by the U.S.-based Limelight Networks found that **India had the second largest number of gamers** after South Korea.
- **WHO** categorised gaming disorder as a **mental health condition** in 2018.

- According to the WHO's definition, a person who has gaming disorder will show the **following characteristics for at least 12 months**: Lacking control over their gaming habits, Prioritizing gaming over other interests and activities, Continuing gaming despite its negative consequences.

### Rice Fortification Plan To Tackle Malnutrition

- The Prime Minister has announced that rice distributed under various government schemes such as the public distribution system (PDS) and mid-day meal (MDM) will be fortified by 2024.
- **Food fortification**: Food Safety and Standards Authority of India (FSSAI) defines fortification as “deliberately increasing the content of essential micronutrients in a food so as to improve the nutritional quality of food and to provide public health benefit with minimal risk to health

#### Rice fortification

Various technologies are available for rice fortification, such as **coating** and **dusting**. For rice fortification in India, *extrusion* is considered to be the best technology.

- In **extrusion technology**, dry rice flour is mixed with a premix of micronutrients, and water is added to this mixture. This mixture is then processed to produce **fortified rice kernels** (FRK) similar in shape & size to rice.
- As per the Food Ministry's guidelines, 10 g of FRK must be blended with 1 kg of regular rice. FRK has a shelf life of at least 12 months.
- Rice kernels *can be* fortified with several micronutrients, such as iron, folic acid and other B-complex vitamins, vitamin A and zinc.
- FSSAI regulations, 2016 notified five staple product with F+ logo
  - Fortified rice and wheat contains Iron, Vitamin B12 and Folic Acid.
  - Fortified Milk, Edible Oil (Vitamins A and D) and Double Fortified Salt (Iodine and Iron)
- The cost of producing FRK with three micronutrients will be around Rs 0.60 per kg. This cost will be shared by the Centre and the states. The government will pay this cost to rice millers.

**Types of food fortification**: Food fortification can also be categorized according to the stage of addition:

- Commercial and industrial fortification (wheat flour, cornmeal, cooking oils)
- Bio fortification (breeding crops to increase their nutritional value)
- Home fortification (example: vitamin D drops)

### Nutrition Smart Village Initiative

- A program on “**Nutrition Smart Village**” will be initiated to strengthen the **Poshan Abhiyan**.
- It will be part of the **Azadi Ka Amrit Mahotsav**, to commemorate the 75th year of Independence of India.
- To **promote nutritional awareness, education, and behavioral change** in rural areas involving farm women and school children.
- **Harnessing traditional knowledge** through the local recipe to overcome malnutrition.
- Implementing **nutrition-sensitive agriculture** through homestead agriculture and Nutri-garden.

### POSHAN 2.0

- The **Ministry for Women and Child Development** inaugurated Poshan 2.0 and urged all **Aspirational Districts** to establish a **Poshan Vatika (nutrition garden)** during the Nutrition Month (Poshan Mah) from 1st September.

- A month-long celebration of the POSHAN Abhiyan mission places special attention on Severe Acute Malnourished (SAM) children. It includes month-long activities focused on antenatal care, optimal breastfeeding, **Anaemia**, growth monitoring, girls' education, diet, **right age of marriage**, hygiene, etc.
- **Poshan Vatika'** objective: To ensure supply of nutrition through *organically homegrown vegetables and fruits* simultaneously ensuring that the soil must also remain healthy.
- **Poshan Maah:** The month of September is celebrated as POSHAN Maah since 2018 to **improve nutritional outcomes for children, adolescent girls, pregnant women, and lactating mothers.**
- The activities focus on **Social and Behavioural Change Communication (SBCC)** and are based on Jan Andolan Guidelines.

### Key Points of Poshan 2.0

- Merging **SNP (Supplementary Nutrition Programmes)** and **POSHAN Abhiyaan**. It subsumed **4 existing** centrally sponsored schemes of **umbrella Integrated Child Development Service (ICDS)**
  - i) **Anganwadi Services**
  - ii) **Poshan Abhiyan**
  - iii) **Scheme for Adolescent Girls**
  - iv) **National Creche Scheme**
- It focuses on **1,000 days** between a *mother's pregnancy and her child's 2<sup>nd</sup> birthday* prioritizing women and girls, and addressing their **nutritional deficiencies** through **fortification** and provision of **take-home rations**.
- Introduction of **community-based programmes** for tackling severe acute malnutrition.
- The guidelines place **accountability for the first time at district level** with nutrition indicators included in the KPIs (key performance indicators) of district magistrates/district collectors.
- **Malnutrition:** It refers to **deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients**. The term malnutrition addresses 3 broad groups of conditions:
  - **Undernutrition:** It includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age).
  - **Micronutrient-related:** It includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess;
  - **Overweight:** Obesity and diet-related non-communicable diseases (such as heart disease, stroke, diabetes, and some cancers).
- The **Sustainable Development Goal (SDG 2: Zero hunger)** aims to **end all forms of hunger and malnutrition by 2030**, making sure all people – especially children – have access to sufficient and nutritious food all year round.

### WHO Report On Dementia

- WHO has released a report titled '**Global Status Report On Public Health Response To 'Dementia'**'.
- The report takes stock of progress made towards **2025 global targets** for dementia laid out in the WHO's 'Global Dementia Action Plan' 2017.
- More than 55 million people are living with dementia. This number is estimated to rise to 78 million by 2030 and to 139 million by 2050.
- **Dementia Is A Syndrome:** Usually of a chronic or progressive nature that leads to **deterioration in cognitive function** beyond what might be expected from the usual consequences of ageing.
- It is one of the leading causes for dependency and disability among old aged people.

- It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement.
- It results from a variety of diseases and injuries that primarily or secondarily affect the brain such as Alzheimer's disease or stroke.

### Indian Initiatives

- **Alzheimer's and Related Disorders Society of India:** It calls for the government to have its plan or policy on dementia which must be implemented in all states and funded and monitored by the health ministry.
- **National Health Mission:** It envisages achievement of universal access to equitable, affordable & quality health care services that are accountable and responsive to people's needs.

### Ministry of Minority Affairs is Implementing Pradhan Mantri Jan Vikas Karyakaram (PMJVK)

- The erstwhile Multi-sectoral Development Programme (**MsDP**) has been restructured and renamed as Pradhan Mantri Jan Vikas Karyakram for effective implementation since 2018. It seeks to provide better **socio-economic infrastructure facilities** to the **minority communities**.
- As far as PMJVK is concerned, the communities notified as minority communities under **Section 2 (c) of the National Commission for Minorities Act, 1992** would be taken as Minority Communities.
- The areas under PMJVK have been identified on the basis of minority population and socio-economic and basic amenities data of Census 2011.
- In case of non-gap-filling innovative projects, the fund sharing between Centre and State would be in the ratio of **60:40**. For North East States and Hilly States (Himachal Pradesh & Uttarakhand), it will be 90:10
- At present, **6 communities namely Muslims, Sikhs, Christians, Buddhists, Zoroastrians (Parsis) and Jains** have been notified as Minority Communities.

### 9 Lakh Beneficiaries Under Tele-Law Programme

- Tele Law Programme was launched by the **Ministry of Law and Justice** in collaboration with the **Ministry of Electronics and Information Technology (MeitY)** in **2017** to address cases at **pre-litigation stage**.
- This service aims to reach out to the needy, especially the marginalized and disadvantaged which uses video conferencing facilities and telephone services to connect lawyers to litigants who need legal advice.
- The **concept of Tele-Law is to facilitate delivery of legal advice through a panel of lawyers** stationed at the state Legal Services Authorities (SALSA) and **Common Service Centres (CSC)**.

### UP Government Released New Population Policy On World Population Day

The new policy has provisions to give incentives to those who help in population control. The Policy is voluntary.

UP government will give incentives in the form of promotions, increments, concessions in housing schemes and other perks to employees who adhere to population control norms, and have two or less children.

- Public servants who adopt two-child norm will get two additional increments during the entire service, maternity or as the case may be, paternity leave of 12 months, with full salary and allowances and 3% increase in the employer's contribution fund under the National Pension Scheme

<ul style="list-style-type: none"> <li>▪ Decrease the <b>total fertility rate</b> (number of children per woman) from 2.7 to <b>2.1 by 2026</b> and <b>1.7 by 2030</b></li> <li>▪ Increase <b>modern contraceptive prevalence rate</b> from 31.7% to <b>45% by 2026</b> and <b>52% by 2030</b></li> <li>▪ Increase <b>male methods of contraception use</b> from 10.8% to</li> </ul>	<ul style="list-style-type: none"> <li><b>15.1% by 2026</b></li> <li>▪ Decrease <b>maternal mortality rate</b> (per 1,00,000 live births) from 197 to <b>150 by 2026</b> and <b>98 by 2030</b></li> <li>▪ Decrease <b>infant mortality rate</b> (per 1,000 live births) from 43 to <b>32 by 2026</b> and <b>22 by 2030</b></li> <li>▪ Decrease <b>under 5 mortality rate</b> (per 1,000 live births) from 47 to <b>35 by 2016</b> and <b>25 by 2030</b></li> </ul>
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- For those who are not government employees and still contribute towards keeping the population in check, will get benefits like rebates in taxes on water, housing, home loans etc.
- If the parent of a child opts for vasectomy, he/she will be eligible for free medical facilities till the age of 20.
- UP government plans to set up a **state population fund** to implement the measures.
- The draft bill also asks the state government to introduce population control as a **compulsory subject in all secondary schools**.

### World Social Protection Report 2020-22

- International Labour Organisation (ILO) has released World Social Protection Report 2020-22.
- Social Security refers to comprehensive protection extended by the **society and state** to its members to enable them to overcome various contingencies and lead a dignified life.
- It includes access to health care and income security measures related to old age, unemployment, sickness, disability, work injury, maternity, or the loss of the main breadwinner in a family.
- Globally 4.1 billion people (53%) were living without a social safety net of any kind.
- In 2020, **only 46.9% of the global population benefitted from at least one protection** under the ambit of social security.
- **Europe and Central Asia have the highest rates of coverage** - 84% of people are covered by at least one benefit. While America (64.3%), Asia and the Pacific (44%), the Arab States (40%), and Africa (17.4%) have marked coverage gaps.

### Convention No. 144 of ILO and Indian Labour Conference

- The Bharatiya Mazdoor Sangh has asked the government to convene Indian Labour Conference (ILC).
- The Indian Labour Conference (ILC) is the apex level **tripartite consultative committee** in the **Ministry of Labour & Employment** to advise the Government on the issues concerning working class of the country.
- All states to establish tripartite mechanisms comprised of **worker group, employer group and government group** at state level.
- India also has a legal obligation to do so since the Parliament has ratified **Convention No. 144 of the ILO** related to strengthening the tripartite mechanism.
- All the 12 Central Trade Union Organisations, Central Organisations of employers, all State Governments and UTs and Central Ministries/Departments, concerned with the agenda items, are the members of the ILC.
- The **first meeting of the Indian Labour Conference (then called Tripartite National Labour Conference) was held in 1942** and the last session was in **2015**.

### Prime Ministers Shram Awards

- The Government of India has announced the Prime Minister's Shram Awards (PMSA) for the year 2018.
- This year the Awards are given in three categories namely:

- Shram Bhushan Awards which carry cash prize of Rs.1,00,000/- each,
- Shram Vir/Shram Veerangana Awards which carry a cash prize of Rs. 60,000/- each
- Shram Shree/Shram Devi Awards which carry cash prize of Rs. 40, 000/- each

- Objective is to recognize the outstanding contributions made by workmen in organizations both in **public and private** sector.

- The Awards will be presented to the workmen as defined in **Industrial Disputes Act, 1947** and employed in the Departmental Undertakings of the Central and State Governments, Central and State Public Sector Undertakings as also private sector and having **minimum of 500 employees on roll**.
- Workmen solely engaged in routine service duties would not be eligible.

### Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM) Scheme

According to the Ministry of Labour & Employment, nearly 46 lakh Unorganised Workers (UW) have been registered under **Pradhan Mantri Shram Yogi Maandhan (PM-SYM) pension scheme**. In order to provide old age protection in the form of a monthly pension, Government of India launched PM-SYM pension scheme in 2019.

#### About PM-SYM

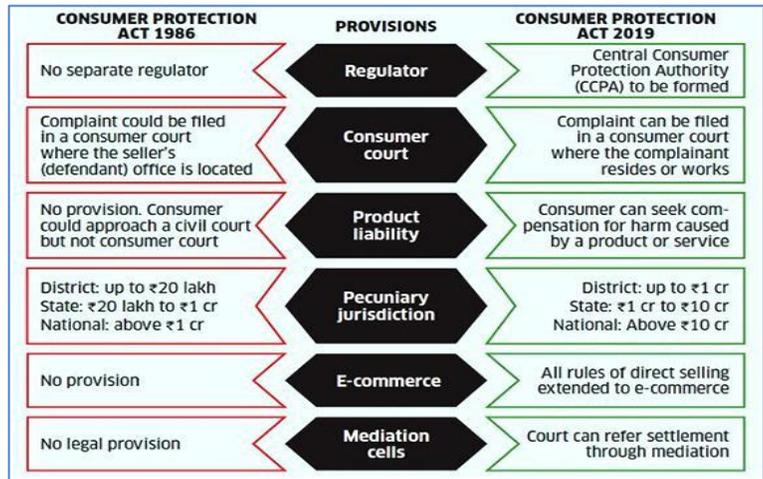
PM-SYM is a Central Sector Scheme administered by the **Ministry of Labour and Employment** and implemented through **LIC of India and Community Service Centers (CSCs)**.

Eligibility	Salient Features	SAMPANN project
<ul style="list-style-type: none"> <li>— Should be an <b>Unorganised Worker</b> with Monthly Income <b>Rs 15000 or below</b></li> <li>— Entry age: <b>18-40 years</b></li> <li>— Should not be an income tax payer</li> <li>— Should possess a <b>mobile phone, savings bank account and Aadhaar number</b></li> <li>— Should not be covered under New Pension Scheme (NPS), Employees' State Insurance Corporation (ESIC) scheme or Employees' Provident Fund Organisation (EPFO)</li> </ul>	<ul style="list-style-type: none"> <li>— Each subscriber shall receive a minimum assured pension of <b>Rs 3000/- per month</b> after attaining the age of <b>60 years</b>.</li> <li>— <b>During the receipt of pension, if the subscriber dies</b>, the spouse of the beneficiary shall be entitled to receive <b>50% of the pension</b> received by the beneficiary as family pension. Family pension is applicable only to spouses.</li> <li>— If a beneficiary has given regular contribution and <b>died due to any cause (before age of 60 years)</b>, his/her spouse will be entitled to join and continue the scheme subsequently by payment of regular contribution or exit the scheme</li> <li>— The subscriber's contributions shall be made through 'auto-debit' facility from the savings bank account/ Jan-Dhan account.</li> <li>— It functions on <b>50:50 basis</b> where prescribed age-specific contribution shall be made by the beneficiary and the <b>matching contribution</b> by the Central Government.</li> </ul>	<ul style="list-style-type: none"> <li>• Launched in 2018 and being implemented by the <b>Ministry of Communications</b>.</li> <li>• It is a seamless online pension processing and payment system for Department of Telecommunications pensioners.</li> <li>• It has helped the Department in faster settlement of pension cases, improved reconciliation (grievances)/auditing, timely SMS alerts and ease of accounting by e-Pension payment orders.</li> <li>• It has also been instrumental in settling close to <b>76000 BSNL Voluntary Retirement Scheme 2019 cases</b> in a short span of <b>6 months</b>.</li> <li>• Every pensioner gets access to key information like payment history along with a login option.</li> </ul>

### National Consumer Disputes Redressal Commission (NCDRC)

- Supreme Court has expressed displeasure over delay in filling up vacancies in the National Consumer Disputes Redressal Commission and State Consumer Disputes Redressal Commissions.
- Set up in **1988** under the **Consumer Protection Act of 1986**, NCDRC is a **quasi-judicial commission** in India, headquartered at New Delhi.
- Commission is **headed by a sitting or retired judge of the Supreme Court**.
- Consumer Protection Act of 1986 provided for a **three-tier consumer dispute redressal machinery** at the **National (National Consumer Disputes Redressal Commission), State and District levels**.

- The **Consumer Protection Act, 2019** establishes the **Central Consumer Protection Authority (CCPA)** whose primary objective will be to promote, protect and enforce the rights of consumers.



### Son Chiraiya

- Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM), under the aegis of MoHUA, has focussed on equipping the **urban poor women** with adequate skills and opportunities, and to enable them to promote sustainable micro enterprises.
- The **Ministry of Housing and Urban Affairs** has launched '**SonChiraiya**'.
- SonChiraiya** is a brand and logo for the marketing of **urban Self-Help Group (SHG) products**.
- It mobilizes women from urban poor households into SHGs and their federations to create a support system for these women.

### Portal for Affordable Credit and Interest Subvention Access (PAiSA)

- It is a centralized IT platform which simplifies & streamlines the release of interest subvention under DAY-NULM.
- It offers end to end online solution for processing, payment, monitoring and tracking of interest subvention claims from banks on a monthly basis.
- The portal has been designed and developed through the Allahabad Bank.

### NCRB Report 2020

- National Crime Records Bureau (NCRB) released the Crime in India Report 2020. NCRB data reflects the number of cases **registered by police** and hence hinges on the **responsiveness of police personnel** on the ground.
- Traditional Crimes- number of cases registered for **traditional crimes** such as those against women, children and senior citizens, theft, burglary, robbery and dacoity, **dropped** by ~ 2 lakh.
- Murder registered a **marginal increase** of 1% even as offences falling under the category of "**violent crimes**" **decreased** by 0.5%.
- Delhi is the most unsafe** city for **women**.
- UAPA cases:** J&K > Manipur > Jharkhand > Assam > UP
- Communal Riots:** Delhi > Bihar > Haryana > Jharkhand > Maharashtra > Gujarat
  - ✓ Uttar Pradesh did not record a single case of communal violence in 2020
- Caste conflict:** Bihar > Maharashtra > UP > Karnataka > Tamil Nadu
- Agrarian riots:** The year saw unprecedented protests against the **three farm laws** passed by the Centre, recorded 2,188 agrarian riots, a jump from 1,579 in 2019.
  - ✓ Punjab reported **zero cases** of agrarian riots and Haryana (34).
  - ✓ Highest cases have been reported from Bihar > Maharashtra > Karnataka > UP > Jharkhand
- Andolan/morcha:** It is Kerala that has recorded the highest number

- **Attacks on police personnel** decreased, a drop of almost 40%.
- **Promoting Enmity Between Groups:** Tamil Nadu > UP > Telangana > Assam
- **Environment Related Offences:** Increased by **78.1%** in the country in 2020.
- **Cyber Crime:** Rate of cyber-crime (incidents per lakh population) also increased from 3.3% in 2019 to 3.7% in 2020.

## Caste Census

The Union government has filed an affidavit in the Supreme Court claiming that a **caste census of the Backward Classes is administratively difficult and cumbersome.**

### Why The Data Is “Unusable” According To The Government?

- The government had said that the total number of castes surveyed in 1931 was 4,147 while the SECC figures show that there are more than 46 lakh different castes. Assuming that some castes may bifurcate into sub-castes, the total number cannot be exponentially high to this extent.
- The entire exercise was corrupted because the enumerators had used different spellings for the same castes. In many cases the respondents had refused to divulge their castes.

### How Have Caste Details Been Collected So Far?

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

## CENSUS v/s SECC

### Census

- The origin of the Census in India goes back to the **colonial exercise of 1881.**
- Census has evolved and been used by the government, policymakers, academics, and others to capture the Indian population, access resources, map social change, **delimitation exercise**, etc.

### Socio- Economic and Caste Census (SECC)

- SECC was conducted for the **first time since 1931.**
- SECC is meant to canvass every Indian family, both in rural and urban India, and ask about their **Economic status**, so as to allow Central and State authorities to come up with a range of indicators of deprivation, permutations, and combinations which could be used by each authority to define a poor or deprived person.
- It is also meant to ask every person their **specific caste name** to allow the government to re-evaluate which caste groups were economically worse off and which were better off.
- SECC has the **potential to allow for a mapping of inequalities at a broader level.**

### Difference Between Census & SECC

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

## Global Food Index 2021

- India is ranked at **71st position** in the Global Food Security (GFS) Index 2021 of 113 countries.

- It measures the underlying drivers of food security, based on the factors of: **Affordability, Availability, Quality and safety, Natural resources and resilience**
- Ireland, Austria, UK, Finland, Switzerland, Netherlands, Canada, Japan, France, and US **shared the top rank** with the overall GFS score in the range of 77.8 and 80 points
- India held 71st position with an overall score of 57.2 points fared better than Pakistan (75th), Sri Lanka (77th), Nepal (79th), and Bangladesh (84th). **But the country was way behind China (34).**

### Kerala's Smart Kitchen Project

- Kerala government has announced the introduction of a Smart Kitchen project, which is meant to **modernise kitchens** and ease the difficulty faced by homemakers in household chores.
- To be implemented through Kerala State Financial Enterprises (KSFE), a state-run chit fund and lending firm.
- Under the scheme, KSFE would give **soft loans** to women from all walks of life for purchasing household gadgets or equipment. The interest of the loan/cost would be equally shared among the beneficiary, local self-government body and the state government.

### Ujjwala 2.0 Scheme

- Prime Minister has launched the second phase of the **Ujjwala gas connection scheme** for the poor.
- It is aimed to provide maximum benefit to the **migrants** who live in other states and find it difficult to submit address proof.
- Now they will only have to give "Self Declaration" to avail the benefit.
- Under Ujjwala 2.0, an additional **10 million** LPG connections will be provided to the beneficiaries. Government has also fixed a target of providing piped gas to 21 lakh homes in 50 districts.
- Nodal Ministry: **Ministry of Petroleum and Natural Gas (MoPNG).**
- The scheme provides a financial support of Rs 1600 for each LPG connection to the BPL households.
- Along with a deposit-free LPG connection, Ujjwala 2.0 will provide the first refill and a hotplate free of cost to the beneficiaries.

### Internal Displacement: UNHCR Report

- Internal displacement is described as situations that forced people to leave home but are staying inside the political boundary of the country. This report is published annually by **United Nations High Commission for Refugees.**
- This year focuses on the relationship between climate change, disaster, and displacement.
- Global displacement is climbing over 82 million despite pandemics. It has swelled around three million in 2020.
- Africa Violence in Ethiopia and Mozambique is causing a surge in displacement.
- Deadly Jihadist violence has led to displacement in Mozambique.
- Freshly displacement in Sahel region.
- Only 3.2 million IDPs have returned home in 2020 marking a drop of 40% from 2019.
- 20 million displaced due to climate change issue.
- The problem of internal displacement has increased straight for nine years.
- 42% displaced are girls and boys under the age of 18.

United Nations High Commissioner for Refugee is UN's refugee agency and a world organisation dedicated to save lives, protect rights and shape healthier future for refugee, forcibly displaced communities and stateless people. It was created **in 1950** to help millions of Europeans who had fled or lost their homes. Geneva **Switzerland** is the head quarter for UNHCR.

## INTERNATIONAL RELATIONS

## Jerusalem Crisis (Israel-Palestine Conflict)

- The Israeli armed forces stormed **Al-Aqsa Mosque** in the Haram esh-Sharif in Jerusalem, ahead of a march by Zionist nationalists commemorating Israel's capture of the eastern half of the city in 1967 injuring many Palestinians.
- In retaliation, **Hamas**, the Islamist militant group that runs Gaza, fired dozens of rockets. Israel launched an airstrike on Gaza in response.
- Hundreds of thousands of Palestinians were forced out of their homes when the State of Israel was created in historic Palestine in 1948 (the Palestinians call the events 'Nakba', or catastrophe).
- Jerusalem has been at the centre of the Israeli Palestinian conflict. According to the original 1947 UN Partition Plan, Jerusalem was proposed to be an international city.
- But in the first Arab Israel war of 1948, the Israelis captured the western half of the city, and Jordan took the eastern part, including the Old City that houses Haram esh-Sharif. Al-Aqsa Mosque (Islam's third holiest site) and the Dome of the Rock are situated within Haram esh-Sharif. One side of the compound, called Temple Mount by the Jews, is the Wailing Wall (Western Wall), which is believed to be the remains of the Second Jewish Temple, the holiest site in Judaism.
- Israel captured East Jerusalem from Jordan in the **1967 Six-Day War** and annexed it later. Since its annexation, Israel has expanded settlements in East Jerusalem. It is now home for some 220,000 Jews.
- India has remained "steadfast" in its support for Palestinian rights and has consistently voted in favour of Palestine at the United Nations.
- India has consistently voted in favour of those resolutions that promote the **two-state solution** with a Palestinian claim to East Jerusalem.



## Israeli PM's First Official Visit To UAE

- Israel's Prime Minister, Naftali Bennett, made the **first official visit to the United Arab Emirates**.
- This visit was part of a blitz of regional diplomacy amid the backdrop of struggling nuclear talks with Iran.

## Background

## Normalization of ties

- Israel and the UAE, in 2020, signed a normalization deal under **Abraham Accord**. It was brokered by the administration of former U.S. President Donald Trump.
- In just one year since normalizing the relationship between these two countries, this official visit was made highlighting the potential of this deal.

## Concerns over Iran nuclear program

- This trip took place against the backdrop of struggling nuclear talks with Iran.
- Iran has pushed for sanctions relief in Vienna as world powers try to revive the 2015 Iran nuclear deal. **Both Israel and UAE have long shared fears** over Iran's nuclear activities.

### Israel-UAE Peace Deal (Abraham Accord)

After Egypt's peace treaty with Israel in 1979, followed by Jordan's in 1994, **Abraham Accord** makes **UAE only the third Arab country to normalise relations with Israel.**

#### Key Highlights Of The Deal

- The deal promises to establish normal relations between the two countries. This includes business relations, tourism, direct flights, scientific cooperation, and, full diplomatic ties at the ambassadorial level.
- An important component of the deal is **enhanced security cooperation against regional threats, especially from Iran and its proxies.**
- Israel, on its part, has **agreed to suspend declaring sovereignty over territories** it occupies in the West Bank, as highlighted in the Joint Statement released after the signing of peace deal.

### India-UAE Negotiations For CEPA

- India and UAE started formal negotiations for a mutually-beneficial Comprehensive Economic Partnership Agreement (CEPA).
- Both countries formally launched negotiations for a **CEPA with an early harvest Comprehensive Strategic Partnership (CSP)** concluding by end December 2021 and new formal agreement to be signed by March 2022.

#### Aims To Increase Bilateral Trade In Goods And Services

- The proposed free trade agreement (FTA) is expected to raise **bilateral merchandise trade to \$100 billion** in five years following the signing of the pact. In FY21, the bilateral merchandise trade was at \$43 billion.
- It also aims to more than double **bilateral services trade to \$15 billion** during this period.

### India – UAE Bilateral Relationship

- PM Modi, in August 2019, was awarded the **highest civilian award of UAE called 'Order of Zayed'**.
- UAE is currently India's 3rd largest trading partner (after USA and china) with bilateral trade in FY20 valued at \$59 billion.
- UAE is 8th largest investor in India, having invested \$11 billion between 2000 and 2021.
- Abu Dhabi National Oil Company along with Indian Strategic Petroleum Reserves Ltd. (ISPRL) are establishing **a strategic crude oil reserve in Mangalore (Karnataka).**
- **Bilateral Defence Exercise**
  - ✓ Zayed Talwar exercise, In-UAE BILAT - naval exercise
  - ✓ DESERT EAGLE-II – Airforce exercise
- In February 2019, Abu Dhabi included **Hindi as the 3rd official language** used in its courts, alongside Arabic and English.

### Operation Pangea XIV

- Operation Pangea is an international effort to target the **online sale of counterfeit and illicit health products.** It also aims to raise public awareness of the potential dangers of buying medicines online.
- The operation is coordinated by **INTERPOL.** It involved police, customs and health regulatory authorities from 92 countries. First time held in 2008.
- India's CBI participated in this operation.
- A record number of fake online pharmacies have been shut down under Operation Pangea XIV targeting the sale of counterfeit and illicit medicines and medical products. It resulted in 1,13,020 web links including

websites and online marketplaces being closed down, the highest number since the first Operation Pangea in 2008.

**About Interpol**

- **Full Name** - International Criminal Police Organisation; Founded in **1923**; Headquartered at **Lyon, France**
- Interpol is an **international police organisation** made up of 194 member countries. Interpol does not work under UN. It has enjoyed a special role – that of **Permanent Observer at the United Nations** - since 1996.
- It is **not a police force** in the traditional sense—its agents are **not able to arrest criminals**.
- It is **more of an information-sharing network**, providing a way for national police forces to co-operate effectively and tackle international crime ranging from human trafficking and terrorism to money laundering and illegal art dealing.
- The organization operates centralised criminal databases that contain fingerprint records, DNA samples and stolen documents.
- **“Red Notice”** - a notification that a member state would like someone arrested. States are not obliged to follow these notices, but will often treat them as a warrant for someone’s arrest and extradition.

**Interpol General Assembly**

- The General Assembly is Interpol’s **supreme governing body**, and comprises representatives from all its member countries.
- It meets annually for a session lasting approximately four days, to vote on activities and policy. It takes decisions in the form of resolutions.

**New Atlantic Charter**

- The new charter is an effort to **stake out a grand vision for global relationships in the 21st century**, just as the original (1941) was a declaration of a Western commitment to democracy and territorial integrity just months before the US entered World War II.
- The new charter focuses on **climate change** and the **need to protect biodiversity** with references to **emerging technologies, cyberspace** and **sustainable global development**.
- It calls on Western allies to oppose interference through disinformation or other malign influences, including in elections. It ranks the threats to democratic nations in a technological era.
- It vows that as long as there are nuclear weapons, **North Atlantic Treaty Organisation (NATO)** will remain a nuclear alliance.

**India Launches 41st Scientific Expedition To Antarctica**

**Two Major Programs Under 41st Expedition**

**1st**

- Encompasses geological exploration of **Amery ice shelf** (3rd largest ice shelf in Antarctica) at **Bharati station**.
- This will help explore the link between India and Antarctica in the past.

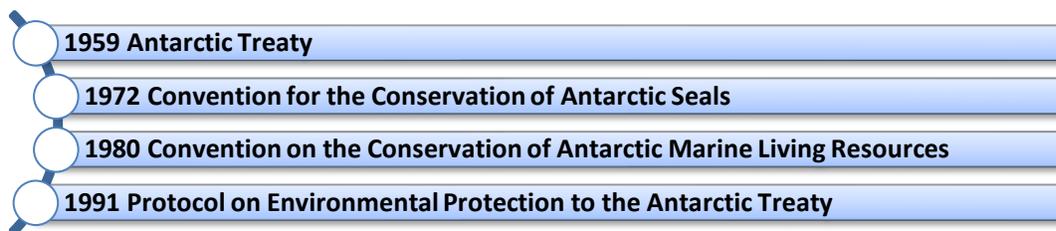
**2nd**

- Involves reconnaissance surveys and preparatory work for drilling of 500 meters of ice core near **Maitri**.
- It will help in improving the **understanding of Antarctic climate, westerly winds, sea-ice, and greenhouse gases** from a single climate archive for the past 10,000 years.

- The expedition will also replenish the annual supplies of food, fuel, provisions, and spares for operations and maintenance of life support systems at **Maitri and Bharati, Antarctica**.
- Antarctica is the fifth-largest continent in terms of total area.
- Antarctica is a unique continent in that it **does not have a native population**. Scientists take turns going there to study the ice.
- There are no countries in Antarctica, although **seven nations** claim different parts of it:
  - ✓ New Zealand, Australia, France, Norway, the United Kingdom, Chile, and Argentina.
- Use of Antarctica for scientific studies and for other activities is governed by the **Antarctic Treaty**.

### 60th Anniversary of Entry Into Force Of Antarctic Treaty (23 June 1961)

- Signed between 12 countries in Washington on 1st December 1959 for making the Antarctic Continent a **demilitarized zone** to be preserved for scientific research only.
- The twelve original signatories are Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the Union of Soviet Socialist Republics, the UK and the US.
- The treaty entered into force in 1961 and currently has **54 parties**. India became a member of this treaty in 1983.
- **Headquarter:** Buenos Aires, Argentina.
- For the purposes of treaty system, Antarctica is defined as **all of the land and ice shelves south of 60°S latitude**.
- The Antarctic Treaty system is made up of four major international agreements:



### Indian Antarctic Programme

It is a scientific research and exploration program under the **National Centre for Antarctic and Ocean Research (NCPOR)**. It started in 1981 when the first Indian expedition to Antarctica was made.

#### NCPOR

- It is an important R&D institution under the **Ministry of Earth Sciences**.
- It was established as an autonomous R&D body in 1998. It is located in Goa.
- It is the nodal agency for planning, promotion, coordination and execution of the entire gamut of polar and southern ocean scientific research in the country as well as for the associated logistics activities.
- It also maintains India's permanent stations in Antarctica, Maitri and Bharati, and also the research base in the Arctic, Himadri.
- **Dakshin Gangotri:** It was the first Indian scientific research base station established in Antarctica, as a part of the Indian Antarctic Program. It has weakened and become just a supply base. It is located 2500 km from the South Pole.
- **Maitri:** It is India's second permanent research station in Antarctica. It was built and finished in 1989. Maitri is situated on the rocky mountainous region called Schirmacher Oasis. India also built a freshwater lake around Maitri known as Lake Priyadarshini.
- **Bharti:** India's latest research station operation since 2012. It has been constructed to help researchers work in safety despite the harsh weather. It is India's first committed research facility & is located about 3000 km

east of Maitri.

- **Sagar Nidhi:** In 2008, India commissioned the Sagar Nidhi, for research. An ice-class vessel, it can cut through the thin ice of 40 cm depth and is the first Indian vessel to navigate Antarctic waters.

### **NPR Slips And Long Term Visas**

- Migrants belonging to six non-Muslim minority communities from Afghanistan, Pakistan and Bangladesh, while applying for long-term visas (LTVs), can also produce National Population Register (NPR) enrolment slips as proof of the duration of their stay in India.
- The NPR number is part of an illustrative list of more than 10 documents that could be provided to apply for an LTV, which is a precursor to acquiring Indian citizenship either by naturalisation or registration under Section 5 and 6 of the Citizenship Act, 1955, for the six communities — Hindus, Sikhs, Jains, Parsis, Christians and Buddhists — from the three countries.
- For foreigners of non-Indian origin, a longer-term visa is classed as one that permits the holder to stay in India for longer than 180 days (six months) continuously.

### **Information Fusion Centre for Indian Ocean Region (IFC-IOR)**

- The United Kingdom has appointed a liaison officer to the Indian Navy's Information Fusion Centre for Indian Ocean Region (IFC-IOR), which is meant for maritime domain awareness.
- **Located in Gurugram**, the IFC-IOR was set up in 2018 to coordinate with regional countries on maritime issues and act as a regional repository of maritime data.
- It presently has linkages with 21 partner countries and 22 multi-national agencies across the globe.

### **Bhutan Adopts India's Unified Payment Interface (UPI) Standards For Its Quick Response (QR) Code**

- Bhutan is the **second country after Singapore** to have BHIM-UPI acceptance at merchant locations.
- Bhutan will also become the only country to both issue and accept RuPay cards as well as accept BHIM-UPI.
- The BHIM app has **three levels of authentication**

**Bharat Interface for Money (BHIM)** is India's digital payment application (app) that works through UPI, a system that powers multiple bank accounts into a single mobile application. Developed by National Payments Corporation of India (NPCI), it allows real time fund transfer. Launched in December, 2016.

**Unified Payments Interface (UPI)** is an **instant real-time payment system**, allowing users to transfer money on a real-time basis, across multiple bank accounts without revealing details of one's bank account to the other party.

### **Seychelles' Tax Inspectors Without Borders (6th TIWB)**

Seychelles' Tax Inspectors Without Borders (TIWB) programme has been launched in partnership with India.

- It is expected to be of **12-month duration**.
- It aims to aid Seychelles in strengthening its tax administration by transferring technical know-how and skills to its tax auditors through sharing of best audit practices.
- The focus of the programme will be on **Transfer Pricing cases of tourism and financial services** sector.
- This programme is the **6th TIWB programme** which has been **supported by India by providing Tax Expert**.
- In the past, India has also extended its support to **Bhutan** under the same program (5th TIWB).

- It depicts Indian commitment to South-South Cooperation, SAGAR initiative and elder brother approach to the Indian Ocean Nations.

**About TIWB**

- It is a joint initiative of the United Nations Development Programme (**UNDP**) and the Organisation for Economic Cooperation and Development (**OECD**), **launched in 2015**.
- The program supports countries in building tax audit capacity.

**At UNHRC, Grave Concerns Raised Over Xinjiang**

- Credible reports indicate that over a million people have been arbitrarily detained in Xinjiang and that there is widespread surveillance disproportionately targeting **Uighurs and members of other minorities** and restrictions on fundamental freedoms and Uighur culture.
- China recognises the community only as a regional minority and rejects that they are an indigenous group.



The **Uighurs** are a predominantly **muslim minority Turkic ethnic group**, whose origins can be traced to Central and East Asia. The Uighurs speak their own language, similar to Turkish, and see themselves as culturally and ethnically close to Central Asian nations.

Currently, the largest population of the Uighur ethnic community lives in the Xinjiang region of China with significant populations in Uzbekistan, Kyrgyzstan and Kazakhstan.

**About UNHRC**

- Between 1946 and 2006, the UN Commission on Human Rights (UNCHR), created as a subsidiary body of Economic and Social Council (ECOSOC), served as the UN's central policy organ in the human rights field.
- The UNHRC was established by the United Nations General Assembly in 2006, to replace the United Nations Commission on Human Rights (UNCHR).
- Based in **Geneva**, the Human Rights Council is an inter-governmental body **within the United Nations system**.
- High Commissioner for Human Rights is the principal human rights official of UN.
- Members meet around **three times a year** to debate human rights issues and pass **non-binding resolutions** and recommendations by majority vote.
- It responds to human rights emergencies and is responsible for investigating alleged human rights violations.

**Membership In UNHRC**

- 47 Member States are elected directly and individually by secret ballot by majority of the members of General Assembly.
- Human Rights Council candidates are elected in geographical groups to ensure even representation. Seats are distributed among Regional Groups of:

African States (13)

Asia-Pacific States (13)

Latin American and  
Caribbean States (8)Western European  
and other States (7)

- The members of the Council shall **serve for a period of three years** and shall not be eligible for immediate re-election after two consecutive terms.

**China Has Been Awarded A Malaria-Free Certification From WHO**

- Following a **70-year effort**, **China has been awarded a malaria-free certification from WHO.**
- China is the first country in WHO Western Pacific Region to be awarded a malaria-free certification in more than 3 decades. Other countries in the region that have achieved this status include Australia (1981), Singapore (1982) and Brunei Darussalam (1987).
- Globally, 40 countries and territories have been granted a malaria-free certification from WHO – including, **most recently, El Salvador (2021), Algeria (2019).**

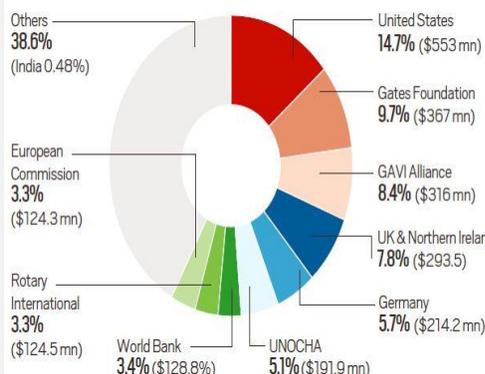
**“1-3-7” strategy:** The “1” signifies the one-day deadline for health facilities to report a malaria diagnosis; by the end of day 3, health authorities are required to confirm a case and determine the risk of spread; and, within 7 days, appropriate measures must be taken to prevent further spread of the disease

- WHO grants the certification when a country has demonstrated that the chain of indigenous malaria transmission by Anopheles mosquitoes has been interrupted nationwide for at least the past three consecutive years.

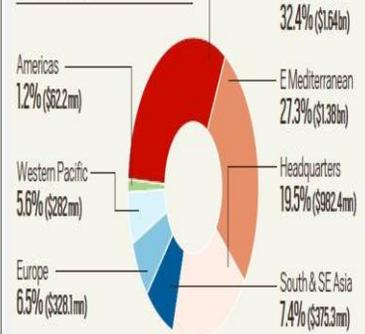
**About World Health Organisation**

- Established in 1948, WHO is a **specialized agency of the United Nations** responsible for international public health. The agency is part of the United Nations Sustainable Development Group.
- Headquartered in **Geneva**, the logo of WHO features the Rod of Asclepius as a symbol for healing.
- Its flagship publication, the **World Health Report**, provides expert assessments of global health topics and health statistics on all nations. The WHO also serves as a forum for summits and discussions on health issues.
- The **World Health Assembly**, composed of representatives from all 194 member states, serves as the agency's supreme decision-making body. It also elects and advises an **Executive Board** made up of 34 health specialists. The WHA is **convened annually.**
- **Funding:** There are four kinds of contributions that make up funding for the WHO. These are assessed contributions, specified voluntary contributions, core voluntary contributions and PIP contributions.
  - ✓ **Assessed contributions** are the dues countries pay in order to be a member of the Organization. The amount each member state must pay is calculated *relative to the country's wealth and population.*
- The **United States** is currently the WHO's biggest contributor, making up 14.67 % of total funding. The US is followed by Bill & Melinda Gates Foundation forming 9.76 %. India makes up 0.48 per cent of total contributions, and China 0.21 per cent.
- The biggest programme area where the money is allocated is polio eradication (26.51 %), followed by increasing access to essential health and nutrition services (12.04 %), and preventable diseases vaccines (8.89 %).

CONTRIBUTORS, OVERALL



WHERE THE FINANCING GOES



### China's National Carbon Emissions Trading Market

- China has officially launched its long-awaited national carbon emissions trading market. **China's Emissions Trading Scheme (ETS) has replaced the EU's as the world's largest emissions trading system.**
- The country is trying to use the trading scheme to reduce greenhouse gas emissions, as part of its effort to peak its emissions by 2030 and achieve carbon neutrality by 2060.
- For the first time, the responsibility for controlling greenhouse gas emissions at the national level is left to the enterprises.

### China Opens First Road-Rail Transport Link To Indian Ocean

The **first shipments**, using the newly-launched railway line from the Myanmar border to the key commercial hub in Chengdu in western China, were delivered.

#### Key Highlights

- This corridor connects logistics lines of Singapore, Myanmar and China using **sea–road-rail link**. One way saves 20-21 days linking Indian Ocean with southwest China.
- Singapore to Yangon Port -Transportation **using ship** through the Andaman Sea
- Yangon port to Lincang - Lincang is Chinese side of the Myanmar-China border in Yunnan province (Transportation **via road**)
- Lincang to Chengdu - Transportation **using new railway** line.



#### Other Chinese Projects Aimed At Accessing Indian Ocean

- **Port in Kyaukphyu in Rakhine state (Myanmar):** As part of *China-Myanmar Economic Corridor*, China plans to develop a port in Kyaukphyu. It also includes a **proposed railway line from Yunnan directly to the port.**
- **Gwadar port in Pakistan:** It is key outlet to the Indian Ocean. It is being developed as part of the China Pakistan Economic Corridor (CPEC).

### Chinese Intrusion Into Taiwan's Air Defence Identification Zone

Taiwan had said a **large incursion of Chinese military jets** flew into its **air defence zone**.

#### China – Taiwan Relation

- China and Taiwan were divided during a **civil war in the 1940s.**
- Taiwan has its own constitution, democratically elected leaders and about 300,000 active troops in its armed forces.
- However, China considers **Taiwan to be a province of China** under what it calls the “**one China principle**”. It has not ruled out the use of force to reunite it.

#### What Is Air Defence Identification Zone (ADIZ)

- ADIZ is a defined area of airspace within which **civil aircraft are required to identify themselves.**
- These zones are **established above the exclusive economic zone (EEZ)** or high seas adjacent to the coast, and over the territorial sea, internal waters, and land territory.
- The legal basis for such zones is the right of States under the **Convention on International Civil Aviation of 1944.**

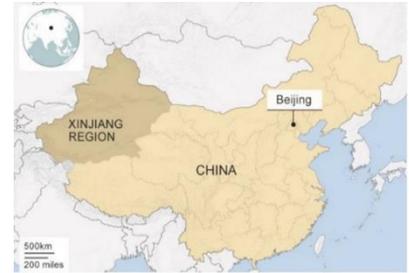
- It should be noted that ADIZs are not directly covered by international treaties. Hence, they are **not binding legal agreements**.

ADIZ in India: India has demarcated 6 ADIZ near its territory. These zones have been declared over

- International border with Pakistan
- International border with Nepal
- Line of Actual Control with China
- Along the eastern borders with Bangladesh
- Borders of Bhutan and Myanmar
- Two in the southern region of India

### US Law to Block Imports from Xinjiang over Forced Labour

- President Joe Biden has signed a bill into law to block imports from China's Xinjiang region unless businesses can prove that the items were made without forced labour.
- The law -**Uighur Forced Labor Prevention Act** - is part of the U.S. pushback against Beijing's treatment of China's Uighur Muslim minority.
- The US says China is committing genocide in its treatment of the Uighurs. That includes reports of forced sterilisation and large detention camps where many Uighurs allegedly are forced to work in factories.
- The Indian government has maintained near silence on the Uighur crisis.



#### Forced Labour in China's Xinjiang Region

- Over the last four years, the People's Republic of China (PRC) has carried out a mass detention and political indoctrination campaign against Uyghurs.
  - This was highlighted by the report of the US Department of State.
- Uyghurs are predominantly Muslim, and they live in the Xinjiang Uyghur Autonomous Region (Xinjiang), a large region in western China.

#### Charges against China

- Many international groups have thoroughly documented the PRC's discriminatory practices like:
  - Discriminatory use of surveillance technologies and
  - Trumped-up administrative and criminal charges to abduct and detain more than one million Muslims, including Uyghurs.
- These Muslims are detained in as many as 1,200 state-run internment camps throughout Xinjiang.
- Detention in these camps is intended to erase ethnic and religious identities under the pretext of vocational training. Forced labour is a central tactic used for this repression.

### EU Unveils Indo-Pacific Strategy

EU has **unveiled a new strategy** for boosting economic, political and defence ties in the Indo-Pacific.

#### Indo-Pacific Region

- As per EU, the region stretches from **India and China through Japan to Southeast Asia and eastward past New Zealand to the Pacific**.

- This region is **growing in importance** given its rising population and political weight, its role in global trade and security and its impact on climate change.

**Aim Of The Strategy**

- Strengthen and expand economic relations
- Reinforce the respect of international trade rules
- Help partners fight and adapt to climate change and biodiversity loss.
- Boost cooperation on health care so least-developed countries can prepare better

**Seven priority areas identified** for a sustainable and inclusive socio-economic recovery -- Sustainable and inclusive prosperity; Green transition; Ocean governance; Digital governance and partnerships; Connectivity; Security and Defence; and Human security.

**EU’s New ‘Vaccine Passport’ Programme**

- The **EU Digital Covid Certificate, or “Green Pass”** or Vaccine Passport as it is popularly known, has been created to restore freedom of travel for the public and remove barriers on entry placed due to the pandemic.
- European Medicines Agency (EMA) maintains a list of approved vaccines for its “vaccine passport” programme.
- The certificate can be issued if someone has:
  - ✓ been vaccinated against Covid-19
  - ✓ recently had a negative PCR test
  - ✓ recently recovered from Covid-19
- Anyone holding a certificate **should, in principle, be exempted** from testing or quarantine when crossing a border within the EU.
- The EMA list only includes four vaccines now **Vaxzevria** (Oxford-AstraZeneca), **Comirnaty** (Pfizer-BioNTech), **Spikevax** (Moderna) and **Janssen** (Johnson & Johnson).
- However, covishield has been approved by 18 countries of Europe.

**El Salvador Has Become The First Country In The World To Make Bitcoin Legal**

- El Salvador depends heavily on remittances sent by Salvadorians from abroad (making up more than 20% of the GDP). However, much of this is lost to intermediaries.
- By using Bitcoin, the amount received by more than a million low income families will increase in the equivalent of billions of dollars every year.
- Besides, Bitcoin will help increase financial inclusion in El Salvador, where 70% of the population does not have a bank account and relies on the informal economy.
- Along with **Ecuador and Panama**, **El Salvador** is currently among three nations in Latin America to have a ‘dollarized economy’.

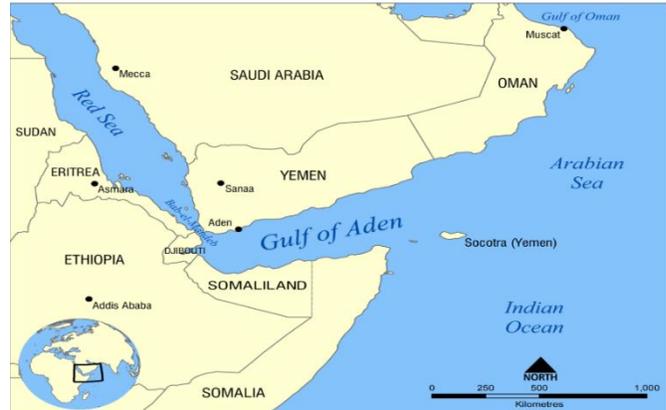


**World Giving Index 2021**

- The World Giving Index (WGI) is an annual report published by **Charities Aid Foundation**. The report is the world's largest survey of charitable endeavors from around the world. The first edition was released in 2010.
- The report looks at three aspects of giving behavior: 1.Helped a stranger 2.Donated money to a charity 3. Volunteered time to an organization.
- The most generous country in the world is **Indonesia** and **India is 14th** most charitable country.

**EUNAVFOR**

- Maiden Indian Navy - European Union Naval Force (EUNAVFOR) Exercise was held in Gulf Of Aden.
- **Gulf of Aden, also known as the Gulf of Berbera**, is a deep-water gulf between Yemen to the north, the Arabian Sea to the east, Djibouti to the west, and the Guardafui Channel, Socotra (Yemen), and Somalia to the south.
- In the northwest, it connects with the Red Sea through the **Bab-el-Mandeb strait**, and it connects with the Arabian Sea to the east. To the west, it narrows into the Gulf of Tadjoura in Djibouti.



**PAKAFUZ Proposal And INSTC**

- India might be compelled to recalibrate its strategy if plans for a **Pakistan-Afghanistan-Uzbekistan (PAKAFUZ) railway** make its **International North-South Transport Corridor (INSTC)** redundant with respect to its Central Asian outreach efforts.
- PAKAFUZ proposal is a proposed 573km railway project that will link Uzbekistan’s capital Tashkent through Afghanistan capital Kabul and Pakistan’s northern city of Peshawar. This is expected to affect India as it was planning to expand its influence in Afghanistan through Iran's Chabahar port.
- The **biggest worry for India now is that Afghanistan will now be much less reliant on INSTC for access to the Indian Ocean** due to its decision to participate in PAKAFUZ.

**About INSTC**

- It is a 7,200-km-long multi-mode network of ship, rail, and road route for moving freight.
- Regions involved: India, Iran, Afghanistan, Azerbaijan, Russia, Central Asia and Europe.

**Turkey Quits Istanbul Convention On Violence Against Women**

- Turkey said the convention demeans traditional family structure, promotes divorces and encourages acceptance of LGBTQ in the society. Besides, it said, it has enough local laws to protect women’s rights.
- It is also called as the **Council of Europe Convention on preventing and combating violence against women and domestic violence**. The treaty is the **world’s first binding instrument** to prevent and tackle violence against women.
- It is the most comprehensive legal framework that exists to tackle violence against women and girls, covering domestic violence, rape, sexual assault, female genital mutilation (FGM), so-called honour based violence, and forced marriage.

- The Convention was adopted by the Council of Europe Committee of Ministers in April 2011 and it sets minimum standards for governments to meet when tackling violence against women.

### United Nations Members Failed To Agree On A Peacekeeping Budget

- It could lead to "a freeze on all missions" should a deal not soon materialize. The roadblock stems from *China and African countries* making multiple last-minute requests.
- While decisions about establishing, maintaining or expanding a peacekeeping operation are taken by the **Security Council**, the *financing of UN Peacekeeping operations* is the collective responsibility of all UN Member States.
- Every Member State is legally obligated to pay their respective share towards peacekeeping. This is in accordance with the provisions of **Article 17 of the Charter of United Nations**.
- Peacekeeping forces are contributed by member states on a voluntary basis.

**United Nations Peacekeeping is a joint effort between the Department of Peace Operations and the Department of Operational Support.** Every peacekeeping mission is authorized by the Security Council.

UN peacekeepers (often referred to as **Blue Berets** or **Blue Helmets** because of their light blue berets or helmets) can include soldiers, police officers, and civilian personnel.

### UN Peacekeeping and India

- There are more than 6,700 troops and police from India who have been deployed to UN peacekeeping missions, the **fourth highest** amongst troop-contributing countries.
- More than 200,000 Indians have served in 49 of the 71 UN peacekeeping missions established around the world since 1948.
- India has a long tradition of sending women on UN peacekeeping missions. In 2007, India became the **first country to deploy an all-women contingent** to a UN peacekeeping mission.

### UNITE AWARE

S. Jaishankar has announced the rollout of a technological platform in partnership with the UN- **UNITE Aware** (To help enhance the safety of UN peacekeepers)

### UNITE AWARE

- UNITE AWARE is a mobile tech platform developed by India to provide terrain-related information to the UN peacekeepers so as to ensure their safety.
- It is being developed in partnership with the UN Department of Peacekeeping Operations and the Department of Operational Support
- Deployment: The platform will be deployed initially in four UN Peacekeeping Missions: **MINUSMA (Mali), UNMISS (South Sudan), UNFICYP (Cyprus) and AMISOM (Somalia)**.

### UN Assistance Mission in Afghanistan (UNAMA)

- UN Assistance Mission in Afghanistan (UNAMA) expired in September 2021.
- UNAMA is a political mission that was established in 2002 (with UNSC resolution 1401) to help rebuild the country after the 2001 US-led invasion.
- Vision: A stable and prosperous Afghanistan that lives at peace with itself and its neighbours, where the Afghan peoples' human rights are upheld and basic services are available to all.

- Its original mandate was to support the implementation of **Bonn Agreement** (December 2001). Bonn Agreement was the initial series of agreements passed in 2001 and intended to recreate the State of Afghanistan following the U.S. invasion of Afghanistan in response to the September 11, 2001, terrorist attacks.

### WHO's Emergency Use List (EUL)

- The WHO Emergency Use Listing Procedure (EUL) is a risk-based procedure for assessing and listing unlicensed vaccines, therapeutics and in vitro diagnostics with the ultimate aim of expediting the availability of these products to people affected by a public health emergency.
- A WHO pre-qualification, or Emergency Use Listing (EUL), is necessary for a vaccine company to supply vaccines to global facilities such as **COVAX or international procurement**.

### Global Survey on Digital and Sustainable Trade Facilitation

- Released by the United Nation's Economic and Social Commission for Asia Pacific.
- It is done every two years and aims to review the progress of trade facilitation reforms in their respective member states.
- The survey has been carried out since 2015 jointly by the five United Nations Regional Commissions (UNRCs) — ECA, ECE, ECLAC, ESCAP and ESCWA.
- **The 2021 survey includes an assessment of 58 trade facilitation measures covered by the WTO's Trade Facilitation Agreement.**

### Pak Finalises Bill To Grant New Status To Gilgit-Baltistan

Pakistani authorities have finalized a law to award provisional provincial status to strategically located Gilgit-Baltistan.

#### Gilgit Baltistan location

- It Borders China in the North, Afghanistan in the west and Kashmir in the south east
- It is situated in the trans-Himalayan region on the north-western corner of the Kashmir Valley.
- Gilgit Baltistan is divided into three administrative divisions and 10 districts.
- The region was a part of the erstwhile princely state of Jammu and Kashmir, but has been under Pakistan's control since 4th November, 1947, following the invasion of Kashmir by tribal militias and the Pakistan army.
- The China Pakistan Economic Corridor passes through this region.



### Detention Centres For Foreigners

Assam's detention centres for foreigners and those declared such by specific tribunals have been renamed as **transit camps**. Detention centres were set up in Assam after the Union government authorized state to do so under the provisions of the **Foreigners' Act, 1946 and the Foreigners Order, 1948**.

#### What Are Detention Centres

- These are **meant to house illegal immigrants after they are declared 'foreigners' by Tribunals/courts.**

- Detention centres are also set up to accommodate foreign convicts in criminal cases who have completed their jail terms and await deportation.
- Under Section 3(2)(c) of **Foreigners Act, 1946**, the Central Government has powers to deport foreign nationals staying illegally in the country.
- These powers have also been **entrusted to State governments under Article 258(1)** of the Constitution and under **Article 239(1) for administrators of UTs**.
- The concept of 'burden of proof' lies with the person, and not with the authorities. Assam has six detention centres, highest among the States.

### Greater Malé Connectivity Project (GMCP)

- India and Maldives have signed \$500-million for Greater Malé Connectivity Project (GMCP).
- It is the largest infrastructure project ever done by India in the Maldives. It is also the biggest infrastructure project in the Maldives overall.
- This project was funded by India in a grant of \$100 million, with a line of credit of \$400 million.
- It involves construction of 6.74-km-long bridge and causeway link that will connect Maldives capital Malé with the neighbouring islands of Villingli, Gulhifalhu and Thilafushi.

### What is line of credit?

The Line of Credit is not a grant but a 'soft loan' provided on concessional interest rates to developing countries, which has to be repaid by the borrowing government.

### New Chancellor of Germany

- **Olaf Scholz** has been sworn in as Germany's new chancellor, ending 16 years of conservative rule under Angela Merkel.
- Scholz, who served as vice chancellor and finance minister in coalition with Merkel, got a clear majority of 395 votes from lawmakers in the Bundestag - lower house of Parliament.
- The chancellor of Germany is the **head of federal government of Germany**. He/she is also the commander in chief of the German Armed Forces during wartime.
- The chancellor is the chief executive of the Federal Cabinet and heads the executive branch.
- He/she is **elected by the Bundestag** (the legislative branch of the German government based in Berlin) on the proposal of the federal President after each Parliamentary election.

### New Caledonia Choose To Stay Part Of France

In a referendum, voters in the **French island territory** of New Caledonia chose to remain part of France. Voters rejected independence overwhelmingly, with 97% electing to stay part of France.

- New Caledonia was **colonised by France in the mid-19th century** and won greater autonomy and the right to hold up to three referendums on its political status under **Noumea Accord**, signed between French and local leaders in 1998.
- The agreement followed a 1988 peace deal (**Matignon Accord**) that ended decades of conflict between the **Indigenous Kanak** people and the descendants of European settlers known as the **Caldoches**.



- This vote was the **third of three independence referendums** promised by France.

### **New Caledonia profile**

- Kanaks represent around 39% of the population, while Europeans, most of whom were born in the territory, make up about 27%. Most of the remainder are from other Pacific islands, which are of mixed heritage, called Caledonians.
- They vote in French elections and have French nationality.
- New Caledonia is rich in resources and accounts for around 10% of the **world's nickel reserve**.

### **Pillar of Shame**

- Pillar of Shame - a **famous statue at the University of Hong Kong** - marking the **Tiananmen Square massacre** was removed recently.
- The sculpture stood as a memorial to the victims of the **1989 Tiananmen Square massacre**, in which the Chinese military crushed protests led by college students in Beijing with deadly force.
- Its removal comes as Beijing has increasingly been cracking down on political dissent in Hong Kong.

### **Sri Lanka 'Banking On' \$1 Bn India Swap Deal**

- Sri Lanka is "banking on" a \$1 billion currency swap from India to meet its debt repayment obligations this year and tide over the current economic crisis.
- Sri Lanka is expecting a \$400 million swap from the Reserve Bank of India in a couple of months through the **SAARC facility**.

**Currency swap** is an arrangement between two countries to involve in trading in their own local currencies. As per the arrangements, both countries pay for import and export trade at the predetermined rates of exchange, without bringing in third country currency like the US Dollar.

**RBI's Framework for Swap Facilities for SAARC:** The SAARC currency swap facility came into operation on 15th Nov, 2012. The RBI can offer a swap arrangement within the **overall corpus of USD 2 billion**. The swap draws can be made in **US dollar, euro or Indian rupee**. The framework provides certain concessions for swap draws in Indian rupee. The facility will be available to all SAARC member countries, subject to their signing the bilateral swap agreements.

### **Food And Forex Crisis In Sri Lanka**

- Sri Lankan President has **declared a state of Economic Emergency** for the **Supply of Essential Foods**. It has now been **passed by the Sri Lankan Parliament**.
- This step was taken to control food prices and prevent hoarding amid shortages of some staples
- Sri Lanka depends **heavily on imports** to meet even its basic food supplies, such as sugar, dairy products, wheat, and medical supplies.
- Sri Lanka does not have a **universal public distribution system** or **ration cards**.
- The emergency law enables authorities to detain people without warrants, seize property, enter and search any premises, suspend laws and issue orders that cannot be questioned in court.

**Factors Responsible for Current Economic Crisis**

- Covid19: Tourism industry which represents over **10% of the country's GDP** and **brings foreign exchange reserve** was severely hit. It also led to production shortages and logistical bottlenecks.
- With the supply of **foreign exchange drying up**, the value of the Sri Lankan rupee started **depreciating** which made the imports costlier.
- The island nation imports a large part of its food supplies. So, the **price of food items has risen** in tandem with the depreciating rupee.
- Sri Lanka wants to become the **first country in the world with an agriculture sector that is 100% organic**. Govt has banned the use of chemical fertilisers in farming. This has further aggravated the crisis by dampening agricultural production.
- Speculators are causing the rise in food prices by hoarding essential supplies.

**Sri Lanka Receives Nano Liquid Fertiliser From India**

- Sri Lanka has received the **first consignment** of 3.1 million litres high quality non-harmful Nano Nitrogen liquid fertilizer from India. This will help Sri Lanka's Eastern province in the cultivation of **maize and paddy**.
- Earlier, the Sri Lankan govt had decided to impose a total ban on agrochemicals in order to make Sri Lankan farming **100% organic**.

**About Nano Urea (Liquid) Fertilizer**

- **IFFCO** developed nano-technology based Nano Urea (Liquid) fertiliser to address the imbalanced and excessive use of **conventional Urea**.
- It has been developed **indigenously**, for the first time in the world at IFFCO - Nano Biotechnology Research Centre (**NBRC**) Kalol, Gujarat.
- Cheaper than conventional urea, the new product is also expected to reduce environmental pollution caused by the granular form.
- It should be noted that the Urea forms **82% of the total nitrogenous fertilisers consumed** in India, with an annual consumption of **33.6 million tonnes in 2019-20**.

**First-Ever 2+2 Ministerial Dialogue Between India & Australia**

- India hosted the **first-ever 2+2 Ministerial Dialogue with Australia** in New Delhi.
- "2+2 ministerial dialogue" is the highest-level institutional mechanism involving **foreign and defence ministers** of two countries.

India holds talk in 2+2 format with **4 countries: US, Japan, Australia and Russia**.

In April 2021, India and Russia announced the establishment of a new 2+2 dialogue.

**Background**

- This dialogue is the outcome of India-Australia leaders' virtual summit in June 2020. In this summit, both sides decided to elevate bilateral relations to a **comprehensive strategic partnership**.
- As per agreement, meeting in a '2+2' format is to discuss **strategic issues** at least **every two years**.
- Australia expressed its intention to **invite India** to participate in the **Talisman Sabre exercise** and Continue to **participate in India's Malabar naval exercise** along with the US and Japan.

**Durand Line**

Taliban has said that **Afghans oppose the fence erected by Pakistan along the Durand Line**.

## VAJIRAM & RAVI

- Established in the **Hindu Kush** in 1893, it runs through the **tribal lands between Afghanistan and British India**. In modern times it marked the **border between Afghanistan and Pakistan**.
- It is a legacy of **19<sup>th</sup> century Great Game** between the Russian and British empires in which *Afghanistan was used as a buffer by the British against a feared Russian expansionism to its east*.
- The agreement demarcating what became known as the **Durand Line** was signed between the **British civil servant Sir Henry Mortimer Durand and Amir Abdur Rahman**, then the **Afghan ruler in 1893**.
- It also put on the British side the strategic **Khyber Pass**.
  - It is a mountain pass in the **Hindu Kush**, on the **border between Pakistan and Afghanistan**.
  - The pass was for long of great commercial and strategic importance, the route by which successive invaders entered India, and was garrisoned by the British intermittently between 1839 and 1947.
- The line cut through **Pashtun tribal areas**, leaving villages, families, and land divided between the two “spheres of influence”.
- With independence in 1947, **Pakistan inherited the Durand Line**, and with it also the **Pashtun rejection of the line**, and Afghanistan’s refusal to recognise it. When the **Taliban seized power in Kabul the first time**, they rejected the Durand Line. They also strengthened Pashtun identity with an Islamic radicalism to produce the Tehreek-e-Taliban Pakistan, whose terrorist attacks since 2007 left the country shaken.

### Barbados - The World’s Newest Republic

- Barbados has become the **world’s newest republic**. The Caribbean Island nation removed Queen Elizabeth II as the head of the state in a ceremony attended by Prince Charles.
- Dame Sandra Prunella Mason was selected to become the first President of Barbados.

### History Of Barbados As A British Colony

- For past 400 years, Barbados was the British colony. Barbados first became an English colony when a ship arrived at the Caribbean in 1625.
- It was said to have been made a ‘slave society’ by the British.
- On November 30, 1966, Barbados gained its independence. However, the country then **did not adopt the republican status** and continued the monarchy with Queen Elizabeth II as the head of the state.

### Iran To Allow Nuclear Surveillance By IAEA

Iran has agreed to let **International Atomic Energy Agency (IAEA) service monitoring cameras at Iranian nuclear sites**.

### Joint Comprehensive Plan of Action (JCPOA)

- The JCPOA, commonly known as **Iran’s Nuclear Deal**, was signed in July 2015. It imposes **restrictions on Iran’s civilian nuclear enrichment program**.
- This deal was **negotiated by P5+1** - China, France, Russia, UK, US and Germany.
- The basic gist of deal was that the **sanctions would be lifted** in exchange for **Iran agreeing to several serious restrictions on its nuclear development**.

### US’ Withdrawal From The Deal And Re-Imposed Sanctions

- In May 2018, US President Trump **announced to withdraw from Iran nuclear deal**.
- Reasons given for the withdrawal were:
  - ✓ It **failed to stop the development of ballistic missiles** by Iran;

- ✓ The **deal had handed Iran** a US\$100bn **windfall** from **assets frozen overseas** and was able to resume selling oil on **international markets** using **global financial system** for trade. This money is used by Iran to fund for weapons, terror, and oppression across the Middle East.
- **Sanctions were reimposed** in November 2018 by Trump on Iran following the withdrawal of USA from the deal. UK, Germany and France opposed the sanctions and set up an **alternative payment mechanism** aimed at helping international companies trade with Iran without facing US penalties.
- Tehran responded to the U.S. withdrawal and reimposition of sanctions **by violating many of those restrictions**.

#### **International Atomic Energy Agency (IAEA)**

- It is an autonomous intergovernmental organisation, which act as an **international centre for cooperation in nuclear field**.
- It is widely known as the world's "**Atoms for Peace and Development**" organization within UN family.
- The Agency works with its Member States and multiple partners worldwide to promote the safe, secure and peaceful use of nuclear technologies.
- It was **created in 1957** in response to the deep fears and expectations generated by the discoveries and diverse uses of nuclear technology.
- **Headquarter** – Vienna, Austria

#### **India & Bangladesh: Recent Developments**

High Commission of India celebrated the 57th **Indian Technical and Economic Cooperation (ITEC)** day in Dhaka.

- ITEC is a flagship programme of the Government of India. It was established in 1964.
- It is a training programme which offers benefit of India's **development experience** and appropriate **technologies** to the developing countries.
- Every year, more than 10,000 training slots are offered to 161 partner countries.

A new Passenger Terminal (I) Building was inaugurated at the Integrated Check Post, Petrapole.

- It will give a major boost to **border infrastructure** and further strengthen connectivity
- ICP Petrapole is the **largest land port in India** and 9th largest land port in South Asia.

India delivered **2 Mobile Oxygen Plants** to Bangladesh to fight COVID 19 pandemic.

- These plants had been developed and manufactured by **DRDO**

#### **Bangladesh Signs UN Deal To Help Refugees On Island**

- UN and Bangladesh have signed an MoU to work together in aiding protection and management of **Rohingya refugees**.
- These refugees have been relocated on an island, known as **Bhasan Char**, in the Bay of Bengal from cramped camps near the border with Myanmar.
- The agreement allows for Close cooperation on **services and activities** to the benefit of the increasing numbers of Rohingya refugees living on the island.
- It covers key areas of protection, education, skills-training, livelihoods and health. This will help support the refugees to lead decent lives on the island and better prepare them for sustainable return to Myanmar in the future.

### Bhasan Char

- It is located near the mouth of the river Meghna where it flows into the Bay of Bengal.
- It surfaced only in 2006 from the sediment deposited by the river.
- Located close to the much larger Sandwip, Bhasan Char spans 40 sq km.

### Tamil Nadu-Denmark Energy Island Project

- Tamil Nadu is planning to set up of an **Energy Island in Gulf of Mannar** with the help of Denmark. The Island may have a potential to generate **4-10 gigawatts** of electricity.
  - ✓ Gulf of Mannar lies between the west coast of Sri Lanka and the south-eastern tip of India.
- If it materialises, the project will be the **first offshore floating wind park in India**.
- This project is part of the **Green Strategic Partnership** that was signed between PM Modi and his Danish counterpart during a virtual summit in September 2020.

### Bhoodan Grove Plaque Unveiled In Jerusalem Forest

External Affairs Minister S. Jaishankar unveiled “Bhoodan Grove” plaque at Jerusalem Forest in Israel.

#### Bhoodan Grove

- After independence, Indian leaders were exploring ways to implement the socialist ideals of **Sarvodaya movement** namely, ‘Bhoodan and Gramdan’.
- Basically, they wanted to keep Mahatma Gandhi’s concept of the village as the basic unit of development.
- Hence, even before the establishment of full diplomatic relation between India and Israel, these leaders made several visits to Israel.
- The objectives of such visits were to study the social structure of different forms of Israel’s communal and cooperative institutions -- **‘Kibbutzim and Moshavim’**.
- Jayaprakash Narayan, the leader of the Sarvodaya movement, visited Israel in September **1958** on a nine-day visit as the guest of Histadrut, the Israel Federation of Labour.
- Narayan’s visit was followed by that of a 27-member Sarvodaya team in 1960.
- On their way back to India, they planted the **“Bhoodan Grove” in Jerusalem Forest on May 22, 1960**.

### Africa’s Sahel Crisis

- While speaking at a UN Security Council meeting on **G5 Sahel force**, the UN peacekeeping chief has warned that the crisis in Africa’s Sahel region remains volatile.
- The G5 Sahel force set up by **five African nations- *Chad, Mali, Burkina Faso, Niger and Mauritania***- in 2017 to fight the growing terrorist threat in the vast Sahel region.

#### What is Sahel Region

- It is semi arid region of western and north-central Africa extending from Senegal eastward to Sudan.
- It forms a transitional zone between the **arid Sahara (desert) to the north and the belt of humid savannas to the south**. The region is witnessing insurgency by armed militants.
- Thousands of civilians from Burkina Faso, Chad,



Mali, Mauritania, Niger and Nigeria are killed every year in bloody inter-communal violence.

- Many more are caught up in deadly overlapping conflicts that are spinning out of control.

#### First Strategic Dialogue Between India And Kyrgyzstan

- Recently, India and Kyrgyzstan held their **first strategic dialogue**. The dialogue is significant in view of **India's efforts to step up cooperation with the Central Asian** states on regional security.
- Both the countries agreed to enhance security and defence cooperation to address common threats and challenges faced by both countries arising out of the situation in Afghanistan.
- Both sides decided to take steps to enhance **bilateral security cooperation** between relevant bodies, including in the fields of counter-terrorism, combating radicalisation, narcotics control and defence cooperation.

## SUMMITS AND ORGANISATION

### 5<sup>th</sup> Indian Ocean Conference

- External Affairs Minister S Jaishankar addressed the **fifth Indian Ocean Conference** held at **Abu Dhabi, UAE**.
- **Theme** - "Ecology, Economy, Epidemic"
- This year the conference dealt with the challenges faced by the Indian ocean due to the effects of the pandemic, economic decline and climate change.
- The event was organised by the **India foundation** and was **chaired by Sri Lankan President**.

### 8<sup>th</sup> Indian Ocean Dialogue

- Recently, India hosted the 8th Edition of the Indian Ocean Dialogue virtually.
- **Theme** - *Post Pandemic Indian Ocean: Leveraging Digital Technologies for Health, Education, Development and Trade in IORA Member States*
- It was organised with the assistance of the Indian Council for World Affairs and Indian Ocean Rim Association (IORA) Secretariat.
- It was aimed at triggering **cooperation among IORA Member States** in the field of digital technologies while ensuring digital inclusion and bridging the digital divide.
- The Indian Ocean Dialogue is a premier track 1.5 forum for open and free flowing dialogue among various stakeholders.
- India has hosted the 1st and the 6th Edition of the Indian Ocean Dialogue in Kerala and New Delhi in September 2014 and December 2019 respectively.

#### About Indian Ocean Rim Association (IORA)

- The IORA was formed in March 1997. Currently, it has 23 member states.
- It was previously named the Indian Ocean Rim Initiative.
- It was also called Indian Ocean Rim Association for Regional Cooperation or the IOR-ARC for short.
- It is a regional tripartite forum that gathers **government representatives, academia, and business leaders** for encouraging cooperation and greater interaction between them.
- The organisation is founded upon the values of open regionalism for boosting economic cooperation especially on the realms of trade facilitation, investment, the region's social development and promotion.

### 7th Edition Of Indian Ocean Naval Symposium (IONS) Held At Reunion Island

- Launched in February 2008, IONS is a voluntary initiative that seeks to increase maritime co-operation among navies of the littoral states of the Indian Ocean Region,
- It provides a forum for discussion of regional maritime issues and promotes friendly relationships among member nations.



- IONS includes **24 nations** that permanently hold territory that abuts or lies within the Indian Ocean, and **8 observer nations**. India and Pakistan are members while China and Russia are observer countries.

### AUKUS Grouping

- **United States, UK, and Australia announced a new trilateral defence deal for Indo-Pacific.**
- Under this deal, USA and Britain will help Australia deploy **nuclear-powered** submarines in Pacific region.

### Key Highlights Of The Partnership

- The first major initiative of AUKUS would be to **deliver a nuclear-powered submarine fleet for Australia**. However, the **new submarines will not be armed with nuclear weapons**. This is because Australia is a **signatory to Nuclear Non-proliferation Treaty (NPT)** which bans it from acquiring or deploying nuclear weapons.
- Under the deal, the three nations have agreed to
  - ✓ Enhance the development of joint capabilities and **technology sharing**
  - ✓ Foster deeper integration of security and defence-related science, technology, industrial bases and supply chains.

### Significance

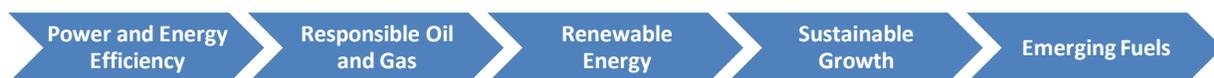
- US has **only shared** nuclear submarine technology **once** before in 1958 with Great Britain. This will be a partnership where three countries will work together to **deliver a safer and more secure Indo-Pacific Region**.
- **Australia has never had nuclear-powered submarines**. Hence, this step will give **Australia naval heft in the Pacific**, where China has been particularly aggressive.
- Australia is now set to join **an elite group of only six countries** – India, US, UK, France, Russia and China – that operate nuclear-powered submarines.
- France is not happy with the deal and has termed this deal a **“stab in the back”**. Australia had signed a contract to buy 12 Attack-class submarines from France in 2016. The first submarine was expected to be operational around 2034. As a result of the current deal, **Australia will have to ditch the contract**.

### Five Eyes Alliance

- “Five Eyes” group of nations is a global alliance on intelligence issues. It was originally an intelligence-sharing agreement between the United States and the UK aimed at decrypting Soviet Russian intelligence during cold war era. The alliance was created during the Cold War (1946-1991).
- By the late 1950s, Canada, Australia, and New Zealand had also joined the Alliance.
- The intelligence-sharing agreement between these five countries has only strengthened over time, as it has extended to surveillance of online activity.

### Strategic Clean Energy Partnership (SCEP)

SCEP organizes **inter-governmental engagement across five pillars of cooperation:**



### Developments in SCEP

- Recently the **revamped U.S.-India Strategic Clean Energy Partnership (SCEP)** was launched by the addition of a 5th Pillar on **Emerging Fuels**.
- A new India-US Task Force on Biofuels

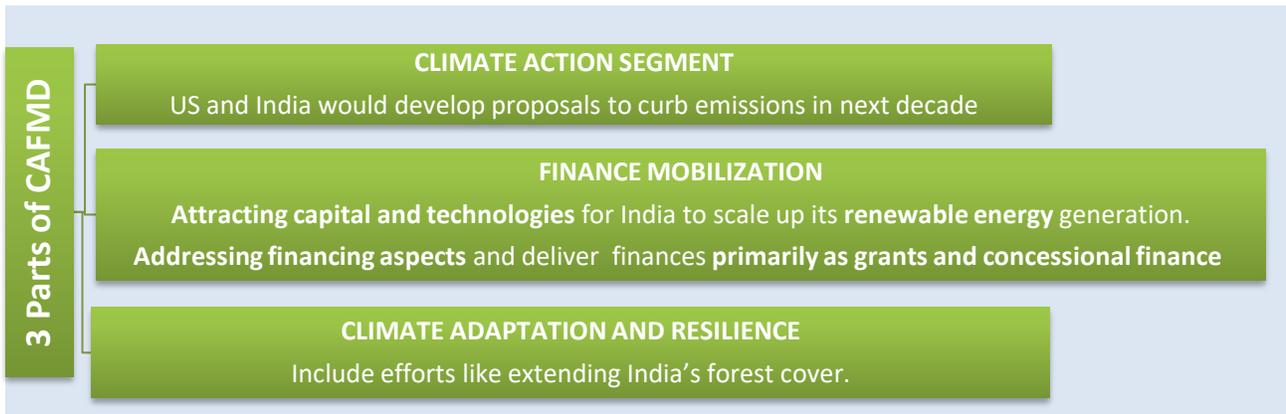
- Both sides will strengthen the electric grid in India
- India-US Low Emissions Gas Task Force - to support India’s vision of **gas-based economy**.
- Institutionalization of India Energy Modeling Forum

**What does the recent partnership mean for India?**

- The current partnership sets clear domestic targets on greenhouse gas emissions and renewable energy deployment for both countries.
- In its new nationally determined contribution, the United States has set an economy-wide target of reducing its **net greenhouse gas emissions by 50-52% below 2005 levels in 2030**.
- On the other hand, **India has set a target of installing 450 GW of renewable energy by 2030**.

**Climate Action And Finance Mobilization Dialogue (CAFMD)**

- India and USA launched the “**Climate Action and Finance Mobilization Dialogue (CAFMD)**”.
- CAFMD is one of the two tracks of **India-U.S. Climate and Clean Energy Agenda 2030** partnership launched at the Leaders' Summit on Climate in April 2021.
  - ✓ Revamped US-India **Strategic Clean Energy Partnership (SCEP)** was the first track.



**About India-US Climate and Clean Energy Agenda 2030 Partnership**

- The partnership aims to provide **financial and technological support** to India to meet its Paris Agreement goals on transitioning to renewable energy by 2030.
- It will proceed along **2 main tracks**



**India Assumes UNSC Presidency**

- India has assumed the Presidency of United Nations Security Council (UNSC).
- India took over the presidency from France.
- It will be **country’s first presidency during its 2021-22 tenure as a non-permanent member** of the UNSC.
- India began its two-year tenure as a non-permanent member of the UNSC in January 2021.
- This is India’s eighth term on the UNSC.

UNSC is composed of 15 members, 5 permanent and 10 non-permanent.

- Five permanent members: China, France, the Russian Federation, the United Kingdom, and the United States.

- Ten non-permanent members: Elected for two-year terms by the General Assembly.
- Each year, the General Assembly elects five non-permanent members (out of ten in total) for a two-year term. The ten non-permanent seats are distributed on a regional basis.
- The council's presidency is a capacity that rotates every month among its 15 members.

### India's 5-Point Agenda To Enhance Maritime Cooperation

PM Modi has outlined a five-point framework for maritime security debate at UNSC.

- Removal of barriers to legitimate maritime trade.
- Resolution of maritime disputes peacefully in accordance with international law.
- Fight threats from natural disasters, non-state actors.
- Conservation of marine resources.
- Promoting responsible maritime connectivity.

### UN Security Council Endorses Secretary General Guterres For Second Term

- The United Nations Security Council has endorsed Secretary-General Antonio Guterres for a second five-year term- from 1 January 2022 to 31 December 2026.
- The UN Charter describes the Secretary-General as "chief administrative officer" of the Organization, who shall act in that capacity and perform "such other functions as are entrusted" to them by Security Council, General Assembly, Economic and Social Council and other United Nations organs.
- The Charter also empowers the Secretary-General to bring to the attention of the Security Council any matter which in their opinion may threaten the maintenance of international peace and security.
- The Office also looks into UN Peace keeping Missions and Mediation.

#### Appointment

- Under UN Charter, Secretary-General is appointed by **General Assembly upon recommendation of Security Council**.
- Each Secretary-General has the option of a second term if they can garner enough support from Member states.
- Guterres was elected after a reformed selection process that included a public informal dialogue session in the General Assembly, involving civil society representatives, aimed at ensuring transparency and inclusivity.

### Membership In 6 Different Organs Of The UN Varies

- **General Assembly:** Consist of **all the Members** of the United Nations. The President of the General Assembly is elected each year by assembly to serve a one-year
- **Security Council:** Consist of **15 Members** of the UN; there are **5 permanent members** and **10 non-permanent members**, 5 of which are elected each year by the General Assembly for a **two-year term**
- **Economic and Social Council:** Consist of **54 Members** of the UN elected by the General Assembly; **18 Members are elected each year for a three-year term**.
- **ICJ:** According to the Statute of ICJ, it is composed of **15 "independent judges**, elected regardless of their nationality from among persons of high moral character, who possess the qualifications required in their respective countries for appointment to the highest judicial offices, or are juris-consults of recognized competence in international law"; **five members are elected every three years for nine year terms**. The General Assembly and Security Council independently elect the judges and candidates must obtain an absolute majority in both organs

- **UN Secretariat:** Consisting of staff representing all nationalities working in duty stations all over the world, carries out the day-to-day work of the Organization. The Secretariat services the other principal organs of the United Nations and administers the programmes and policies established by them
- **Trusteeship Council:** Made up of the **5 permanent members of the Security Council** -- China, France, the Russia, UK, and US. The aims of Trusteeship System have been fulfilled to the extent that all Trust Territories have attained self-government or independence, either as separate States or by joining neighbouring independent countries.

### United Nations Convention on Law of the Sea

- India-led UN Security Council session recently highlighted the primacy of the UNCLOS.
- It replaced the **four Geneva Conventions** of April, 1958, which respectively concerned the territorial sea and the contiguous zone, the continental shelf, the high seas, fishing and conservation of living resources on the high seas.
- United Nations Convention on the Law of the Sea (UNCLOS) 1982, **also known as Law of the Sea** divides marine areas into **five main zones** namely- **Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) and High Seas**.
- UNCLOS is the **only international convention** which stipulates a framework for state jurisdiction in maritime spaces. It provides a **different legal status to different maritime zones**.
- It created three new institutions - The International Tribunal for the Law of the Sea, The International Seabed Authority, The Commission on the Limits of the Continental Shelf.

**UNCLOS**

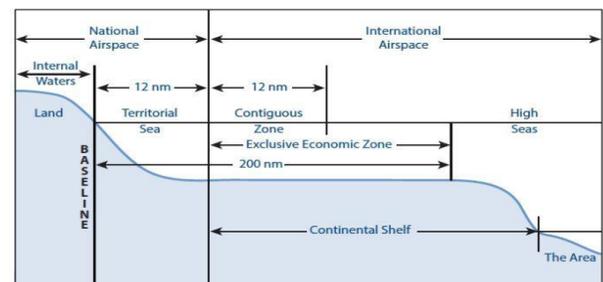
Name: United Nations Convention on the Law of the Sea  
(Also called the Law of the Sea Treaty)

Opened for signature: 1982

Entered into force: 1994

Sector: Guidelines for the use of the world's oceans and marine resources

Has India ratified UNCLOS? Yes



### India Re-elected To International Maritime Organisation Council

- India has been re-elected to the International Maritime Organisation (IMO) Council **for the 2022-23 biennium**. The elections were held during 32<sup>nd</sup> IMO's Assembly in London.
- India's election falls under the **Category of 10 states** with "*the largest interest in international seaborne trade*". The other 9 countries are: Australia, Brazil, Canada, France, Germany, the Netherlands, Spain, Sweden and the United Arab Emirates (UAE).

### Works of IMO Council

- The Council is the **executive organ of IMO**. It is responsible, under the Assembly, for supervising the work of the organisation.
- Between sessions of the Assembly, the Council performs the functions of the Assembly, except that of making recommendations to governments on maritime safety and pollution prevention.

### About IMO

- It is a **specialized agency of the United Nations**. It is **headquartered at London, UK**.
- The IMO's governing body is the Assembly which meets every two years, with the **first meeting held in 1959**.
- It is responsible for measures to improve the safety and security of international shipping and to prevent

marine pollution from ships.

- It also oversees every aspect of worldwide shipping regulations, including legal issues and shipping efficiency.

### UNGA Grants Observer Status on Solar Alliance

**International Solar Alliance (ISA)** has got an ‘**observer**’ status in the United Nations General Assembly (UNGA).

#### United Nations Membership

- UN Charter, Chapter II, **Articles 3-6 concern Membership** in the UN. **Only states can be members** of the United Nations.
- Membership of the principal organs is determined by the Charter of the UN and the Statute of the International Court of Justice (ICJ). There are 6 principal organs of the UN (established under the UN Charter).

#### Permanent Observer

- The status of a Permanent Observer is based purely on practice, and there are **no provisions** for it in the United Nations Charter. The practice dates from 1946, when the Secretary-General accepted the designation of the Swiss Government as a Permanent Observer to the UN.
- Permanent Observers have free access to most meetings and relevant documentation.
- Non-Member States of the UN, which are members of one or more specialized agencies, can apply for the status of Permanent Observer.
- Non-Member States having received a standing invitation to participate as Observers in the sessions and the work of the General Assembly are:



#### Granting Observer Status in General Assembly

- UNGA has granted observer status to international organizations, entities, and non-member states. This is to enable them to participate in the work of the United Nations General Assembly, though with limitations.
- The General Assembly determines the privileges it will grant to each observer. E.g., the EU was, in 2011, granted the right to speak in debates, to submit proposals and amendments, the right of reply etc.
- UNGA grants observer status through a resolution brought for the purpose. This practice has been incorporated to distinguish between **state** and **non-state observers**.

#### State observer

- It has already been mentioned that the **non-member states** who are members of one or more specialized agencies, can apply for permanent observer state status

#### Non-state observers

- These are international organisations, multilateral/regional blocs etc.

#### International Solar Alliance (ISA)

- ISA is a **treaty based inter-governmental organization**. It is working to create a global market system to tap the benefits of solar power and promote clean energy applications.
- HQ - **Gurugram**
- ISA was conceived as a coalition of solar-resource-rich countries (which lie either completely or partly between the **Tropic of Cancer and the Tropic of Capricorn**) to address their special energy needs.

- It was launched **jointly by India and France** at the side-lines of COP 21 (held in Paris) in 2015. The Paris Declaration had established the ISA. Currently there are 101 members, after being joined by the US.
- ISA is the nodal agency for implementing **One Sun One World One Grid (OSOWOG)**, which seeks to transfer solar power generated in one region to feed the electricity demands of others

**International Criminal Court vs International Court of Justice**

- The International Criminal Court (ICC) is an intergovernmental organization and international tribunal headquartered in **The Hague**.
- It investigates and tries people charged with serious and grave crimes such as genocide, crimes against humanity, war crimes and the crime of aggression.
- It is the first permanent international criminal court in the world.
- Its founding treaty, the **Rome Statute**, entered into force on July 1, 2002.
- The Assembly is presided over by a President and two vice-presidents, who are elected by the members for three-year terms.
- It does not have the capacity to arrest suspects and depends on member states for their cooperation.
- **India did not sign** the Rome Statute, and thus, is not a member of ICC.

FEATURE	ICJ	ICC
Year Court Established	1946	2002
Languages	English, French	English, French
UN- relationship	Official court of the U.N., commonly referred to as the World Court.	Independent. May receive case referrals from the UN Security Council. Can initiate prosecutions without UN action or referral.
Location	The Hague, The Netherlands	The Hague, The Netherlands
Jurisdiction	U.N. member-states (i.e. national governments)	Individuals

**Resolution 2593**

- The India-led United Nations Security Council (UNSC) adopted a **Resolution 2593 on Taliban**. The resolution, **sponsored by France, UK & US**, was adopted with 13 members, including India, voting in favour, **none against it**.
- Two permanent and veto-wielding members **Russia & China abstained**. The adoption of resolution is a strong signal from Security Council and international community on its expectations in respect of Afghanistan.
- Reiterates the **importance of combating terrorism in Afghanistan**, including those individuals and entities designated pursuant to **resolution 1267 (1999)**.
- Called for the **Taliban to facilitate safe passage** for people wanting to leave Afghanistan, allow humanitarians to access country, **uphold human rights** including for women & children, and **negotiated political settlement**.

**UN Meeting On Humanitarian Situation In Afghanistan**

- UN High-Level Meeting on the Humanitarian Situation in Afghanistan was held in **Geneva**.
- As per World Food Programme (WFP) estimate, **14 million people are on brink of starvation**.
- Hundreds of health facilities are at risk of closure after donors backed out.
- **3.5 million people are currently internally displaced**.
- This was probably the **first time in 20 years** that India has not pledged any money to **Taliban-ruled Afghanistan**.

- Humanitarian assistance providers must be given **unrestricted** and direct access to Afghanistan. Normalisation of regular commercial operations of **Kabul airport** which could help the **flow of relief material to Afghans**.
- **Resolution 2593** calls for **Afghan soil not to be used for terrorism**.

- The World Food Programme is the world's largest humanitarian intergovernmental organization, saving lives in emergencies and using food assistance to build a pathway to peace, stability and prosperity for people recovering from conflict, disasters and the impact of climate change.
- **Established - 1961; Headquarter - Rome; Parent Organisation - UN General Assembly**
- WFP is an executive member of the **United Nations Sustainable Development Group**, a consortium of UN entities that aims to fulfil the 17 SDG, with a priority on achieving SDG 2 for "zero hunger" by 2030.
- The World Food Programme was awarded the **Nobel Peace Prize in 2020** for its efforts to provide food assistance in areas of conflict, and to prevent the use of food as a weapon of war and conflict.

### OIC Summit On Afghanistan

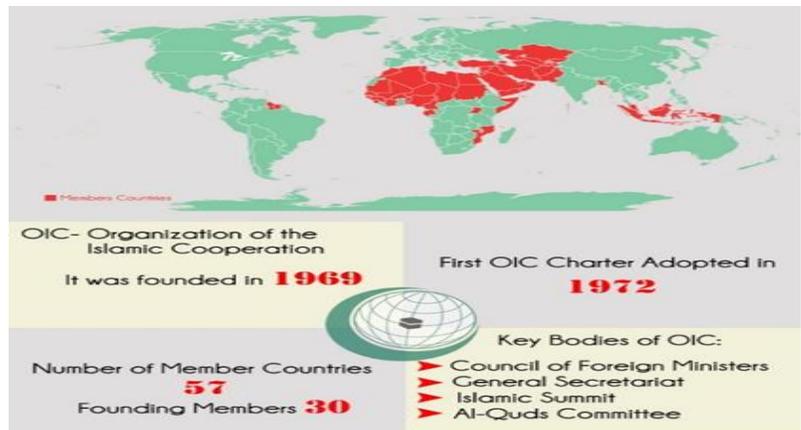
Recently, Islamabad hosted the 17<sup>th</sup> extraordinary session of Organisation of Islamic Cooperation's (OIC) Council of Foreign Ministers. It was an extraordinary conference on Afghanistan.

#### Key Highlights of The Summit

- No direct announcement of economic and humanitarian assistance
- Did not give formal recognition to new Taliban government.
- Urged to unlock financial and banking channels

#### About OIC

- OIC is the **second largest inter-governmental organization** after the United Nations.
- OIC is the collective voice of the Muslim world to ensure and safeguard their interest on economic, social, and political areas.
- It has membership of **57 states** spread over four continents.
- It has a permanent secretariat in **Jeddah, Saudi Arabia**.



- **Every member has a veto**. As a result, the organization fails to take a critical stand on serious disputes that are shaping in the middle east.
- It was Qatar that first proposed 'Observer' status for India at the OIC Foreign Ministers' meet in 2002.
- At the 45th session of the summit in 2018, Bangladesh suggested that India should be given observer status. It was vetoed by Pakistan.
- However, **India, in 2019, made its maiden appearance at the OIC summit**, as a guest of honour.

### 6<sup>th</sup> Eastern Economic Forum 2021

- **Eastern Economic Forum (EEF)**: It was established by President Vladimir Putin, in 2015.

- **Aim:** To support the **economic development of Russia's Far East**, and to **expand international cooperation in the Asia-Pacific region**.
- **What has EEF achieved till now:** Since its establishment, more than **17 different countries** have invested in the Far East. These include countries like China, Japan, South Korea, Australia, New Zealand, and Vietnam.
- **India's Engagement with Russia's Far East:** India is the **first country in the world to open a consulate in Vladivostok** (Sangam of Eurasia and Pacific).
- Indian PM was chief guest at 5th EEF (2019), **first by an Indian PM**.
- In 2019 India announced a commitment to an **"Act Far-East"** policy.
- **International Trade and commerce:** India and Russia agreed to **open a maritime route between Chennai and Vladivostok** to give impetus to cooperation between India and Russian Far East. This connectivity project along with International North-South Corridor will bring India and Russia physically closer.
- **Energy:** Indian workers are participating in major gas projects in the Amur region, from Yamal to Vladivostok and onward to Chennai.
- **Indra Exercises - Joint Tri-Services (Army, Navy, Air Force) Exercises.**

### 16<sup>th</sup> East Asia Summit

- EAS is a meeting of **18 regional leaders** for strategic dialogue and cooperation on the key political, security, and economic challenges facing the Indo-Pacific region.
- It comprises **10 member states of the ASEAN** – Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam - along with **Australia, China, Japan, India, New Zealand, the Republic of Korea, Russia and United States**.
- 16th East Asia Summit was hosted by **Brunei**. Brunei is the current chair of EAS and ASEAN.

### Key Highlights

- Reaffirmed India's focus on a free, open, and inclusive Indo-Pacific and the principle of **"ASEAN Centrality"** in the region.
- Highlighted the synergies between ASEAN Outlook on Indo-Pacific (AOIP) and India's **Indo-Pacific Oceans Initiative (IPOI)**.
- Emphasised the **importance of a resilient global value chain** and reiterated India's commitment to providing **Quad-sponsored vaccines to Indo-Pacific countries**. **Quad countries** (India, Japan, Australia, and US) are on track to help produce at least 1 billion vaccine doses in India to boost the global supply by the end of 2022.
- Recalled India's support of **USD 1 million to ASEAN Covid-19 Recovery Fund**.
- **Others:** The EAS leaders adopted three statements on **mental health, economic recovery through tourism, and sustainable recovery**, which have been co-sponsored by India.

### 47th Edition Of "Group Of Seven" G-7 Summit

- The leaders of seven nations — **U.S., Germany, U.K., France, Canada, Japan and Italy** — met in **Cornwall** in south-west England.
- **United Kingdom** holds the presidency of G7 inter-governmental political forum.
- Agenda for the summit was - **Global Action to Build Back Better**.
- Australia, India, South Korea and South Africa were invited as guest countries to this year's G7.

- India has signed off on a joint statement by G-7 and guest countries on “**open societies**” that reaffirm and encourage the values of “freedom of expression, as a freedom that safeguards democracy and helps people live free from fear and oppression”.
- The joint statement was signed by the G-7 countries, and **India, South Korea, Australia and South Africa**, with host British Prime Minister Boris Johnson calling them “**Democracies 11**” (G-7+4).
- The G7 countries signed the **Carbis Bay Declaration**, mainly aimed at preventing future pandemics. It contained many other thematic areas which are as follows:
  - A. COVID-19: Vaccines**
    - Participating leaders promised to **distribute 1 billion vaccines to poorer countries** to overcome the COVID-19 crisis. The goal is to “**vaccinate the world**” by the end of 2022.
  - B. Economy**
    - The Carbis Bay Declaration talks about **reinvigorate the economies** by advancing recovery plans that build on the **\$12 trillion of support** G7 countries have put in place during the pandemic.
  - C. Climate Change**
    - Leaders of the G7 summit affirmed they would work together toward a “**green revolution.**”
    - They agreed to **limit the rise in global temperature** to 1.5 celsius degrees and reach **net-zero carbon emissions by 2050**.
    - Additionally, they committed to protecting and conserving **at least 30% of land and oceans by 2030**.
  - D. Build Back Better for the World**
    - The participating leaders discussed the plan “**Build Back Better for the World**” Project. The aim is to compete with China's BRI.
    - The project will catalyse **infrastructure investment for low- and middle-income countries** (in Asia and Africa). The entire process will offer a value-driven, high-standard and transparent partnership with G7.
  - E. Taxes**
    - Leaders discussed the implementation of a **global minimum tax of at least 15% on multinational enterprises**.
    - This is meant to **hold the companies in check** and prevent them from using tax havens detrimental to developing countries' economies.

### India's Sherpa For G-20 Meet

- The commerce and industry minister **Piyush Goyal** has been appointed as **India's Sherpa for G20**.
- This year's G20 Summit took place under **Italian presidency**.
- **India will hold the G20 presidency** from 1st December 2022. It will convene **G20 leaders' summit in 2023 for the first time**. India will be part of the **G20 Troika** (preceding, current, and incoming G20 Presidencies) from December 1, 2021, till November 30, 2024.
- A Sherpa is a **personal representative of the leader** of a member country at G20.

### About G20

- It is an informal group of 19 countries and the **European Union**, with representatives of the **IMF** and the **World Bank**.
  - ✓ The members are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy,

Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union.

✓ Spain as a permanent, non-member invitee, also attends leader summits.

- The G20 membership comprises a mix of the world's largest advanced and emerging economies, representing about two-thirds of the world's population, 85% of global gross domestic product, 80% of global investment, and over 75% of global trade.

#### The Work Of G20 Is Divided Into Two Tracks:

- The **finance track** comprises all meetings with G20 finance ministers and central bank governors and their deputies.
- The **Sherpa track** focuses on broader issues such as political engagement, anti-corruption, development, energy, etc.
- Each G20 country is represented by its Sherpa; who plans, guides, implements, etc. on behalf of the leader of their respective country.

#### Conference Of Protectors Of Emigrants (PoE)

- The **4th edition** of the **Conference of PoE** was held on 10th September (Day on which Emigration Act, 1983 was enacted).
- PoE is responsible for *granting emigration clearance to the intending emigrants*. PoE, under the **Ministry of External Affairs**, is the authority responsible for protecting the interest of Indian workers going abroad.
- PoE is also the registering authority to issue a **Registration Certificate** to the **Recruiting Agents** for overseas manpower exporting business.

#### China Applies To Join Asia-Pacific Trade Pact

China has applied to join a key **Asia-Pacific trade pact** as it attempts to strengthen its position in the region. This pact is called the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (**CPTPP**).

#### About CPTPP

- It was **created by US to counter China's influence**. However, former President Donald Trump pulled the US out of it in 2017.
- This free trade agreement has **11 members** - Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam.

#### 21<sup>st</sup> SCO SUMMIT 2021

- The **21st summit** of the **Shanghai Cooperation Organisation (SCO)** was held in **Dushanbe, Tajikistan**.
- **Dushanbe Declaration** was issued at the end of the summit by the SCO members.
- **Iran** was admitted as a full member and **Saudi Arabia, Egypt, and Qatar** as observers.
- Proposal to **establish the SCO Counter-Terrorism Centre in Dushanbe** as a separate permanent body was discussed.
- Indian PM attended the summit virtually. It was the 4th summit that India has participated as a **full-fledged member** (since 2017).

#### About SCO

- It is a permanent intergovernmental international organisation, created in **June 2001** in Shanghai (China).
- SCO Headquarters: **Beijing, China**

- **9 Members:** Founding members included Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. Others are India, Pakistan, and Iran.
- Currently, SCO has **6 observers namely:** Afghanistan, Belarus, Mongolia, Saudi Arabia, Egypt and Qatar

### 1st In-Person Quad Summit

- Leaders of 4 countries (India, the US, Australia, and Japan) met for Quad summit in **Washington**. This was the **first-ever in-person** Quad summit.
- The summit concluded with the release of a **Joint statement** and a **factsheet**. These documents highlighted the diversified areas of cooperation under QUAD.
- The aim is to **ensure a free and open international order based on the rule of law in the Indo- Pacific**.

### India, US, UAE, And Israel Form A New Quad

- The first virtual meeting of the foreign ministers of India, Israel, the US and United Arab Emirates (UAE) took place. The meeting is described in some quarters as a **“new Quad”**.
- The new grouping is described as an **international forum for economic cooperation**.
- To generate synergies that go beyond government-level cooperation.
- **Possible areas of cooperation**
  - ✓ closer cooperation on increasing trade,
  - ✓ enhancing cooperation in maritime security and global public health,
  - ✓ joint infrastructure projects in transportation and technology.
- Earlier, there were three pillars to India’s West Asia policy

Sunni Gulf monarchies

Israel

Iran

However, with the **Abraham Accord**, the gulf between the Sunni kingdoms and Israel is being narrowed. As a result, India faces fewer challenges to a regionalist approach.

### UN Food Systems Summit 2021

- The first-ever **UN Food Systems Summit** was held during UN General Assembly in New York.
- The term “food system” refers to the constellation of activities involved in producing, processing, transporting and consuming food.
- The **Food Systems Summit** is convened as part of the **Decade of Action to achieve the Sustainable Development Goals (SDGs)** by 2030.

Originally announced on 16 October 2019 by UN Secretary-General António Guterres, the UN Food Systems Summit, including a Pre-Summit, was conceived following conversations with the joint leadership of the three Rome-based United Nations agencies – the Food and Agriculture Organization, the International Fund for Agricultural Development and the World Food Programme

### Five Action Tracks Identified

- Ensure access to safe and nutritious food for all
- Shift to sustainable consumption patterns
- Boost nature-positive production
- Advance equitable livelihoods

v) Build resilience to vulnerabilities, shocks, and stress

#### 42nd Session Of FAO Conference Held Virtually

- In this year's Conference, FAO Members will adopt the **Strategic Framework 2022-2031**. The Framework aims to support the 2030 Agenda for Sustainable Development through the transformation to MORE efficient, inclusive, resilient, and sustainable agri-food systems for **Better Production, Better Nutrition, Better Environment, and Better Life**, leaving no one behind.
- The "**Four Betters**" represent an organizing principle for how FAO intends to contribute to the Sustainable Development Goals (SDGs), particularly SDG 1 (no poverty), SDG 2 (zero hunger), and SDG 10 (reduced inequalities).

#### FAO

- It is a **specialized agency** of the United Nations that leads international efforts to defeat hunger.
- Headquarters: **Rome, Italy**.
- Founded: 16 October **1945**.
- Goal of FAO: Their goal is to achieve food security for all and make sure that people have regular access to enough high-quality food to lead active, healthy lives.

#### 18th India-ASEAN Summit

PM Modi participated in **18th India-ASEAN Summit** that was held virtually. He co-chaired the summit along with the Sultan of Brunei, the **current chair of ASEAN**.

#### About ASEAN – India Summit

- ASEAN-India Summits are held annually. It provides opportunity for India and ASEAN to engage at the highest level.
- ASEAN is India's 4th largest trading partner and India is ASEAN's 7th largest trading partner accounting for 10.2% of India's total trade.
- The year 2022 will mark the **completion of 30 years of India-ASEAN Partnership**
- ASEAN and India became **Summit-level partners in 2002**, and **Strategic partners in 2012**.

- The ASEAN was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (**Bangkok Declaration**) by the Founding Fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore and Thailand.
- Brunei joined ASEAN on 7 January 1984, followed by VietNam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999, making up what is today the ten Member States of ASEAN.
- Headquarter: **Jakarta, Indonesia**
- In 2003, ASEAN moved along the path of the European Union by agreeing to establish an ASEAN community comprising three pillars: the **ASEAN security community, the ASEAN economic community, and the ASEAN socio-cultural community**.

#### NATO Summit

- NATO Summit was held recently in Brussels. It brought together the leaders of **all 30 Allied nations**.
- The NATO countries said they "remain firmly committed to NATO's founding **Washington Treaty**, including that an attack against one Ally shall be considered an attack against us all, as enshrined in Article 5."
- It included updating Article 5 to include major cyberattacks, which have become a significant and growing concern.

#### About NATO

- It is an **intergovernmental military alliance** established by **Washington Treaty** on 4 April 1949.

- Headquarters — Brussels, Belgium.
- **Composition:** Since its founding, the admission of new member states has increased the alliance from the original 12 countries to **30**.
- The most recent member state to be added to NATO was North Macedonia on 27 March 2020.

### US' Digital Millennium Copyright Act (DMCA) 1998

- The Union Minister for Electronics and Information Technology was locked out of his Twitter account for an hour allegedly over a notice received for violation of US' Digital Millennium Copyright Act (DMCA) 1998.
- It is a law passed in the US and recognises Intellectual Property (IP) on the internet. The DMCA oversees the implementation of two 1996 treaties signed by **World Intellectual Property Organisation (WIPO) member nations- the Copyright Treaty and the Performances and Phonograms Treaty**.
- To generate an DMCA notice, in the case of social media intermediaries like Facebook, Instagram or Twitter, content creators can directly approach the platform with a proof of them being original creators.
- Since these companies operate in nations which are signatories to the WIPO treaty, they are obligated to remove the said content if they receive a valid and legal DMCA takedown notice.

<b>WIPO Performance and Phonograms Treaty</b>	India has acceded to this agreement. It Deals with the rights of two kinds of beneficiaries, particularly in the digital environment: <ul style="list-style-type: none"> <li>• Performers (actors, singers, musicians, etc.);</li> <li>• Producers of phonograms (persons or legal entities that take the initiative and have the responsibility for the fixation of sounds).</li> </ul>
<b>WIPO Copyright Treaty</b>	A special agreement under the Berne Convention which deals with the protection of works and the rights of their authors in the digital environment. India has acceded to the treaty

### 13<sup>th</sup> ASEM Summit

- The 13th ASEM Summit was held virtually under the chairmanship of **Cambodia**. This Summit marked the 25th anniversary of the ASEM process. India was represented by its Vice President, Venkaiah Naidu.
- **Theme** - "Strengthening Multilateralism for Shared Growth"
- Asia Europe Meeting (ASEM) is a platform for the **countries in Asia and Europe** to exchange views on regional and global issues and strengthen cooperation on a wide range of areas.
- It focuses on **3 pillars – political and security, economic and financial and socio-cultural**.
- **Members of ASEM:** ASEM grouping comprises of **51 member countries** and **2 regional organizations – European Union and ASEAN**.
- Turkey is the newest member of ASEM that joined in 2021.

### ASEM Summit

- The ASEM Summit is a **biennial event** alternating between country in Asia and Europe.
- **India joined ASEM process in 2006**. The 7th ASEM Summit held in 2008 saw the first Summit level participation from India.

### APEC Leaders Summit

- **New Zealand**, being the current chair, hosted the first meeting of this year's Asia-Pacific Economic Cooperation (APEC) forum. It was conducted in a virtual mode.

- The focus of this summit was on the **region's economic recovery** from the coronavirus pandemic, emphasising supply chain support and **decarbonising economies**.
- It aims to create greater prosperity for the people of the region by promoting balanced, inclusive, sustainable, innovative, and secure growth and by accelerating regional economic integration. The focus of APEC's work is **connecting and integrating economies within the region** so it is easier to do business within and between them.
- **Established** in 1989, APEC has **21 members** and its **Secretariat is based in Singapore**.
- **Member Nations:** Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Chinese Taipei, Thailand, Vietnam, and the United States.
- It is home to around **2.8 billion** people and represented approximately **59% of world GDP** and **49% of world trade** in 2015.

### India and APEC

- India is **not a member** but had requested membership in APEC, and received initial support from the United States, Japan, Australia, and Papua New Guinea. Officials have decided **not to allow India to join as India does not border the Pacific Ocean, which all current members do**.
- India was invited to be an **observer for the first time in November 2011**.

### India Has Chaired The First BRICS Employment Working Group (EWG) Meeting, Held Virtually

- It saw Representatives of member nations (Brazil, Russia, India, China and South Africa), the representatives of International Labour Organization (ILO) and International Social Security Agency (ISSA) also made valuable interventions and suggestions on the agenda issues.
- **Outcomes:** Promoting **Social Security Agreements (SSA)**. It will help the international workers to port their benefit to their home countries.
- Discussed various initiatives taken by them towards formalization of jobs.
- Resolved to promote participation of women in remunerative, productive and decent work.

### About BRICS

- BRICS is an acronym for 5 emerging economies of the world viz. – Brazil, Russia, India, China, South Africa.
- The term BRIC was coined by Jim O' Neil, the then chairman of Goldman Sachs in 2001. The first BRIC summit took place in the year 2009 in Yekaterinburg (Russia).
- In 2010, **South Africa** formally joined the association making it BRICS.
- At the Fourth BRICS Summit in New Delhi (2012), the possibility of setting up a **New Development Bank** was considered to mobilize resources for infrastructure and sustainable development projects in BRICS and other emerging economies, as well as in developing countries.
- During the Sixth BRICS Summit in **Fortaleza (2014)** the leaders signed the Agreement establishing the New Development Bank (NDB).
- BRICS nations signed **BRICS Contingent Reserve Arrangement (CRA)** in 2014 as part of Fortaleza Declaration at Sixth BRICS summit. It aims to provide short-term liquidity support to the members through currency swaps to help mitigating BOP crisis situation and further strengthen financial stability.

### Stockholm International Peace Research Institute (SIPRI) Year Book 2021

- India possessed an estimated 156 nuclear warheads at the start of 2021, compared with 150 at the start of last year, while Pakistan had 165 warheads, up from 160 in 2020.
- China's nuclear arsenal consisted of 350 warheads, up from 320 at the start of 2020.

- The **nine nuclear armed states** — the **U.S., Russia, the U.K., France, China, India, Pakistan, Israel and North Korea** — together possessed an estimated 13,080 nuclear weapons at the start of 2021.
  - Russia and the U.S. together possessed over 90% of global nuclear weapons.
  - India remains committed to the policy of **No First Use (NFU)** against nuclear weapon states and non-use against non-nuclear-weapon states.
- Based in **Stockholm**, SIPRI is an **independent international institute** dedicated to research into conflict, armaments, arms control and disarmament.
  - Established in **1966**, SIPRI provides data, analysis and recommendations, to policymakers, researchers and media.

**3<sup>rd</sup> India-Central Asia Dialogue**

- The meeting was held at New Delhi under the chairmanship of External Affairs Minister of India.
- **Participants** - Ministers of Foreign Affairs of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan & Uzbekistan.
- As India interacted with the Central Asia republics in New Delhi, Islamabad hosted the 17th extraordinary session of the **Organisation of Islamic Cooperation's** (OIC) Council of Foreign Ministers.
  - ✓ It should be noted that the foreign ministers of the five Central Asian countries are also members of the OIC grouping.
  - ✓ However, they **skipped meeting in Islamabad** to attend the dialogue in New Delhi.

**India-Central Asia Dialogue**

The 1<sup>st</sup> India-Central Asia Dialogue was held in Samarkand in January 2019.

The 2<sup>nd</sup> meeting was organized by India in October 2020 in digital video-conference format.

**Key Summary Of Joint Statement**

- Assessed Steps Taken To Implement The Decisions Taken At Previous Dialogue:** This includes signing of MoUs for implementation of High Impact Community Development Projects (HICDPs) for socio-economic development in Central Asian countries. It is based on grant assistance by India.
- Role of Indian Technical and Economic Cooperation (ITEC) Programme Appreciated**
- Noted The Need To Strengthen And Expand Interconnectivity:** Turkmenistan stressed on the importance of TAPI gas pipeline project. The leaders emphasized on optimum usage of the International North-South Transport Corridor (INSTC) as well as Ashgabat Agreement on International Transport and Transit Corridor to enhance connectivity between India and the Central Asian countries.
- International Solar Alliance (ISA) And Coalition for Disaster Resilient Infrastructure (CDRI) role highlighted**
- Discussed The Current Situation in Afghanistan**

**Summit for Democracy**

- US President Joe Biden hosted the **first-ever** Summit for Democracy. It was two-day virtual summit, for which **India was an invitee**. Many other countries including China and Russia were not invited to this summit.
- This summit brought together leaders from government, civil society, and the private sector to set forth an **affirmative agenda for democratic renewal** and to tackle the greatest threats faced by democracies today through collective action.
- A total of 111 countries were invited for this summit.

**Principal Themes:** It is centered around three principal themes:

Defending  
against  
authoritarianism

Addressing and  
fighting  
corruption

Advancing respect  
for human rights

### Lithuania Pulls Out Of China And Central & Eastern European (CEE) 17+1 Mechanism

- The **17+1 initiative** is a **China-led format** founded in 2012 in Budapest with an aim to expand cooperation between Beijing and the Central and Eastern European (CEE) member countries, with investments and trade for the development of CEE region.
- The framework also focuses on infrastructure projects such as bridges, motorways, railway lines, and modernisation of ports in the member states.
- The initiative includes twelve EU member states and five Balkan states — **Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia.**
- **Tensions between China and Lithuania have been building** up over a number of issues: Lithuania's new ties with Taiwan, its Parliament's resolution on Uighurs, and then Chinese sanctions on Lithuanian and EU Politicians.

## DEFENCE AND SECURITY

## Assam Rifles' Dual Control Structure And Its Role

## Assam Rifles

- Assam Rifles is one of the six Central Armed Police Forces (CAPFs) that come under the MHA's administrative control.
- Its history dating back to 1835 when its precursor, Cachar Levy, was formed in the Northeast to protect British Tea estates and their settlements against tribal raids.
- Over the period of time, it was expanded and rechristened as Assam Military Police Battalion, with additional battalions.
- It was later renamed as Assam Rifles. This is where the dual structure was perhaps born because even as it continued to operate as a police force, the Rifles tag indicated it was on a par with Army units.
- Besides maintaining law and order in the Northeast (a task it performs together with the Army), the Assam Rifles also guards the border with Myanmar in the region.

## Dual Control of Assam Rifles

- Under the existing mechanism, Assam Rifles comes under both the Ministry of Defence (MoD) and Ministry of Home Affairs (MHA).
  - The MHA only exercises administrative control of the Assam Rifles;
  - Its operational control is with the MoD (Army).
- Although, the Assam Rifles personnel operate alongside the Army on similar duties, there is a disparity in the pay scale.
- Many believe that this dual control structure is arbitrary, unreasonable and in violation of the rights of Assam Rifles personnel.

## Issues Associated With Dual Control

- Salaries and infrastructure for this force is provided by the MHA, but the deployment, posting, transfer and deputation of the personnel is decided by the Army
- Although, the Assam Rifles personnel operate alongside the Army on similar duties, there is a **disparity in the pay scale**. Army personnel enjoy better perks and retirement benefits which are far higher compared to CAPFs under MHA.

## Contributions of Assam Rifles

- Since its formation in 1835, Assam Rifles has gone on to fight in two World Wars.
- It is used as an anti-insurgency force against militant groups in the North East.
- The **Post-Independence role** of the Assam Rifles continued to evolve ranging from
  - conventional combat role during **Sino-India War 1962**,
  - operating in foreign land as part of the Indian Peace Keeping Force (IPKF) to Sri Lanka in 1987 (Op Pawan), to
  - Peacekeeping role in the North-Eastern areas of India.

## Other Central Armed Police forces (CAPF):

Central Reserve Police Force (CRPF); Border Security Force (BSF); Indo-Tibetan Border Police (ITBP); Central Industrial Security Force (CISF) and Sashastra Seema Bal (SSB).

**Nagaland Killings And The AFSPA**

The recent killings of civilians, belonging to **Konyak tribe**, by security forces in a case of alleged mistaken identity in Nagaland have once again rekindled the debate over the AFSPA.

**Konyak Tribe**

- Konyaks are one of the **major ethnic groups of Nagaland** who reside mostly in Mon district.
- With a population of roughly 3 lakhs, the Konyaks also extends into Arunachal Pradesh, with a sizeable population in Myanmar.
- In the past the Konyaks were **renowned head-hunters**, they would often carry back the heads of their rivals as war trophy. They were the last to give up the practice of head-hunting.
- They are skilled artisans and are experts in the art of making firearms and handicrafts like basket making, bamboo works and weaving.
- The Konyaks also have **institutions of learning** like the morung of other Naga tribes.

**About Armed Forces (Special Powers) Act (AFSPA), 1958**

- It was enacted in 1958 to bring under control what the government of India considered disturbed areas.
- Under its provisions, the armed forces have been empowered to:



- Prosecution of the officer on duty needs prior permission of the Central Government.
- Irom Sharmila, known as the Iron lady of Manipur, has been a towering figure who is well-known for her 16-year-long hunger strike against AFSPA.

**Historical Background of AFSPA**

- **Need of AFSPA 1958:** Normal CrPc and IPC provision are not able to address these violent situations and terrorist activities.
- The law is based on the Armed Forces (Special Powers) Ordinance of 1942, which was issued during the Quit India movement.
- Enacted by Parliament on September 11, 1958, AFSPA was first implemented in the Northeast, and then in Punjab.
- AFSPA 1958 is combination of two legislations. First is for handling the insurgency in North-East in 1958. Second one is for handling the situation in Kashmir in 1990.

**Historical Background of AFSPA**

- AFSPA can be implemented in an area after it has been declared as "disturbed".
- States under AFSPA includes:
  - Assam, Nagaland, Manipur (excluding 7 assembly constituencies of Imphal),
  - Arunachal Pradesh (only the Tirap, Changlang and Longding districts plus a 20-km belt bordering Assam), and Jammu and Kashmir.
  - It was completely lifted from Meghalaya in April 2018. It was repealed in Tripura in 2015

**Disturbed Area**

- The state or central government considers those areas as 'disturbed' by reason of differences or disputes between members of different religious, racial, language or regional groups or castes or communities.
- Once declared 'disturbed', the region has to maintain status quo for a minimum of three months, according to The Disturbed Areas (Special Courts) Act, 1976.
- The state governments can suggest whether the Act is required to be enforced or not. But under Section (3) of the Act, their opinion can still be overruled by the governor or the centre.

### Chakma and Hajong

- The Arunachal Pradesh government has recently decided to relocate the Chakmas and the Hajongs, who trace their roots to Bangladesh.
- Chakmas are predominantly **Buddhists** while Hajongs are **Hindus**.
- They were inhabitants of the Chittagong Hill Tracts of erstwhile East Pakistan.
- The Indian government set up relief camps in Arunachal Pradesh and a majority of them continue to live there even after 50 years.

### Interstate Border Disputes In India

Inter-state border disputes also exist in India, either **active** or **dormant**, such as:

#### Active

- **Haryana-Himachal Pradesh over** Parwanoo region **near Panchkula**,
- **Maharashtra-Karnataka over** Belgaum district with a large **Marathi-speaking population**. It was part of **Bombay Presidency** before coming under **Karnataka** in **1956**, and
- **Himachal Pradesh-Ladakh over** Sarchu, lying along Leh-Manali highway.

#### Dormant

- **Odisha-West Bengal** had issues in the past along its mainland boundaries and over **Kanika Sands Island** in the Bay of Bengal,
- **Haryana-Punjab** over Chandigarh,
- **Karnataka-Kerala** over Kasaragod, part of Kerala with many Kannada- speaking people,
- **Gujarat-Rajasthan** over Mangadh Hill.
- The reorganization of the State of Assam, starting from Nagaland in 1963 gave rise to **4 inter-state border disputes** in Northeastern region:
  - ✓ **Assam-Meghalaya dispute**.
  - ✓ **Assam-Nagaland dispute** over Naga Hills and all Naga-dominated area in North Cachar and Nagaon districts, which were part of Naga territory under 1866 notification from British.
  - ✓ **Assam-Mizoram dispute** over boundaries in southern Assam's Barak Valley and the Lushai Hills, based on two British-era notifications of 1875 and 1933 with Mizoram demand on boundary as decided in 1875.
  - ✓ **Assam-Arunachal Pradesh** dispute over forested tracts in the plain areas of border.

### Negative Imports List For Defence

- The Defence Ministry has notified the second negative import list — now renamed as the '**positive indigenisation list**' — of 108 items that can now be only purchased from indigenous sources. The new list takes the total number on the list to 209.
- The list comprises complex systems, sensors, simulator, weapons and ammunitions like helicopters, next generation corvettes, Air Borne Early Warning and Control (AEW&C) systems, tank engines.
- Introduced in August 2020, the negative list essentially means that the Armed Forces—Army, Navy and Air Force—will only procure such items from domestic manufacturers. The manufacturers could be private sector players or Defence Public Sector Undertakings (DPSUs).

As per Stockholm International Peace Research Institute, **India has been the second largest importer**

**between 2014 and 2019.** The government wants to reduce the dependence on imported items in defence and give a boost to the domestic defence manufacturing industry.

### Rajnath Opens Defence Startup Challenge 5.0

- Defence minister launched the 5th edition of the Defence India Start-up challenge (**DISC**) under Innovations for Defence Excellence- Defence Innovation Organization (**iDEX-DIO**).
- It is meant to achieve self-reliance and foster innovation and technology development in the defence and aerospace sectors.

### Innovations for Defence Excellence initiative (iDEX)

- Launched in 2018, it is an initiative taken by the government to contribute towards modernization of the Defence Industry.
- To promote innovation and technology development in Defence and Aerospace by engaging Industries.
- It will be funded and managed by the Defence Innovation Organization (DIO), and will function as the executive arm of DIO.

### Defence India Startup Challenge (DISC)

- DISC aims at supporting **Startups/MSMEs** (Micro Small and medium Enterprises)/Innovators to create prototypes and/or commercialize products/solutions in the area of National Defence and Security.
- It is meant to achieve self-reliance and foster innovation and technology development in the defence and aerospace sectors.
- It was launched by the Ministry of Defence in partnership with **Atal Innovation Mission**.

### 7 New Defence Public Sector Units

- Prime Minister dedicated the seven defence Public Sector Undertakings (PSUs), created **through the restructuring of the Ordnance Factory Board (OFB) by amalgamation of 41 factories under seven new state-owned companies.**
- India's goal under '**Atmanirbhar Bharat**' is to make the country, on its own, into a big military power.
- **Seven New Companies:** Munitions India Limited, Armoured Vehicles Nigam Limited, Advanced Weapons and Equipment India Limited, Troop Comforts Limited, Yantra India Limited, India Optel Limited, and Gliders India Limited.
- The concerns have been raised regarding **high costs, inconsistent quality and delay in supply of OFB products** by the armed forces. The new structure will help **overcome these various shortcomings** in the existing system of OFB and **encourage these companies to become competitive and explore new opportunities** in the market including exports.

### Self-Reliance in Defence Sector

- **Corporatisation of OFB**
- **Revised FDI Limit:** The **FDI limit** in defence manufacturing **under automatic route** is raised **from 49% to 74%**.
- **Defence Industrial Corridor:** The government has proposed to establish two **Defence Industrial Corridors** in Uttar Pradesh and Tamil Nadu each.
- **Project Management Unit (PMU):** The government is expected to begin time-bound defence procurement and faster decision making by setting up a Project Management Unit (for contract management purposes).
- The **Defence Acquisition Procedure (DAP) 2020** has been unveiled.

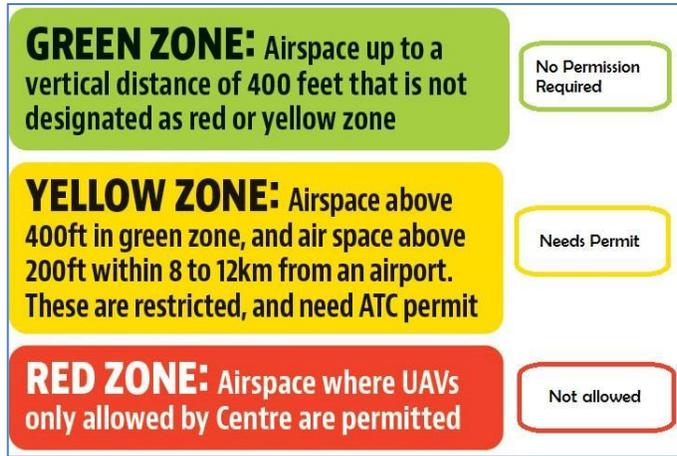
- **Reduction in Defence Import Bill** due to announcement of negative import list for defence.

### India's New Drone Rules

Drone” means an aircraft that can operate autonomously or can be operated remotely without a pilot on board

#### Main Relaxations

- Various approvals that were required, such as unique authorization number, student remote pilot license, etc have been abolished.
- No pilot license will be required for operating nano drones and micro drones for non-commercial use.
- No security clearance required before any registration or license issuance for drones.
- No restriction on foreign ownership in Indian drone companies.
- Maximum penalty for violations had been reduced to Rs.1 lakh.
- **Digital Sky platform** will be developed as a single-window platform for the clearances. Airspace map will be displayed on Digital Sky platform that will show the three zones - yellow, green and red.
- **Coverage of Drones** - Coverage of all-up weight of an unmanned aircraft system has been increased from 300 kg to 500 kg to include heavy payload-carrying drones for use in the logistics and transportation sectors.



### Medicine From The Sky Project

- **Telangana** is promoting the nine-day pilot under Medicine from the Sky project. It is the first-of-its-kind project involving the delivery of medicines through multiple drones.
- It includes a comprehensive study of drone-based deliveries for **blood, vaccines, diagnostic specimens, and lifesaving equipment.**
- The project framework was prepared by World Economic Forum (WEF) and Group Healthnet Global Limited and was later adopted by the Telangana government.

#### Drones

Drone is a layman terminology for **Unmanned Aircraft (UA)**. There are **three subsets of Unmanned Aircraft**- Remotely Piloted Aircraft, Autonomous Aircraft and Model Aircraft.

#### Beyond Visual Line of Sight (BVLOS)

- It is a term relating to the operation of Unmanned Aerial Vehicles (UAVs) and drones at **distances outside the normal visible range of the pilot.**

**Leveraging technology**

**'Medicine from the sky'** is the first-of-its-kind project involving delivery of medicines through multiple drones

Vikarabad area hospital selected as central point owing to the presence of cold chain facilities

The selected PHCs are both within the Visual Line of Sight (VLOS) and Beyond Visual Line of Sight (BVLOS) range

Project being launched as Civil Aviation Ministry approved State's request to grant conditional exemption from Unmanned Aircraft System (UAS) Rules 2021

The project is aimed at assessing alternative logistics route in providing safe, accurate and reliable pick up and delivery of health care items

- BVLOS flights typically **require additional equipment and extra training and certification** and are subject to permission from aviation authorities. Unmanned Aircraft System Rules 2021 states that **drones will not be allowed to operate BVLOS**, which would **limit the use of these gadgets to surveys, photography, security** and various information gathering purposes.

### Indrajaal : Drone Defence Dome

- Hyderabad-based technology R&D firm **Grene Robotics** has designed and developed India's **first indigenous drone defence dome called "Indrajaal"**.
- The drone defence dome has the capability to autonomously protect an area of **1000-2000 sq km** against the aerial threats by assessing and acting on aerial threats such as Unmanned Aerial Vehicles (**UAVs**), loitering munitions, and Low- Radar Cross Section (**RCS**) targets.

### Octacopter

- Octacopter is an indigenous, **medium-class drone** developed by the state-run National Aerospace Laboratories (NAL), a constituent of CSIR.
- The drone is made out of light weight carbon fibre foldable structure.
- It has unique features like autonomous guidance through dual redundant micro electromechanical systems based digital autopilot with advanced flight instrumentation systems.
- It can fly at the maximum flying speed of 36 kmph, and can carry a payload of 15 kg with a hovering endurance of 40 minutes.
- It can be used for a variety of applications for last-mile delivery like medicines, vaccines, food, postal packets, human organs, etc.
- It can also be used for agricultural pesticide spraying, crop monitoring, mining survey, magnetic geo survey mapping among others.

### Different Exercises

#### India's Participation In Military Exercises

- **SIMBEX with Singapore**
- **Samudra Shakti with Indonesia**
- **AUS – INDEX with Australia**
- Recently, **India and Saudi Arabia** started their **first-ever naval joint exercise** called the **Al-Mohed Al-Hindi Exercise**. **INS Kochi** is the Indian warship participating in the exercise
- **12th Edition of Indra Navy**, a biennial maritime exercise between India and Russia, was held at Baltic sea.

### Exercise Ekuverin

- The **11<sup>th</sup> edition** of **Joint Military Exercise Ekuverin** between **India & Maldives** was conducted at Kadhdhoo Island, Maldives.
- India and Maldives have been conducting this Exercise since 2009.

### PANEX-21

- Recently, PANEX-21 was conducted at College of Military Engineering in Pune.
- It was the **3<sup>rd</sup>** edition of this exercise and was organised by the Southern Command of the Indian Army.
- PANEX is the Tri-services **Humanitarian Aid and Disaster Relief Exercise** for **BIMSTEC Member States**.
- The first BIMSTEC Disaster Management Exercise was organized by India in October 2017 in New Delhi, and the second edition in February 2020, in Odisha

### India-ITU Joint Cyberdrill 2021

- Department of Telecommunications (DoT) and International Telecommunication Union (ITU) had conducted India-ITU Joint Cyberdrill 2021.
- This Cyberdrill was intended for Indian entities especially Critical Network Infrastructure operators.
- During this event, participants highlighted significant achievement of India in securing **10<sup>th</sup> rank in the ITU Global Cybersecurity Index**.
- The **US** topped the chart, followed by the UK and Saudi Arabia tied on the second position, while Estonia was ranked third in the index.
- GCI assessment is done on the basis of performance on **five** parameters of cybersecurity including **legal measures, technical measures, organisational measures, capacity development, and cooperation**

### Exercise Talisman Sabre

- Australia is keen that India joins its biggest war games 'Talisman Sabre' in 2023
- The Quad group of countries comprising **India, Australia, Japan and the U.S.** are set to hold the annual **Malabar naval exercise 2021** off the coast of Guam. Australia was included in the Malabar 2020.
- Exercise Talisman Sabre** is a **biennial**, multinational military exercise led by **Australia and the United States**. The other countries include Canada, Japan, New Zealand, South Korea and U.K

### International Army Games 2021

- Indian Army to take part in International Army Games 2021 to be held in Russia.
- The International Army Games is an annual Russian military sports event organized by the Ministry of Defense of Russia (MoD).
- The games have been referred to as the **War Olympics**.

### ASIGMA

- Indian Army has launched a **WhatsApp-like instant messaging application** called ASIGMA.
- ASIGMA stands for **Army Secure IndiGeneous Messaging Application**.
- It is a new generation, state-of-the-art, web-based application which is being deployed as a replacement of the **Army Wide Area Network** messaging application.
- The application will meet the army's real-time data transfer and messaging requirements. The app is in line with the **government's Make in India initiative**.

**South Africa Grants Patent To An Artificial Intelligence System**

- South Africa, first time in the world, has granted a patent to an ‘artificial intelligence system’ relating to a “food container based on fractal geometry” innovation.
- Innovation involves interlocking food containers that are easy for robots to grasp and stack.
- The patent has been given to an artificial intelligence (AI) system (**called DABUS**); not a human being.
- **DABUS stands for “Device for the autonomous bootstrapping of unified sentience”.**
- DABUS is a particular type of AI, often referred to as “**creativity machines**” because they are capable of independent and complex functioning. The system simulates human brainstorming and creates new inventions
- Creativity machines can process and critically analyse data, learning from it. This process is known as machine learning.

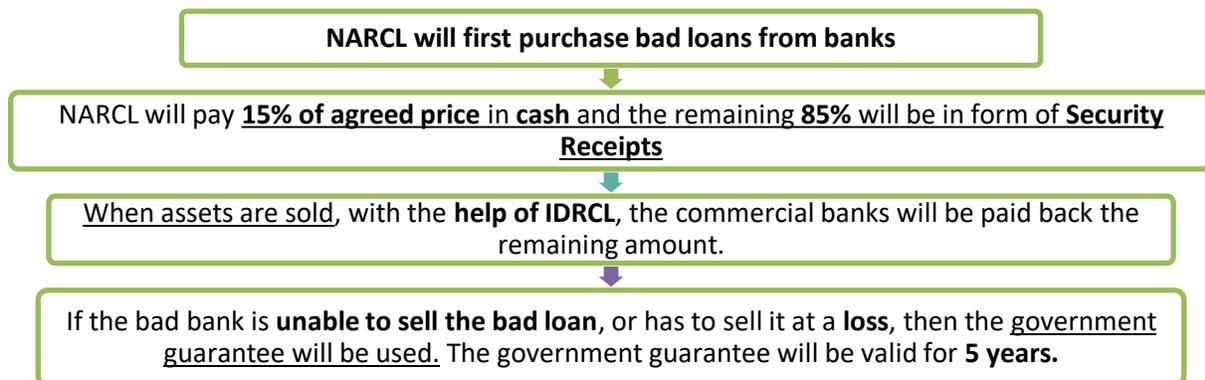
## ECONOMY AND INFRASTRUCTURE

## National Asset Reconstruction Company Ltd. (NARCL)

- The government recently cleared a ₹30,600-crore guarantee programme for securities to be issued by the recently incorporated National Asset Reconstruction Company Ltd (NARCL).
- This will help NARCL to acquire stressed assets worth Rs 2 lakh crore from the balance sheets of banks.



- Bad banks are *not involved in lending and taking deposits*. Technically, it is an ARC or an AMC (Asset Management Company) that takes over the bad loans of commercial banks.
- The takeover of bad loans is normally **below the book value** of the loan and the bad bank tries to recover as much as possible.
- Asset reconstruction** is the **purchase of title or rights** of the banks or financial institutions in loans, bonds etc., for the sole purpose of its recovery.



- Thus, the difference between the amount the commercial bank was supposed to get and the amount the bad bank is able to raise will be paid from the Rs 30,600 crore provided by the government.

## NARCL and IDRCL

- NARCL has been incorporated under the Companies Act and it has applied to RBI for a license as an ARC. **Public sector banks** will have **51% ownership** in it.
- IDRCL is a **service company/operational entity** which will manage the asset and engage market professionals and turnaround experts. **Public sector banks** and **Public financial institutions** will hold a maximum of **49% stake in IDRCL**, and the rest will be with private sector lenders.
- The proposed bad bank will have a public sector character since the idea is mooted by the government and majority ownership is likely to rest with state-owned banks.

ARC is a specialized financial institution that buys the Non-Performing Assets (NPAs) from banks and financial institutions so that they can clean up their balance sheets. This helps banks to concentrate on normal banking

activities. The *Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002* provides the legal basis for setting up of ARCs in India. The asset reconstruction companies or ARCs are registered under the RBI.

### Co-lending Model

The State Bank of India (SBI) recently signed an agreement with Adani Capital, an NBFC to form a **Co-Lending partnership**.

#### Background

- In 2018, the RBI had announced 'co-origination of loans' by banks and NBFCs for lending to the priority sector. The arrangement required **joint contribution of credit** by both the lenders and sharing of risks and rewards.
- Subsequently, to better utilize the respective advantages of the banks and NBFCs, the RBI launched the **Co-Lending Model (CLM) scheme in November 2020**.
- CLM was an improvement over the co-origination model as it provided greater operational flexibility to the lending institutions.
- CLM's primary aim is to improve the flow of credit to the **unserved and underserved** segment of the economy at an affordable cost. This happens as banks have lower cost of funds and NBFCs have greater reach beyond tier-2 centres.

#### Details of CLM

- Under CLM, banks are permitted to co-lend with all registered NBFCs (including **Housing Finance Companies**) based on a **prior agreement**.
- NBFCs have to retain at least 20% share of the individual loans on their books. The remaining loan is maintained on the books of the bank involved.
- NBFCs act as the single point of interface for the customers and a tripartite agreement is done between the customers, banks and NBFCs.
- All transactions (disbursements/ repayments) between the banks and NBFCs have to be routed through an **escrow account** maintained with the banks, in order to avoid inter-mingling of funds.

#### Priority Sector Lending (PSL)

- As per PSL norms, commercial banks, including foreign banks, are required to give **40%** of their loans to certain specified sectors. Similarly, Regional rural banks and small finance banks have to allocate 75% of their loans for PSL.
- The sectors under PSL include, agriculture, micro, small and medium enterprises (MSMEs), export credit, education, housing, social infrastructure, renewable energy etc.

### Additional Tier-1 Bonds

- Recently, State Bank of India (SBI) raised ₹4,000 crore via **Basel Complaint** Additional Tier 1 (AT1) bonds at a slightly higher interest rate of 7.72% (compared to other bonds).
- Bonds are **investment securities** where an investor lends money to a company or a government for a set period of time, in exchange for **regular interest payments**. Once the bond reaches maturity, the bond issuer returns the investor's money (principal amount).
- Bond prices are **inversely correlated with interest rates**: when rates go up, bond prices fall and vice-versa.

#### About AT1 Bonds

- AT1 bonds are **unsecured, perpetual bonds with no predetermined maturity date**, issued by financial institutions to fulfil their capital adequacy requirements.
- Though **these bonds never mature**, they are issued with a **call option**.

- ✓ The call option gives issuers of AT1 bonds, usually banks, **the right (but not an obligation) to buy these bonds back from investors** by paying the principal amount to investors.
- ✓ The issuer of such bonds may call or redeem the bonds if it is **getting money at a cheaper rate**, especially when **interest rates are falling**.
- Also, the holders of AT1 bonds **do not have a put option**, which means, investors cannot return these bonds to the issuing bank and get back the principal amount.
- Like other bonds, AT1 bonds pay a **fixed rate of interest** at regular intervals. However, if banks face bankruptcy or capital shortage, they can dismiss the principal amount and not pay interest.
- AT1 bonds can also be **listed and traded on exchanges**. So, if an AT1 bond holder needs money, he/she can sell it in the market.
- AT1 bonds are **regulated by RBI**. If the RBI feels that a bank needs to be rescued, it can ask the bank to cancel its outstanding AT-1 bonds without consulting its investors.

### Capital Adequacy Rate (CAR)

- It is the ratio of a **bank's capital** in relation to **its risk weighted assets and current liabilities**. In other words, it measures how much capital a bank has with it as a % of its total credit exposure (loans).
- RBI norms mandate that India's public sector banks maintain a CAR of 12% and scheduled commercial banks should maintain a CAR of 9%.

### Green Bonds

- Power Finance Corporation Ltd (PFC), the leading non-banking finance corporation (NBFC) in the power sector, has successfully issued its **first Euro Green Bond** worth €300 million. Maturity time is **7 years**.
- It is the first ever **Euro denominated** Green bond issuance from India.
- Moreover, it is the first ever Euro issuance by an **Indian NBFC**.
- Green Bonds, also known as **Climate Bonds**, are issued to exclusively raise money for climate and environmental projects in the areas of renewable energy, clean transportation, sustainable water management etc.
- Green bonds may also offer **tax incentives**, such as tax exemption and tax credits to attract investors.
- Fund-raising through green bonds was done first in 2007 by the European Investment Bank.
- **World Bank** is a major issuer of green bonds.
- Green Bonds were first issued in India in 2015 by Yes Bank. As of 2021, India has the second-largest emerging green bond market after China.

### Deposit Insurance and Credit Guarantee

The Prime Minister recently shared that *Rs 1,300 crore had been paid to over 1 lakh depositors* who could not access their money as their banks faced financial crises.

#### Deposit Insurance

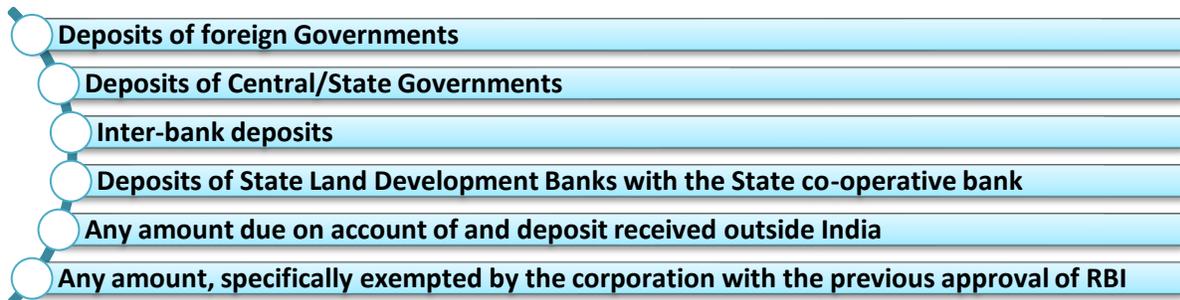
- It offers protection to the deposits of bank customers in case a bank becomes insolvent

#### Credit Guarantee

- It is the guarantee that often provides for a specific remedy to the creditor if his debtor does not return his debt

### Deposit Insurance

- A bank becomes insolvent when its total liabilities exceed its total assets, usually as a result of poor investing or lending decisions. So, an insolvent bank may not be able to repay all the money that it owes its depositors. In such cases, the government steps in to compensate depositors, usually up to a certain threshold amount.
- In India, deposits in public and private sector banks, local area banks, small finance banks, regional rural banks, cooperative banks, Indian branches of foreign banks and payments banks are all **insured by the DICGC**, a fully owned subsidiary of RBI.
  - However, primary cooperative societies are not insured by DICGC.
  - Moreover, the deposit insurance scheme is compulsory and none of the above-mentioned banks can withdraw from it.
- The **premium** for this insurance is *paid by banks to the DICGC and is not passed on to depositors*. It has been raised from 10 paise for every Rs 100 deposit, to 12 paise and a limit of 15 paise has been imposed.
- DICGC insures all deposits such as **savings, fixed, current, recurring, etc. except** the following:



- All funds held in the **same type of ownership** at the **same bank** are added together before deposit insurance is determined. If the funds are in **different types of ownership** (savings, current etc.) or are **deposited into separate banks** they would be **insured separately**.
- Under the new amendments, **bank deposits of up to ₹5 lakh are insured** by the government. Earlier, deposits of only up to ₹1 lakh were insured. The cover of Rs 5 lakh per depositor is provided by **DICGC**.
- **Damodaran Committee** on 'Customer Services in Banks' (2011) had recommended a five-time increase due to rising income levels & increasing size of individual bank deposits.
- DICGC must return money owed to depositors within **90 days**.

### Account Aggregator System

- India's **eight major banks** recently joined the Account Aggregator (AA) network that will enable customers to easily access and share their financial data.
- The AA framework was created through an inter-regulatory decision by RBI and other regulators including SEBI, IRDA, and PFRDA through an initiative of the **Financial Stability and Development Council (FSDC)**.
- An Account Aggregator (AA) is a **RBI regulated non-banking financial company (NBFC)**. The AA framework allows customers to access different financial services from various providers on a **single portal**.
- It allows a customer to transfer his financial information related to various accounts such as banks deposits, equity, mutual fund and pension funds to any other regulated financial institution in the AA network. It will help banks to reduce transaction costs, offer customised products and services to the customers, reduce fraud, fast track loan evaluation process etc.

**Structure of AA**

- It has a **three-tier structure**: Account Aggregator, FIP (Financial Information Provider) and FIU (Financial Information User).
- Data transmitted through the AA is **encrypted** and AAs are not allowed to store, process and sell customer’s data.

**FIP**

• It s the data fiduciary, which holds customers’ data. It can be a bank, NBFC, mutual fund, insurance repository or pension fund repository

**FIU**

- It consumes the data from an FIP to provide various services to the consumer. For example, a lending bank that wants access to the borrower’s data to determine if the borrower qualifies for a loan is an FIU
- **Banks play a dual role – as an FIP and as an FIU.**

**AA Apps**

- Four account aggregator apps that have received operational licences from RBI: Finvu, OneMoney, CAMS Finserv, and NESL,
- In-principle nods have been given to: PhonePe, Perfios, and Yodlee.

**Prompt Corrective Action Framework**

RBI recently removed Indian Overseas Bank (IOB) from Prompt Corrective Action (PCA) Framework, following improvement in bank’s various parameters. IOB was placed under PCA in 2015 due to high Net Non-Performing Assets (NPAs) and negative Return on Assets (RoA).

**About PCA**

- Introduced in **2002 by RBI**, PCA is a framework under which banks with weak financial health are put under monitoring by RBI. The framework was revised by RBI in 2017.
- As most bank activities are funded by deposits which need to be repaid, it is important that a bank carries a sufficient amount of capital to continue its activities. PCA is used to alert the RBI, investors and depositors if a bank may face problems in the future.
- PCA helps RBI to monitor key performance indicators of banks and take corrective measures to restore its financial health.
- It is **applicable only to commercial banks** and not to co-operative banks and non-banking financial companies (NBFCs).
- The PCA has **three risk threshold levels** (1 being the lowest risk and 3 being the highest risk) based on where a bank stands on the parameters above.
- For example, the first threshold is triggered, if the CRAR is less than 9%, but equal or more than 6%. For second threshold CRAR should be less than 6%, but equal or more than 3% and the third threshold is triggered if the CRAR is less than 6%.

The Reserve Bank of India recently revised the Prompt Corrective Action (PCA) framework. The revised PCA framework will be effective from January 1, 2022.

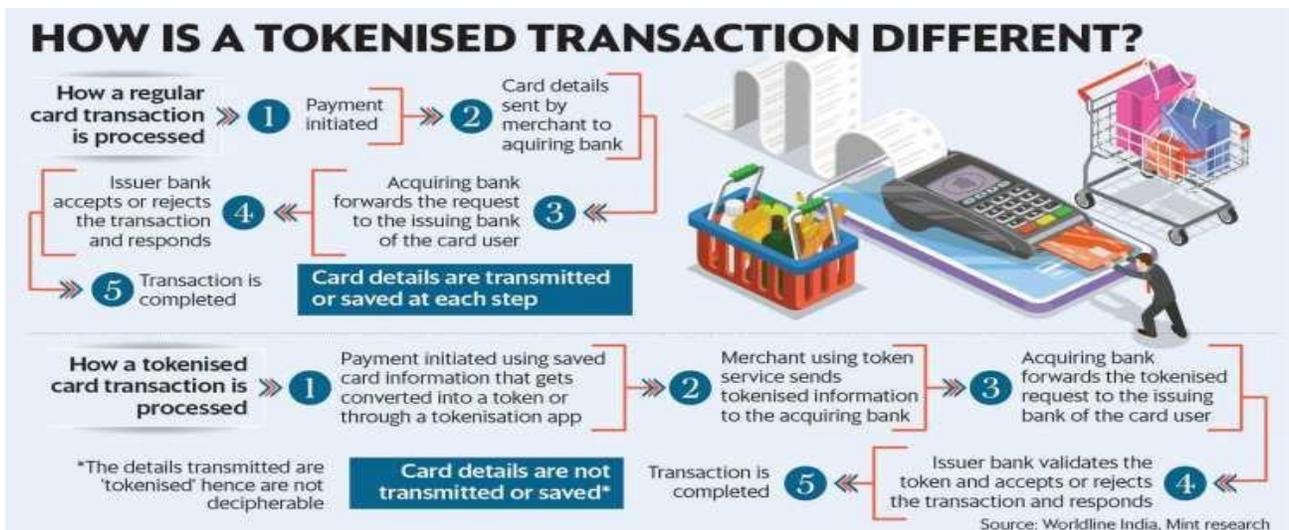
Earlier PCA norms	Revised Framework
Banks were evaluated on <u>capital, asset quality, return on assets (profitability), and leverage</u> .	It excludes the <b>return on assets (RoA)</b> parameter and retains the other three parameters from the previous framework.

**Sovereign Gold Bond Scheme 2021-2022**

- RBI has announced the Sovereign Gold Bond Scheme 2021-22.
- The sovereign gold bond was introduced by the Government in 2015 to **help reduce India’s over dependence on gold imports.**
- The bonds will be restricted for sale to **resident Indian entities**, including individuals, HUFs, trusts, universities and charitable institutions.
- The bonds will be denominated in **multiples of gram(s) of gold with a basic unit of 1 gram.** The tenor will be for a period of **8 years with exit option from 5th year** to be exercised on the interest payment dates.
- The minimum permissible investment limit will be 1 gram of gold, while the maximum limit will be 4 kg for individual, 4 kg for HUF and 20 kg for trusts and similar entities per fiscal (April-March) as notified by the government from time to time.
- In case of joint holding, the investment limit of 4 kg will be applied to the first applicant only.
- Interest Rate: A fixed rate of 2.5% per annum is applicable on the scheme, payable semi-annually.
  - The interest on Gold Bonds shall be taxable as per the provision of Income Tax Act, 1961.
- Bonds can be used as collateral for loans. The loan-to-value (LTV) ratio is to be set equal to ordinary gold loan mandated by the Reserve Bank from time to time.

**Tokenization by RBI**

- Reserve Bank of India has decided to extend the scope of tokenization to include consumer devices such as laptops, desktops, wearables like wristwatches and bands, as well as Internet of Things (IoT) devices.
- **Tokenization refers to the replacement of actual card details with a unique alternate code called the ‘token’,** which is unique for a combination of card, token requestor (i.e. the entity which accepts request from the customer for tokenization of a card and passes it on to the card network to issue a corresponding token) and identified device.
- A tokenized card transaction is considered safer as the actual card details are not shared with the merchant during transaction processing.



### Regulations Review Authority 2.0

- The RBI has set up the RRA 2.0, an advisory group, initially for a period of one year from 1st May, 2021, with a view to **streamline regulations and reduce the compliance burden of regulated entities**. Regulated entities include commercial banks, urban co-operative banks, Non-Banking Financial Companies.
- In 1999, the RBI had set up a Regulations Review Authority (RRA) for reviewing the regulations, circulars, reporting systems, based on the feedback from the public, banks and financial institutions.

### Moderating Bond Yield

- RBI's decision to step up purchase of Government Securities (G-Sec) under the **Government Securities Acquisition Programme (G-SAP)** led to the yield on the benchmark 10-year bond falling below 6%.
- In India, the yield of 10-year G-Sec is considered the benchmark and shows the overall interest rate scenario.
- In April 2021, the RBI launched G-SAP under which it said it would buy **Rs 1 lakh crore worth of bonds** in the April-June quarter.
- The fall in bond yields in India could also be due to a sharp decline in US Treasury yields or the economic uncertainty caused by Covid-19.
- A rise in bond yields in the market will bring the price of the bond down. A drop in bond yield would benefit the investor as the price of the bond will rise, generating capital gains.
- **Bond yield is the return an investor realizes on a bond**. The mathematical formula for calculating yield is the **annual coupon rate divided by the current market price of the bond**.
  - **Coupon Rate**: It is the rate of interest paid by bond issuers on the bond's face value.

### Retail Direct Gilt Accounts (RDG) Scheme

- A Gilt Account can be compared with a bank account, except that the account is **debited or credited** with treasury bills or government securities (G-Secs) instead of money. In other words, it's an **account for holding G-Secs**.
- Under the scheme, retail investors will be allowed to open retail direct gilt accounts (RDG) directly with RBI.
- A dedicated online portal will provide registered users access to primary issuance of G-Secs and to Negotiated Dealing System-Order Matching system (NDS-OM). There are two types of NDS-OM members, including:
  - **Direct Members** - Direct members have current accounts with the RBI and can directly settle trades on NDS-OM.
  - **Indirect Members** - Indirect members do not have current accounts with the RBI and must settle through NDS-OM members that have direct accounts. Most foreign institutional investors have indirect access, while resident entities may have direct access
- There will be no charge on account opening and its management.

### e-RUPI

- The Prime Minister has launched e-RUPI, a **person and purpose-specific** digital payment solution.
- It is a cashless and contactless instrument for digital payment.
- It is a **QR code or SMS string-based e-Voucher**, which is delivered to the mobile of the beneficiaries. The beneficiaries will be identified by their mobile number and a voucher will be allocated by a bank to the service provider.

- The users of this will be able to redeem the voucher without a card, digital payments app, or internet banking access, at the service provider.
- It has been developed by the **National Payments Corporation of India** on its UPI platform, in collaboration with the **Department of Financial Services, Ministry of Health & Family Welfare, and National Health Authority**.
- Any corporate or government agency will approach the partner banks, either private or public-sector lenders, with the details of specific persons and the purpose for which payments have to be made.
- e-RUPI is still backed by the existing **Indian rupee** as an underlying asset and the **specificity of the purpose** makes it different from a virtual currency and makes it closer to a **voucher-based payment system**.

### National Digital Currency

- **A Central Bank Digital Currency (CBDC)**, or national digital currency, is simply the digital form of a country's fiat currency. Instead of printing paper currency or minting coins, the central bank issues electronic tokens. This token value is backed by the full faith and credit of the government.
- RBI is likely to initiate pilot projects to assess the viability of using digital currency to make **wholesale and retail payments** to help calibrate its strategy for introducing a full-scale central bank digital currency (CBDC)
  - Though the concept of CBDCs was directly inspired by bitcoin, it is different from decentralised virtual currencies and crypto assets, which are not issued by the state and lack the 'legal tender' status
- India's fairly high currency-to-GDP ratio holds out another benefit of CBDC — to the extent large cash usage can be replaced by CBDC, the cost of printing, transporting and storing paper currency can be substantially reduced and also Inter-bank settlement would not be required.
- **SC Garg Committee** has given recommendations for various aspects of digital currency/Cryptocurrency.

### Enforcement Directorate Has Transferred Assets Worth ₹8,441.50 Crore To Public Sector Banks

- ED had taken up money laundering probe which helped unearth a complex web of domestic and international transactions and stashing of assets abroad.
- Prosecution complaints were filed against all the three (Vijay Mallya, Nirav Modi and Mehul Choksi) accused after completion of the investigation under the **Prevention of Money Laundering Act**.
  - All the three have been declared '**Fugitive Economic Offenders**' by PMLA (Prevention of Money Laundering Act) Court in Mumbai

- The origin of Enforcement Directorate goes back to 1st May, 1956, when an 'Enforcement Unit' was formed, in the Department of Economic Affairs, for handling Exchange Control Laws violations under Foreign Exchange Regulation Act, 1947 (FERA '47).
- In the year **1957**, this Unit was renamed as 'Enforcement Directorate'. Presently, it is part of the **Department of Revenue, Ministry of Finance**.
- The Organization is mandated with the task of enforcing the provisions of two special fiscal laws – **Foreign Exchange Management Act, 1999 (FEMA) and Prevention of Money Laundering Act, 2002 (PMLA)**.
- For the trial of an offence punishable under section 4 of PMLA, the Central Government (in consultation with the Chief Justice of the High Court), designates one or more Sessions Court as Special Court(s). The court is also called "PMLA Court".

### Fugitive Economic Offenders Act, 2018

- It seeks to confiscate properties of economic offenders who have left the country to avoid facing criminal prosecution or refuse to return to the country to face prosecution.
- **Fugitive Economic Offender (FEO)**: A person against whom an arrest warrant has been issued for committing an offence listed in the Act and the value of the offence is at least Rs. 100 crore.

- Some of the offences listed in the act are:

Counterfeiting government stamps or currency

Money laundering

Cheque dishonour

Transactions defrauding creditors

- **Declaration of FEO:** A *special court (designated under the PMLA, 2002)* may declare an individual as a FEO. Upon confiscation of properties (India & abroad), all rights and titles of the property will vest in the central government
- **Bar on Filing or Defending Civil Claims:** The Act allows any civil court or tribunal to prohibit a declared fugitive economic offender from filing or defending any civil claim. Further, any company or limited liability partnership (LLP) where such a person is a majority shareholder, promoter, or a key managerial person, may also be barred from filing or defending civil claims.

### T+1 Settlement

**Securities and Exchange Board of India (SEBI)** allowed **stock exchanges to start the T+1 system** as an option in place of T+2 for completion of share transactions.

- It has been introduced **on an optional basis in a move to enhance liquidity.**
- **SEBI** is a statutory body established in 1992 in accordance with the provisions of the Securities and Exchange Board of India Act, 1992.

### Settlement System

- In the securities industry, the trade settlement period refers to the time between the trade date that an order is executed in the market and the settlement date when a trade is considered final.
- **If the stock exchange opts for the T+1 settlement cycle for a scrip, it will have to** mandatorily continue with it for a minimum 6 months.
  - ✓ A scrip is a substitute or alternative to legal tender that entitles bearer to receive something in return.
- Thereafter, if it intends to switch back to T+2, it will do so by giving one month's advance notice **to the market.** So, any subsequent switch (from T+1 to T+2 or vice versa) will be subject to a minimum period.

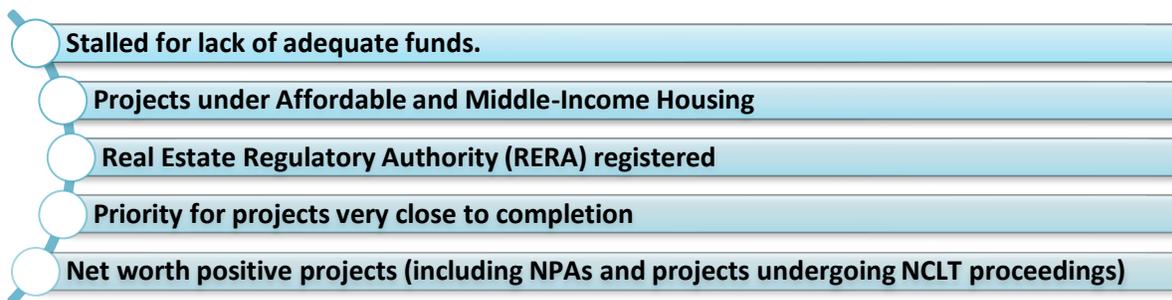
### Kostak Rate And IPO Grey Market

- It relates to an IPO application. So, the rate at which an investor buys an IPO application before the listing is termed the **Kostak rate.**
- Generally, when companies wish to raise funds to fuel their growth, they sell a part of their stock on the stock market. This process is called an initial public offering (IPO).
- But, an **IPO grey market** is an unofficial market where IPO shares or applications are bought and sold before they become available for trading on the stock market. It is also termed a parallel market or an over-the-counter market.
- Since it's unofficial and performs outside SEBI's purview, inevitably, there are no regulations that govern it. These transactions are undertaken in cash on a one-on-one basis.
- For companies, the grey market is a great way to know how the demand for their shares is and how the company's shares might perform once it is listed. It's an excellent opportunity for investors to purchase a company's shares even before they are listed or if they missed the IPO deadline.

### SWAMIH Fund

- The government-backed **Special Window for Affordable and Mid Income Housing (SWAMIH)** Fund recently made a complete exit from its investment made in a Mumbai based housing project.

- The fund achieved its twin targets – of completing the project and redeeming its investment successfully. This is the first stalled project completed with funding from SWAMIH Fund.
- At the time of the launch of SWAMIH fund, many real estate projects that were near completion or two thirds completed were stalled because of last mile funding. Thus, the fund was launched in November 2019, to provide relief to real estate developers that require funding to complete their unfinished projects and ensure the timely delivery of homes to home-buyers.
- It has been set up as a **Category-II AIF** (Alternate Investment Fund) debt fund registered with SEBI.
- The **central government** through the **Department of Economic Affairs**, is the **sponsor** of the fund. It has infused **Rs 10,000 crore** in the fund. The fund is seeking matching contributions from Banks, LIC and others to generate a total corpus of around Rs 25,000 crore.
- **Investment Manager** of the fund is **SBICAP Ventures**, a wholly-owned subsidiary of SBI Capital Markets, which in turn is a wholly-owned subsidiary of the State Bank of India.
- **Funding shall be provided to the projects that meet the following criteria:**



### Alternative Investment Fund (AIF)

- As per, **Regulation Act, 2012** of SEBI, AIF is any fund incorporated in India which is a **privately pooled investment vehicle**.
- It collects funds from both Indian and foreign investors. Generally, high net worth individuals and institutions invest in AIFs as it requires a high investment amount, unlike Mutual Funds.
- It can be established in the **form of** a company or a corporate body or a trust or a Limited Liability Partnership (LLP).
- AIFs are divided into 3 unique categories – **Category I, Category II and Category III**.
- **Category-II AIF** are funds that do not borrow money other than to meet day-to-day operational requirements. Real estate funds, private equity funds (PE funds), funds for distressed assets are all Category-II AIF funds.

### Extension of Pradhan Mantri Krishi Sinchayee Yojana

- The Union government recently approved the extension of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) till 2026.
- Accelerated Irrigation Benefit Programme (AIBP), Har Khet ko Paani (HKKP) and Watershed Development components have also been approved for continuation till 2026.
- The extension will cost ₹93,068 crore and benefit 22 lakh farmers (including 2.5 lakh SC's and two lakh ST's farmers)

### PMKSY

- Launched in 2015, PMKSY is a **Centrally Sponsored Scheme**, providing central grants to state governments to improve farm productivity and to ensure better utilization of water resources in the country. Centre- States will be 75:25 per cent. In the case of the north-eastern region and hilly states, it will be 90:10.
- It was launched by subsuming ongoing schemes like: Accelerated Irrigation Benefit Programme (AIBP), River Development and Ganga Rejuvenation, Integrated Watershed Management Programme (IWMP) and On-Farm Water Management (OFWM).
- It is implemented in an **area development approach**, adopting decentralized state level planning and allowing the states to develop their irrigation development plans based on district/blocks plans.
- In 2020, the Ministry of Jal Shakti launched a mobile application for **Geo-Tagging** of the components of projects under PMKSY.

### Objectives of PMKSY

- Achieve convergence of investments in irrigation at the field level.
- Integration of water source, distribution and its efficient use.
- Improve on - farm water use efficiency to reduce wastage and increase availability both in duration and extent.
- Enhance the adoption of precision - irrigation and other water saving technologies.
- Ensure the integrated development of rain fed areas.

### PMKSY Components

<b>Accelerated Irrigation Benefit Programme (AIBP)</b>	<ul style="list-style-type: none"> <li>It was launched in 1996 with the aim of <b>accelerating the implementation</b> of irrigation projects that exceed the resource capabilities of states.</li> <li>Implemented by <b>Department of Water Resources, River Development and Ganga Rejuvenation</b>, AIBP provides central assistance to State Governments to <u>complete ongoing irrigation projects</u>.</li> <li>The inclusion criteria have been relaxed for projects under tribal and drought prone areas.</li> <li>Two large, long-pending projects - <b>Renukaji Dam project</b> in Himachal Pradesh and the <b>Lakhwar project</b> in Uttarakhand - will receive new funding.</li> </ul>
<b>Har Khet Ko Pani (HKKP)</b>	<ul style="list-style-type: none"> <li>It aims to create new water sources through Minor Irrigation.</li> <li>Implemented by <b>Department of Water Resources, River Development and Ganga Rejuvenation</b>, HKKP focuses on expanding physical access on farms and <u>increasing the cultivable area under assured irrigation</u>.</li> <li>HKKP consists of <b>four sub - components</b>:                     <div style="text-align: center; margin: 10px 0;"> <pre> graph LR     CAD[Command Area Development (CAD)] --&gt; SMI[Surface Minor Irrigation (SMI)]     SMI --&gt; RRR[Repair, Renovation and Restoration (RRR) of Water Bodies]     RRR --&gt; GWD[Ground Water Development]                     </pre> </div> </li> <li>Government has <u>expanded inclusion criteria for water body rejuvenation projects</u>, including both urban &amp; rural water bodies, enhancing Central assistance from 25% to 60%.</li> </ul>
<b>Watershed Development</b>	<ul style="list-style-type: none"> <li><b>Implemented by Department of Land Resources</b>, it aims to <u>conserve soil and water in rainfed areas</u> and regenerate ground water resources, prevent run-off and promote water harvesting.</li> </ul>
<b>Per Drop More Crop (PDMC)</b>	<ul style="list-style-type: none"> <li>Implemented by <b>Department of Agriculture, Cooperation and Farmers Welfare</b>, PDMC focuses on efficient water conveyance (transportation) and precision water application devices like drips, sprinklers, pivots, rain - guns in the farm.</li> </ul>

**Ban On Agri Derivative Contracts**

SEBI has recently suspended trading in derivative contracts in seven key farm commodities namely, [paddy (non-basmati), wheat, chana, mustard seeds, soya bean, crude palm oil and moong] for a year.

**Derivative Contracts**

- Derivative contracts are between two or more parties where the derivative value is based upon an underlying asset, in this case agri commodities.
- The prices of the derivatives are established by the price fluctuations of the underlying assets.
- Derivative trading takes place when **traders speculate on future price** of an asset through buying or selling of derivative contracts to maximise profit, as compared to actually buying the underlying asset right away.
- Derivatives can be traded on an exchange or over the counter (OTC). The exchange on which the trading takes place **guarantees for the quality of goods and financial commitment**.
- Commodity derivative markets have an immense potential in the Indian economy as they enable price discovery, facilitate better risk management, act as a price barometer for agriculture commodities and help in price integration.

**Sukhet Model**

- The Prime Minister recently praised the Sukhet model of **Bihar's Madhubani district**. The model is named after Sukhet village, where it is being implemented by Dr Rajendra Prasad Central Agriculture University.
- Under it, **dung** and **household waste** are collected from households and then it is converted into vermicompost (organic manure).
- In exchange, income generated from the sale of organic manure is used to provide LPG cylinders for free to these households, once every two months.
- It ensures a pollution-free environment at home, waste disposal, monetary assistance for LPG cylinders and availability of organic fertiliser to the local farmers.

**Pearl Farming Promotion**

- TRIFED (Tribal Co-operative Marketing Development Federation of India), an agency under the Tribal Affairs Ministry which markets and promotes tribal products, recently signed an agreement with Jharkhand based **Purty Agrotech** for promotion of pearl farming in tribal areas.
- As part of the agreement, Purty Agrotech pearls will be sold through 141 Tribes India outlets, apart from various e-commerce platforms.
- Purty Agrotech's centre will be developed into a **Van Dhan Vikas Kendra Cluster (VDVKC)**. Besides, there is a plan to develop 25 such VDVKCs for pearl farming in Jharkhand.
- TRIFED has also signed an agreement with e-grocery platform **Big Basket** to promote and sell hand-made authentic forest products sourced from tribals.

**Pearl Farming**

- Pearls are the **only gemstones** in the world that come from a **living creature**. **Mollusks** such as oysters and mussels produce these precious jewels. In saltwater, pearls are found in oysters, while in freshwater they are produced by mussels.
- The time taken for a pearl to develop depends on a variety of factors. Generally **freshwater types** form a **lot faster** than the saltwater ones.
- Pearl oysters are farmed in a number of countries in the production of cultured pearls.

**Van Dhan Vikas Yojana**

- Van Dhan Scheme, a component of ‘**MSP for MFP**’, was launched in 2018.
- An initiative targeting livelihood generation for tribal gatherers and transforming them into entrepreneurs.
- The idea is to set-up **tribal community-owned** Van Dhan Vikas Kendra Clusters (VDVKCs) in predominantly forested tribal districts.
- VDKCs are for providing **skill upgradation and capacity building training** to tribals and setting up of primary processing and value addition facilities.

**MSP for MFP**

- Mechanism for Marketing of Minor Forest Produce (MFP) Through Minimum Support Price (MSP) and Development of Value Chain for MFP.
- The scheme formed a system to ensure fair monetary returns of the gatherers for their endeavour in collection, primary processing, storage, packaging, transportation, etc.
- MFP includes all non-timber forest produce of plant origin and includes bamboo, canes, fodder, leaves, gums, waxes, dyes, resins and many forms of food including nuts, wild fruits, honey, lac, tusser etc.

**Dairy Sahakar Scheme**

- The government recently launched the Dairy Sahakar scheme to encourage **cooperative dairy businesses** in the country. It will initially be implemented from 2021-22 to 2025-26 for a period of five years.
- The scheme with a total investment of Rs 5000 crore will be implemented **by National Cooperative Development Corporation (NCDC) under Ministry of Cooperation** to realize the vision, “**from cooperation to prosperity**”.
- The scheme will **provide financial support** extended by NCDC **to eligible cooperatives** for activities such as bovine development, milk procurement, processing, quality assurance, value addition, marketing and branding, exports etc.
- Period of loan will be for 5-10 years, including 1-2 years of moratorium on repayment of principal, depending on the type of project and revenue streams.
- There is no minimum or maximum limit on financial assistance to projects by eligible cooperatives.

**Preserving Landraces**

- **Rahibai Popere**, popularly known as **Seed mother**, from Ahmednagar, Maharashtra was recently awarded the **Padma Shri**, for her work that has **helped save hundreds of landraces** (wild varieties of commonly grown crops) at the village level.
- Landraces refer to **naturally occurring** variants of commonly cultivated crops.
- Landraces are unlike commercially grown crops, which are developed by selective breeding (hybrids) or through genetic engineering to express a certain trait over others.

**Financial Outlay For National Mission On Edible Oil-Oil Palm (NMEO-OP)**

- The Centre has increased the financial outlay for the National Mission on Edible Oil-Oil Palm (NMEO-OP).
- **Aims:** To **harness domestic edible oil prices** that are dictated by expensive palm oil imports and to **raise domestic production of palm oil** by three times to 11 lakh MT by 2025-26 & 16.7 lakh hectares by 2029-30.

- There is a sunset clause for the scheme which is 1st November 2037.
- Special emphasis of the scheme will be in **India's north-eastern states and the Andaman and Nicobar Islands** due to the conducive weather conditions in the regions.

### Some Facts

- India is the **largest consumer of vegetable oil in the world**. Of this, palm oil imports are almost 55% of its total vegetable oil imports.
- India **produces less than half of the roughly 2.4 crore tonnes of edible oil that it consumes annually**.
- Palm oil is currently the **world's most consumed vegetable oil**.
- Top consumers of the palm oil are India, China, and the European Union (EU).

### National Mission on Oilseeds and Oil Palm (NMOOP)

- It was implemented during the **12<sup>th</sup> Five Year Plan**, to expand the oil palm areas and increase the production of edible oils. Later merged with the **National Food Security Mission**.
- The expenditure was shared between Central and State Governments in the ratio of **90:10** for Assam, Arunachal Pradesh, Nagaland and Mizoram and **60:40** for the remaining States.
- Objective: To augment the availability of edible oils and reduce the import of edible oils by increasing the production and productivity of oilseeds and oil palm.

### Bhartiya Prakritik Krishi Padhati (BPKP)

- Government is implementing Bhartiya Prakritik Krishi Padhati (BPKP) as a sub scheme of **Paramparagat Krishi Vikas Yojana (PKVY)** since 2020-21 for the promotion of traditional indigenous practices.
- It mainly emphasizes on exclusion of all synthetic chemical inputs and promotes on-farm biomass recycling with major stress on biomass mulching; use of cow dung-urine formulations; plant-based preparations and time to time working of soil for aeration.
- Under BPKP, **financial assistance of Rs 12,200/ha for 3 years** is provided for cluster formation, capacity building and continuous handholding by trained personnel, certification and residue analysis.

### Paramparagat Krishi Vikas Yojana

- It is an elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (**NMSA**).
- Under PKVY, **Organic farming** is promoted through adoption of **organic village** by cluster approach and PGS certification.

### Certifications

- FSSAI is the food regulator in the country and is also responsible for regulating **organic food in the domestic market and imports**.
- **Participatory Guarantee System (PGS)**: It is a process of certifying organic products, which ensures that their production takes place in accordance with laid-down quality standards. PGS Green is given to chemical free produce under transition to 'organic' which takes 3 years. It is mainly for domestic purpose.
- **National Program for Organic Production (NPOP)**: It grants organic farming certification through a process of **third party certification for export purposes**.

### 'Beed Model' Of Crop Insurance

- To attract the insurance companies, the Maharashtra state Agriculture Department decided to tweak the PMFBY guidelines for the district (Beed).

- Under new guidelines, the insurance company provided a cover of **110% of the premium collected**, with caveats. If the compensation exceeded the cover provided, the state government would pay the bridge amount. If the compensation was less than the premium collected, the insurance company would keep 20% of the amount as handling charges and reimburse the rest to the state government.
- In Beed model, profit of the company is expected to reduce and the state government would access another source of funds. The reimbursed amount can lead to lower provisioning by state for the following year, or help in financing the bridge amount in case of a year of crop loss.

**Central Government Has Hiked MSP For Common Paddy, Pulses, Oilseeds And Coarse Cereals**

- The decision was taken by the **Cabinet Committee on Economic Affairs**. CCEA is chaired by the PM of India.
- The Minimum Support Price (MSP) is the rate at which the government purchases crops from farmers, and is based on a calculation of at least **one-and-a-half times** the cost of production incurred by the farmers.
- The MSP is fixed twice a year on the recommendations of the **Commission for Agricultural Costs and Prices (CACP)**, which is a **statutory body** and submits separate reports recommending prices for kharif and rabi seasons.
  - The Commission for Agricultural Costs and Prices (CACP) is an attached office of the Ministry of Agriculture and Farmers Welfare. It is an advisory body whose recommendations are not binding on the Government.

- The CACP considers both **'A2+FL' and 'C2'** costs while recommending MSP.
- A2 costs cover all paid-out expenses, both in cash and kind, incurred by farmers on seeds, fertilisers, chemicals, hired labour, fuel and irrigation, among others.
- A2+FL covers actual paid-out costs plus an imputed value of unpaid family labour.
- The C2 costs account for the rentals and interest forgone on owned land and fixed capital assets respectively, on top of A2+FL.

**Difference Between FRP and MSP**

	<b>Fair and Remunerative Price (FRP)</b>	<b>MSP</b>
<b>Definition</b>	FRP is the minimum price at which sugarcane is to be purchased by sugar mills from farmers.	MSP is a “minimum price” for any crop that the government considers as remunerative for farmers and hence deserving of “support”. It is also the price that government agencies pay whenever they procure the particular crop.
<b>Recommended by</b>	<b>CACP</b>	<b>CACP</b>
<b>Mandated Crops</b>	<b>Sugarcane</b>	Include 14 crops of the kharif season, 6 rabi crops and other commercial crops.
<b>Legal Backing</b>	The pricing of sugarcane is governed by the statutory provisions of the <b>Sugarcane (Control) Order, 1966</b> issued under the <b>Essential Commodities Act (ECA), 1955</b> .	MSP is an obligatory, not a statutory exercise. Currently, there is <b>no statutory backing</b> for MSP or any law mandating their implementation.

**Price of Sugar**

- Prices of sugar are market driven & depend on demand & supply of sugar. However, with a view to protect the interests of farmers, the concept of **Minimum Selling Price (MSP)** of sugar was introduced in 2018 so that industry may get at least the minimum cost of production of sugar, so as to enable them to clear cane price dues of farmers.
- MSP of sugar has been fixed taking into account the components of **Fair & Remunerative Price**. (FRP - It is the minimum price at which sugarcane is to be purchased by sugar mills from farmers of sugarcane and minimum conversion cost of the most efficient mills.)
- The State Advised Prices (SAP) is announced by key sugarcane producing states which are generally higher than FRP. FRP is announced by Union Government.

**Aroma Mission**

- Union Minister of State Science & Technology has proposed **Integrated Aroma Dairy Entre-preneurship** for Jammu & Kashmir to augment the income of farmers.
- The Aroma Mission, referred as “**Lavender or Purple Revolution**”, has started from J&K and transformed the lives of farmers who are able to grow lavender, make lucrative profit and improve their lives.
- **Objective:** To promote the cultivation of **aromatic crops for essential oils** that are in great demand by the aroma industry.
  - ✓ To enable Indian farmers and the aroma industry to become global leaders in the **production and export** of some other essential oils on the pattern of menthol mint.
- The nodal laboratory is **CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow**.
- The participating laboratories are CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur; CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu etc.
- The scientific interventions made under the mission project provided assured benefits to the growers of Vidarbha, Bundelkhand, Gujarat, Marathwada, Rajasthan, Andhra Pradesh, Odisha and other states **where farmers are exposed to frequent episodes of weather extremes and account for maximum suicides**.
- **Aromatic Plants** include lavender, damask rose, mushkbala, etc.

**KVIC's Unique Project BOLD to Boost Tribals' Income and Bamboo-based Economy in Rajasthan (Udaipur)**

- **Project BOLD (Bamboo Oasis on Lands in Drought)**, which seeks to create bamboo-based green patches in arid and semi-arid land zones, is aligned with reducing land degradation and preventing desertification in the country.
- KVIC has judiciously chosen bamboo for developing green patches. Bamboos grow **very fast and in about three years' time**, they could be harvested. Bamboos are also known for conserving water and reducing evaporation of water from the land surface, which is an important feature in arid and drought-prone regions.
- Special bamboo species – **Bambusa Tulda and Bambusa Polymorpha** specially brought from Assam – have been planted.

**Import Of Crushed Genetically Modified (GM) Soybean Allowed**

- Union government has decided to allow the import of **crushed genetically modified (GM) soybean**, which is a major ingredient of poultry feed.

- A GM or transgenic crop is a plant that has a novel combination of genetic material obtained through the use of modern biotechnology. It can contain a gene(s) that has been artificially inserted instead of the plant acquiring it through pollination.
- Genetic Engineering Appraisal Committee (**GEAC**) is the apex body that allows for **commercial release** of GM crops. GEAC, under the Environment Ministry, assess the safety of a genetically modified plant, and decide whether it is fit for cultivation. The GEAC comprises experts and government representatives, and a decision it takes has to be approved by the Environment Minister before any crop is allowed for cultivation.
- **FSSAI** is the authorized body to regulate the **imported crops** in India.

**Other GM crops**

- **Bt cotton** is the **only GM** crop that is allowed in India. It has alien genes from the soil bacterium *Bacillus thuringiensis* (Bt) that allows the crop to develop a protein toxic to the common pest **pink bollworm**.
  - **Herbicide Tolerant Bt (Ht Bt) cotton**, is derived with the insertion of an additional gene, from another soil bacterium, which allows the plant to resist the common herbicide glyphosate.
- In **Bt brinjal**, a gene allows the plant to resist attacks of fruit and shoot borers.
- **DMH-11 mustard**, genetic modification allows cross-pollination in a crop that self-pollinates in nature.

**World's 1st GM Rubber Sapling**

- World's first genetically modified (GM) rubber sapling was recently planted at Rubber Board's **Sarutari Research farm** on the outskirts of **Guwahati in Assam**.
- With additional copies of the gene **MnSOD (manganese-containing superoxide dismutase)** inserted in it, the GM rubber is expected to **tide over the severe cold conditions during winter**, which is a major factor affecting the growth of rubber saplings.
- It was developed at the Kerala-based Rubber Research Institute of India (RRII).

**Ministry Of Commerce And Industry Announced That The First Consignment Of Organic Millets Would Be Exported To Denmark**

- The first consignment of millets was produced in the Himalayas from snow-melt water of the Ganges in Uttarakhand. These meet the certification standards of EU.
- APEDA, in collaboration with Uttarakhand Agriculture Produce Marketing Board (UKAPMB) & Just Organik, an exporter, has sourced & processed ragi (finger millet), and jhingora (barnyard millet) from farmers in Uttarakhand for exports.
- Millets are gaining a lot of popularity globally because of their **high nutritive values & being gluten-free**.
- Organic products are exported provided they are produced, processed, packed and labelled as per the requirements of the **National Programme for Organic Production (NPOP)**.
- NPOP, launched in 2000, is implemented by the Agricultural and Processed Food Products Export Development Authority (APEDA). NPOP launched for farm and livestock certification for organic commodities was the first milestone for organic quality assurance system in the country.

**APEDA**

- It was established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act, 1985.
- It functions under the **Ministry of Commerce and Industry** and has its headquarters in New Delhi.
- It has been mandated with the responsibility of export promotion and development of the scheduled products viz. fruits, vegetables, meat products, dairy products, alcoholic and non-alcoholic beverages etc.

- Also been entrusted with the responsibility to monitor import of sugar.

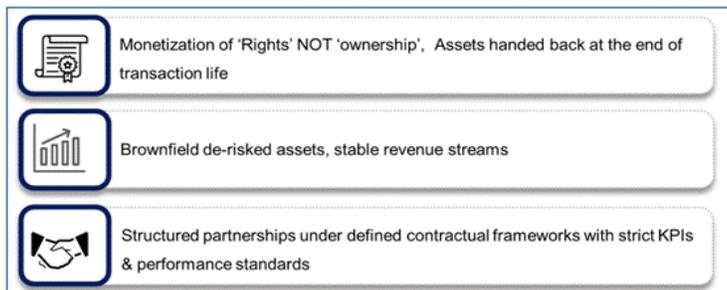
### One Nation One Ration Card (ONORC)

- The Supreme Court has directed all states and UTs to implement One Nation, One Ration Card system.
- The ONORC scheme is aimed at enabling migrant workers and their family members to buy subsidised ration from any fair price shop anywhere in the country under the National Food Security Act, 2013.
- ONORC was launched in August, 2019. Till date, 32 States and Union Territories have joined ONORC, covering about 69 crore NFSA beneficiaries. Four states are yet to join the scheme — **Assam, Chhattisgarh, Delhi and West Bengal.**
- ONORC is based on technology that **involves details of beneficiaries' ration card, Aadhaar number, and electronic Points of Sale (ePos).** The system identifies a beneficiary through biometric authentication on ePos devices at fair price shops. The system runs with the support of two portals — **Integrated Management of Public Distribution System (IM-PDS) and Annavitran**, which host all the relevant data.
  - While the Annavitran portal maintains a record of **intra-state transactions** (inter-district and intra-district), the IM-PDS portal records the inter-state transactions

The National Food Security Act, 2013 (NFSA 2013) converts into legal entitlements for existing food security programmes of the Government of India. It includes the Midday Meal Scheme, Integrated Child Development Services scheme and the Public Distribution System. It recognizes maternity entitlements. The Act relies largely on the existing TPDS to deliver food grains as legal entitlements to poor households.

### National Monetization Pipeline

- The Union Finance Minister has launched the National Monetization Pipeline for the **Brownfield infrastructure** assets. It will serve as a medium-term roadmap for the **Asset Monetization** initiative of the government, apart from providing visibility for the investors.
- **The four-year National Monetization Pipeline (NMP)** will unlock value in brownfield projects by engaging the private sector, transferring to them the **rights but not the ownership** in projects.
- Currently, only assets of central government line ministries and CPSEs in infrastructure sectors have been included.
- Monetization through disinvestment and monetization of non-core assets have not been included in the NMP.



### Monetization

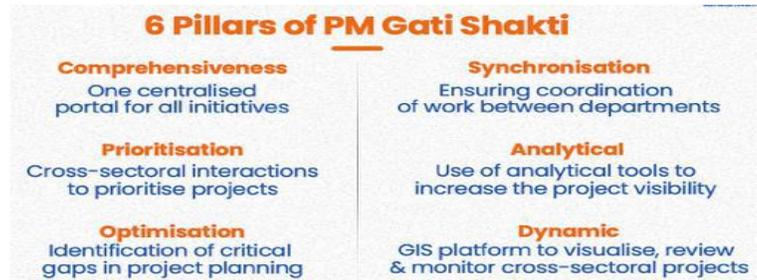
In a monetisation transaction, the government is basically **transferring revenue rights to private parties for a specified transaction period** in return for upfront money, a revenue share, and commitment of investments in the assets.

**Greenfield Project:** It refers to investment in a manufacturing, office, or other physical company-related structure or group of structures in an area where no previous facilities exist.

**Brownfield investment:** The projects which are modified or upgraded are called Brownfield projects. The term is used for purchasing or leasing existing production facilities to launch a new production activity.

**Gati Shakti**

- Prime Minister has recently launched **Rs 100 lakh crore** Gati Shakti – *National Master Plan for Multi-Modal Connectivity*. It is aimed at developing **easier interconnectivity** between road, rail, air and waterways for an **integrated economy** in **next 4 years**.
- Infrastructure creation in India has suffered for decades from multiple issues. There is lack of coordination between different departments. Under Gati Shakti, a **digital platform** has been created which will bring **16 ministries** including rail and roadways together for integrated planning and coordinated implementation of infrastructure connectivity projects.
- It also aims to have **11 industrial corridors** and **2 new defence corridors** - one in Tamil Nadu and other in Uttar Pradesh. Extending 4G connectivity to all villages is another aim.
- The platform will provide **high resolution satellite images**, infrastructure, utilities, administrative boundaries, land and logistics.
- It will subsume the infrastructure schemes of various Union ministries and state governments — Bharatmala, Sagarmala, UDAN, inland waterways, dry/land ports etc.
- Zones like textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones will be covered to improve connectivity & make Indian businesses more competitive.
- It will build upon the **National Infrastructure Pipeline (NIP)**.



**National Infrastructure Pipeline (2019-25)**

It provides for an outlay of Rs 102 lakh Crore for infrastructure projects over the next 5 years, with the Centre, States, and the private sector to share the capital expenditure in a **39:39:22 formula**

**Bharat Net 3**

Tamil Nadu FibreNet Corp signs agreement for BharatNet project implementation. The project aims at providing 1 Gbps bandwidth connectivity to all Gram Panchayats.

- BharatNet Project was originally launched in 2011 as the National Optical Fibre Network (NOFN) and renamed as Bharat-Net in 2015.
- It is a flagship mission implemented by **Bharat Broadband Network Ltd. (BBNL)**.
- The objective is to facilitate the delivery of e-governance, e-health, e-education, e-banking, Internet and other services to rural India.
- The larger vision of the project is to provide on demand, affordable broadband connectivity of **2 Mbps to 20 Mbps** for all households and on demand capacity to all institutions.
- It is being financed by the **Universal Service Obligation Fund** of the Department of Telecommunications, through a 5 per cent levy on the revenues of private telecom service providers.

**Revised Implementation Strategy Of Bharatnet**

- It will be implemented in **PPP mode**. The government will provide Rs 19,041 crore as viability gap funding for the project. BharatNet will now extend up to **all inhabited villages** beyond gram panchayats (GPs) in 16 states.
- It includes creation, upgradation, operation, maintenance and utilisation of BharatNet by the concessionaire who will be selected by a competitive international bidding process.

**Phases**

**1st Phase:** Provide one lakh gram panchayats with broadband connectivity by laying underground Optic Fibre

Cable (OFC) lines by December 2017.

**2nd Phase:** Provide connectivity to all the gram panchayats in the country using an optimal mix of underground fibre, fibre over power lines, radio and satellite media by March 2019.

**3rd Phase:** From 2019 to 2023, a state-of-the-art, future-proof network, including fibre between districts and blocks, with ring topology to provide redundancy would be created.

### Yuktdhara

- The government launched a new geospatial planning portal called 'Yuktdhara', under **Bhuvan**, for facilitating Gram Panchayat level planning of MGNREGA.
- Launched by the **Ministry of Rural Development and Panchayati Raj**. It is a culmination of joint efforts of ISRO and the Ministry of Rural development.
- It will act as a **repository of assets (Geotags)** created under various *national rural development programmes* i.e. MGNREGA, Integrated Watershed Management Programme, Per Drop More Crop and Rashtriya Krishi Vikas Yojana, etc

### Bhuvan Portal

- It is a web portal used to find and access geographic information (geospatial information) and associated geographic services (display, editing, analysis, etc.) via the Internet.
- It shows the true borders of country as per the information available from the Government of India.
- By using **MapmyIndia maps** and applications instead of the foreign map apps, users can better protect their privacy.

### Phase-2 of SPR Programme

- Under Phase I of **Strategic Petroleum Reserves (SPR) programme**, Government of India, through its Special Purpose Vehicle *Indian Strategic Petroleum Reserve Limited (ISPRL)*, has established petroleum storage facilities.
- Strategic petroleum reserves are huge stockpiles of **crude oil** to deal with any crude oil-related crisis like the risk of supply disruption from natural disasters, war or other calamities.
- ISPRL, a Special Purpose Vehicle, is a wholly owned subsidiary of Oil Industry Development Board (OIDB) under the Ministry of Petroleum & Natural Gas.

GoI has set up **5.33 MMT** of strategic crude oil storages in **SPR Phase-I** at following **3 locations**:

- Vishakhapatnam - 1.33 MMT
- Mangalore - 1.5 MMT
- Padur - 2.5 MMT

Another **6.5 MMT** of strategic crude reserves is being planned in **SPR Phase-II** at :

- Chandikhole, Odisha (4 MMT);
- Padur, Karnataka (2.5 MMT)

### Saryu Canal National Project

- Prime Minister recently inaugurated the **Saryu Canal National Project** in Balrampur district of Uttar Pradesh.
- The work on the project **started in 1978** but due to lack of continuity of budgetary support, interdepartmental coordination and adequate monitoring, it got **delayed** and was not completed.
- Consequently in 2016, the project was brought under Pradhan Mantri Krishi Sinchayee Yojana with a target to complete it in a time-bound manner.
- The project involves **interlinking of five rivers** – Ghaghara, Saryu, Rapti, Banganga and Rohin. It starts from the Saryu Barrage at Bahraich. The main canal is **318 km long** and many sub canals with a length of over 6600 kilometres have been linked to it.
- It has been completed at a cost of around 10 thousand crore rupees.

- It will benefit the following nine districts in Eastern Uttar Pradesh – Bahraich, Shravasti, Balrampur, Gonda, Siddharthnagar, Basti, Sant Kabir Nagar, Gorakhpur and Maharajganj.

**Wage Rate Index**

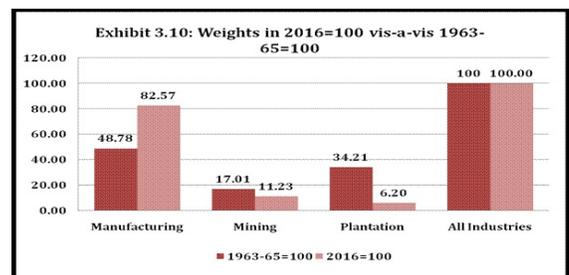
- The **Ministry of Labour** recently released a **new series of Wage Rate Index (WRI)** with **base year 2016**, being compiled and maintained by the **Labour Bureau**.
- The new series of WRI will replace the old series with base 1963-65.
- The base year of WRI has been revised to enhance the coverage and to make index more representative.
- The changes will be crucial in policy making and coming up with **minimum wages and national floor wages** along with other parameters.

A floor wage is a minimum wage established by law. It functions as a benchmark for wages to ensure that the **wages do not fall below the set limit**. The current floor wage, which was fixed in 2017, is at Rs 176 a day, but some states have minimum wages lower than it

**Highlights of New WRI**

- The new series of WRI has increased the scope and coverage in terms of number of industries, sample size, occupations under selected industries, weightage of industries etc.
- It presents wage rate indices, average daily absolute wage rates and real wages at 2001 prices by occupation, industry and all-India level.
- It would be compiled twice a year on half-yearly basis, on January 1 and July 1.
- In the new series, the **oil mining industry has been introduced** in the basket in place of **mica mines industry**, to make the mining sector more representative of 3 different kinds of mining namely coal, metal and oil.
- Total 3 plantation industries (tea, coffee and rubber) have been retained in the new WRI basket with enhanced coverage

Sector	No of Industries covered	
	1963-65	2016
Manufacturing	14	30
Mining	4	4
Plantation	3	3
<b>Total</b>	<b>21</b>	<b>37</b>



**'Right To Repair' Movement And Planned Obsolescence**

- Electronic manufacturers are encouraging a culture of 'planned obsolescence' — which means that devices are designed specifically to last a limited amount of time and to be replaced.
- Consumers, more often than not, are left at the mercy of manufacturers who make repairs.
- Right to Repair** is the right of consumers to be able to repair their own electronics and other products. The goal of the movement is to get companies to make spare parts, tools and information on how to repair devices available to customers and repair shops to increase the lifespan of products and to keep them from ending up in landfills.

**India Industrial Land Bank (IILB)**

- It is a **GIS-based portal** with all industrial infrastructure-related information such as connectivity, infra, natural resources and terrain, plot-level information on vacant plots, line of activity, and contact details.
- It is under the Department for Promotion of Industry and Internal Trade (**DPIIT**).

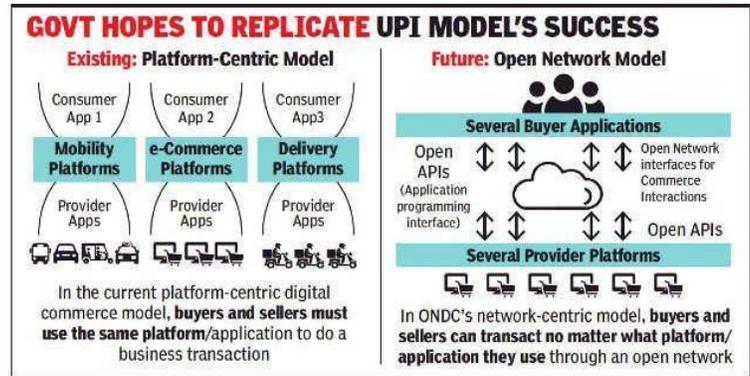
- It acts as a one-stop repository of all industrial infrastructure-related information.
- It serves as a decision support system for investors scouting for land remotely. It has around 4,000 industrial parks mapped across an area of 5.5 lakh hectare of land.

### Open Network for Digital Commerce (ONDC) by DPIIT

- **Department for Promotion of Industry and Internal Trade (DPIIT)** launched a project called ONDC which aims at promoting open networks developed on open sourced methodology, using open specifications and open network protocols independent of any specific platform.

- The task has been **assigned to Quality Council of India (QCI)**. ONDC is expected to digitize the entire value chain, standardize operations, promote inclusion of suppliers, derive efficiencies in logistics and enhance value for consumers.

- ONDC will be compliant with the information technology act, 2000.



### Production-linked Incentive (PLI) Scheme for Specialty Steel

- Specialty steel is **value-added steel wherein normal finished steel is worked upon by way of coating, plating, heat treatment, etc.** to convert it into high-value-added steel used in various strategic applications like Defense, Space, Power, apart from the automobile sector, specialized capital goods among others.
- The **five categories** of specialty steel that have been chosen in the PLI Scheme are: Coated/Plated Steel Products, High Strength/Wear-resistant Steel, Specialty Rails, Alloy Steel Products, and Steel wires, and Electrical Steel.
- The duration of the scheme is from 2023-24 to 2027-28 (**five years**) with an aim to boost the production of high-grade specialty steel in the country. There are 3 slabs of PLI under the scheme, the lowest being 4% and highest being 12%.

As the name suggests, the scheme provides incentives to companies for enhancing their domestic manufacturing apart from focusing on reducing import bills and improving the cost competitiveness of local goods. **PLI scheme offers incentives on incremental sales for products manufactured in India.**

### PM MITRA Parks

- Union Cabinet recently approved a scheme to set up 7 **Mega Integrated Textile Region and Apparel (PM MITRA) parks**, with a total outlay of ₹4,445 crore in the next 5 years.
- First announced in Union Budget 2021, PM MITRA is designed to make the textile industry globally competitive.
- Aims to create an **integrated textiles value chain** from spinning, weaving, processing/dyeing and printing to garment manufacturing at **one location**.

► Inspired by 5F vision of PM Modi – **Farm to Fibre to Factory to Fashion to Foreign**

► To be developed by a Special Purpose Vehicle owned by **State Government and Government of India** in PPP mode

- A contest through a **transparent challenge route** will be conducted to select the 7 regions for parks. The **parameters** for selection will be cheap land, adequate electricity and water supplies, a stable labour situation, skilled manpower etc.

### Support Under The Scheme

- Centre will provide **Development Capital Support** for the development of common infrastructure (@30% of the project cost) with a cap of Rs 500 crore for each green-field MITRA park and up to Rs 200 crore for each brownfield park.
- An additional Rs 300 crore will be provided as **Competitiveness Incentive Support (CIS)** for the early establishment of textiles manufacturing units in each of these parks. Under CIS, a maximum support of Rs 10 crore per year for a maximum of three years will be provided to such anchor (early) investors.
- State Government support will include provision of **1,000 Acre land** for development of a world class industrial estate.

### RoDTEP Scheme

- Remission of Duties and Taxes on Exported Products (RoDTEP) is a scheme for Exporters to make Indian products cost-competitive and create a level playing field for them in the Global Market.
- It will replace the earlier **Merchandise and Services Export Incentive Schemes** (MEIS and SEIS) that were in violation of WTO norms.
  - The MEIS scheme provided additional benefits of 2% to 7% on the Freight On Board (FOB) value of eligible exports.
  - As per the WTO norms, a country can't give export subsidies like MEIS if Per capita income is above 1000 USD and India's Per Capita Income crossed above 1000 USD in 2017. India subsequently lost the case at WTO and had to come up with a new WTO compliant scheme to help Indian exporters.
- New RoDTEP Scheme is a fully WTO compliant scheme.
- The tax refund rates range from 0.5% to 4.3% for various sectors. The rebate will have to be claimed as a percentage of the Freight On Board value of exports.
- It will reimburse all the taxes/duties/levies being charged at the Central/State/Local level which are not currently refunded under any of the existing schemes but are incurred at the manufacturing and distribution process.
- Rebates will be issued in the form of a **transferable duty credit/electronic scrip (e-scrip)** which will be maintained in an electronic ledger by the Central Board of Indirect Taxes and Customs (CBIC)
- For garment exporters, the Rebate of State and Central Levies and Taxes (RoSCTL) Scheme has been notified separately.

### Freight on Board

- Also called Free on Board (FOB) is a term used to indicate who is liable for goods damaged or destroyed during shipping.
- "FOB origin" means the buyer is at risk and takes ownership of goods once the seller ships the product.
- "FOB destination" means the seller retains the risk of loss until the goods reach the buyer.

### Factoring Regulation (Amendment) Bill 2020

Factoring is a transaction where an entity (like MSMEs) 'sells' its receivables (dues from a customer) to a third party (a 'factor' like a bank or NBFC) for immediate funds (partial or full). It has incorporated many suggestions from the **UK Sinha Committee**.

**Key Amendments**

- The Bill has *done away with threshold for NBFCs to get into the factoring business.*
- It widens the scope of financiers and to permit other NBFCs also to undertake factoring business and participate on the **Trade Receivables Discounting System (TReDS) platform for discounting the invoices of MSMEs.**
- It reduces the time period for registration of invoice and satisfaction of charge upon it.
- It **empowers the Reserve Bank of India to make regulations with respect to factoring business.**

**‘Pre-packs’ as an Insolvency Resolution Mechanism For Micro, Small And Medium Enterprises (MSMEs)**

- A pre-pack is an agreement for the resolution of the debt of a distressed company through an agreement between **secured creditors and investors** instead of a public bidding process.
- Such a system will require that **financial creditors** (at least 66% of them) agree on terms with potential investors and seek approval of the resolution plan from the National Company Law Tribunal (NCLT).
- The **pre-pack is limited to a maximum of 120 days with only 90 days** available to stakeholders to bring a resolution plan for approval before the NCLT.
- Pre-packs can address Slow progress in the resolution of distressed companies which has been one of the key issues raised by creditors regarding the Corporate Insolvency Resolution Process (CIRP) under the IBC.

**SAMBHAV Programme**

- Ministry of Micro, Small and Medium Enterprises (MSME) recently launched the SAMBHAV programme.
- It is a **national level awareness programme** to promote entrepreneurship and boost domestic manufacturing to push economic growth.
- Awareness programs will be conducted in more than **1,300 colleges/ITIs** across the country in which 1,50,000 students are expected to participate.
- College students will also be made aware of various schemes being implemented by the Ministry of MSME.

**Maharatna Status For Power Finance Corporation**

- Department of Public Enterprises, under Ministry of Finance issued **Maharatna Status** to state-owned Power Finance Corporation (PFC). PFC is the largest infrastructure finance company dedicated to the power sector under the administrative control of **Ministry of Power.**
- PFC has become 11th public sector enterprise to get ‘Maharatna’ status

**Criteria For Grant Of Maharatna Status**

- Central Public Sector Enterprises (CPSEs) fulfilling the following criteria are eligible for the grant of Maharatna status:

- **Having Navratna status & listed on Indian stock exchange with minimum prescribed public shareholding.**
- **Average annual turnover of more than Rs 25,000 crore during last 3 years**
- **Average annual net profit after tax of more than Rs. 5,000 crore, during last 3 years.**
- **Average annual net worth of more than Rs. 15,000 crore, during the last 3 years**
- **It should also have significant global presence/international operations**

**Impact of Maharatna Status**

- It will give more powers to the **PFC Board** while taking financial decisions.
- Board can make equity investments to undertake financial joint ventures and wholly owned subsidiaries. It can also undertake mergers and acquisitions in India and abroad, subject to a ceiling of 15% of the net worth of the concerned CPSE, limited to Rs.5,000 crore in one project.
- Board can also structure & implement schemes related to personnel & human resource management & training. They can also enter into technology Joint Ventures or other strategic alliances.
- It will enable PFC to offer competitive financing for the power sector and facilitate affordable & reliable **‘Power For All 24x7’**.

**Revamped Distribution Sector Scheme for DISCOMS**

- It seeks to improve the operational efficiencies and financial sustainability of all DISCOMs/Power Departments excluding Private Sector DISCOMs by providing conditional financial assistance.
- Objectives:
  - Reduction of AT&C losses (operational losses due to inefficient power system) to pan-India levels of 12-15% by 2024-25.
  - Reduction of cost-revenue gap to zero by 2024-25.
- Implementation of the Scheme would be based on the action plan worked out for each state rather than a “one-size-fits-all” approach.
- The scheme involves a **compulsory smart metering ecosystem** across the distribution sector—starting from electricity feeders to the consumer level.
- The Scheme has a **major focus on improving electricity supply for the farmers** and for providing daytime electricity to them through solarization of agricultural feeders (converges with **PM-KUSUM Scheme**).
- Existing power sector reforms schemes such as **Integrated Power Development Scheme, Deen Dayal Upadhyaya Gram Jyoti Yojana**, and **Pradhan Mantri Sahaj Bijli Har Ghar Yojana**, Ujwal Discom Assurance Yojana (UDAY) will be merged into this umbrella program.
- The scheme will be available till 2025-26.
- Nodal Agencies: Rural Electrification Corporation and Power Finance Corporation.
- Leveraging Technology: Artificial Intelligence would be leveraged to prepare system generated energy accounting reports.

**Integrated Power Development Scheme (IPDS):** Launched in 2014 by Ministry of Power with the objectives of strengthening of sub-transmission and distribution network in urban areas, metering of distribution transformers /feeders / consumers in the urban areas and IT enablement of distribution sector and strengthening of distribution network under R-APDRP. Power Finance Corporation (PFC) is the Nodal agency for implementation of the scheme.

**Restructured Accelerated Power Development and Reforms Programme (R-APDRP):** Launched in July 2008 with focus on establishment of base line data, fixation of accountability, reduction of AT&C losses upto 15% level through strengthening & up-gradation of Sub Transmission and Distribution network and adoption of Information Technology during XI Plan.

**Kisan Urja Suraksha Evam Utthaan Mahaabhiyan Or PM KUSUM Scheme**

- It is initiative of the Ministry of New and Renewable Energy (**MNRE**).
- PM-KUSUM consists of three components and aims to add a **solar capacity of 30.8 GW by 2022**.

- ✓ **Component A:** 10,000 MW of decentralised ground-mounted grid-connected renewable power plants.
- ✓ **Component B:** Installation of two million standalone solar-powered agriculture pumps.
- ✓ **Component C:** Solarisation of 1.5 million grid-connected solar-powered agriculture pumps.



### Task Force For Coal Based Hydrogen Production

- The Union Government constituted a **Task force and Expert committee** to prepare a road map for **coal-based hydrogen production (Black Hydrogen)**. The Task Force is also responsible for **coordination** with the **Coal Gasification Mission** and **NITI Aayog**.

### Coal Gasification

- It chemically transforms fossil fuel into Synthetic Natural Gas (SNG), instead of burning fossil fuel.
- **Syngas** is a mixture consisting primarily of methane (CH<sub>4</sub>), carbon monoxide (CO), hydrogen (H<sub>2</sub>), carbon dioxide (CO<sub>2</sub>) and water vapour (H<sub>2</sub>O).
- Syngas can be used to produce a wide range of **fertilizers, fuels, solvent and synthetic materials**.
- Hydrogen obtained from coal gasification can be used for various purposes such as making ammonia, powering a hydrogen economy.
- In-situ gasification of coal – or Underground Coal Gasification (UCG) – is the technique of converting **coal into gas** while it is still in the seam and then extracting it through wells
- Coal (one of the **Hydrocarbon Fuels**) is one of the important sources of hydrogen making apart from natural gas and renewable energy through **Electrolysis**.
- Almost 100% of hydrogen produced in India is through natural gas (Grey Hydrogen).
- Cost of hydrogen produced from coal can be **cheaper and less sensitive to imports but has high emissions**.

**Hydrogen is used as fuel for vehicles, energy storage and long-distance transport of energy.** The different pathways to use hydrogen economy include hydrogen production, storage, transport and utilization. **Hydrogen produced is used for oil refining (33%), ammonia production (27%), methanol production (11%), steel production (3%) and others.**

### Type of Hydrogen

- a) Grey Hydrogen:
  - Constitutes India's bulk Production.
  - Extracted from hydrocarbons (fossil fuels, natural gas).
  - By product: CO<sub>2</sub>
- b) Blue Hydrogen:
  - Sourced from fossil fuels.
  - By product: CO, CO<sub>2</sub>
  - By products are Captured and Stored, so better than grey hydrogen.
- c) Green Hydrogen:
  - Generated from renewable energy (like Solar, Wind).

- Electricity splits water into hydrogen and oxygen.
- By Products: Water, Water Vapor

### District Level Committees For Power Related Schemes

Ministry of Power has issued an order for setting up of **District Level Committees**.

#### About District Level Committees

- They shall exercise oversight over **all power related schemes** of Government of India and also its **impact** on the provision of services to people.
- This is done in order to ensure the **involvement of people** in the process of power sector **reforms** and their **implementation**.
- The Committee will meet at District Headquarters at least once in 3 months to review and coordinate overall development of power supply infrastructure in the district.
- **Nodal agency:** The Ministry of Power is primarily responsible for the development of electrical energy in the country. It administers the Electricity Act, 2003 and Energy Conservation Act, 2001.
  - ✓ Whereas, Ministry of New and Renewable Energy (MNRE) is the nodal Ministry for all matters relating to new and renewable energy.

#### Composition of the Committee

Chairperson	•Most Senior MP in district
Co-chairpersons	•Other MPs in district
Member Secretary	•District Collector
Members	•Chairperson/President of the District Panchayat/ MLAs of the district

#### Power Sector at A Glance

- **100%** FDI is permitted under automatic route.
- Electricity is a **concurrent** subject.
- This is to ensure universal access by electrifying every village, hamlet and household; setting up more substations, upgrading existing substations, for High Tension/Low Tension Lines, Transformers etc. for strengthening the Distribution systems.

### Amendment To Mineral Rule

The **Minerals (Evidence of Mineral Contents) second Amendment Rules, 2021** and the **Mineral (Auction) Fourth Amendment Rules 2021** have been notified by Ministry of Mines. These rules will amend the Minerals (Evidence of Mineral Contents) Rules, 2015 and Mineral (Auction) Rules 2015 respectively.

Aim of the amendment: To find more mineral blocks for auction and increase the pace of exploration and production. Thus focuses on more participation and competition.

#### Minerals (Evidence of Mineral Contents) Second Amendment Rules, 2021

- It will enable any person who is intending to participate in auction to propose suitable blocks for auction for composite licence where mineral potentiality of the blocks has been identified based on the available geoscience data.

- Committee constituted by state Government shall assess the mineral potentiality of the blocks.

**Minerals (Evidence of Mineral Contents) Rules, 2015**

It have been recently amended in June, 2021, to provide for auction to grant a composite licence in respect of areas where at least Reconnaissance Survey (G4) level has been completed or where mineral potentiality of the block has been identified based on the available geoscience data but resources are yet to be established.

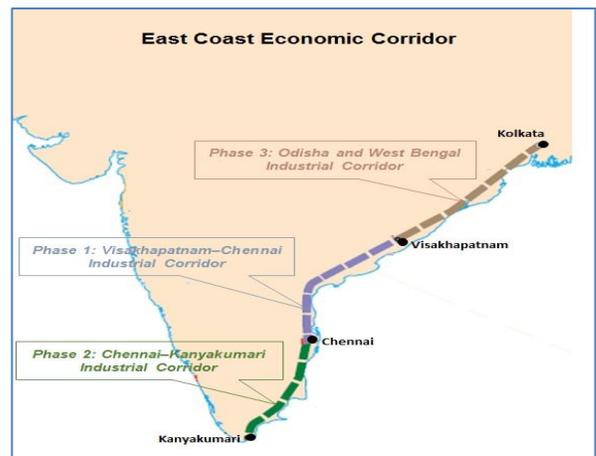
- A Reconnaissance Survey provides a snapshot of potential historic resources in a particular location at a specific point in time.

**Mineral (Auction) Rules 2015 (Auction Rules)**

- It will provide the person (notified for auction), incentive of depositing only half of the bid security amount in auction.
- Part surrender of mining lease area has been allowed in all cases. Till now, part surrender was allowed only in case of non-grant of forest clearance.
- Provisions have also been added to allow disposal of overburden/ waste rock/ mineral below the threshold value, which is generated during the course of mining or beneficiation of the mineral.
- Minimum area for grant of mining lease has been revised from 5 ha (hectares) to 4 ha. For certain specific deposits, minimum 2 ha. is provided

**Chennai–Kanyakumari Industrial Corridor (CKIC)**

- The **Asian Development Bank (ADB) and the Government of India** have signed a \$484 million loan to improve transport connectivity and facilitate industrial development in Chennai–Kanyakumari Industrial Corridor (CKIC) in the state of Tamil Nadu.
- CKIC is part of India’s **East Coast Economic Corridor (ECEC)**, which stretches from West Bengal to Tamil Nadu.
- An industrial corridor is basically a corridor consisting of **multi-modal transport services** that would pass through the states as main arteries. Industrial corridors offer effective integration between industry and infrastructure, leading to overall economic and social development.



**Inland Vessels Bill 2021 To Replace Inland Vessels Act, 1917**

The Bill will regulate safety, security and registration of inland vessels.

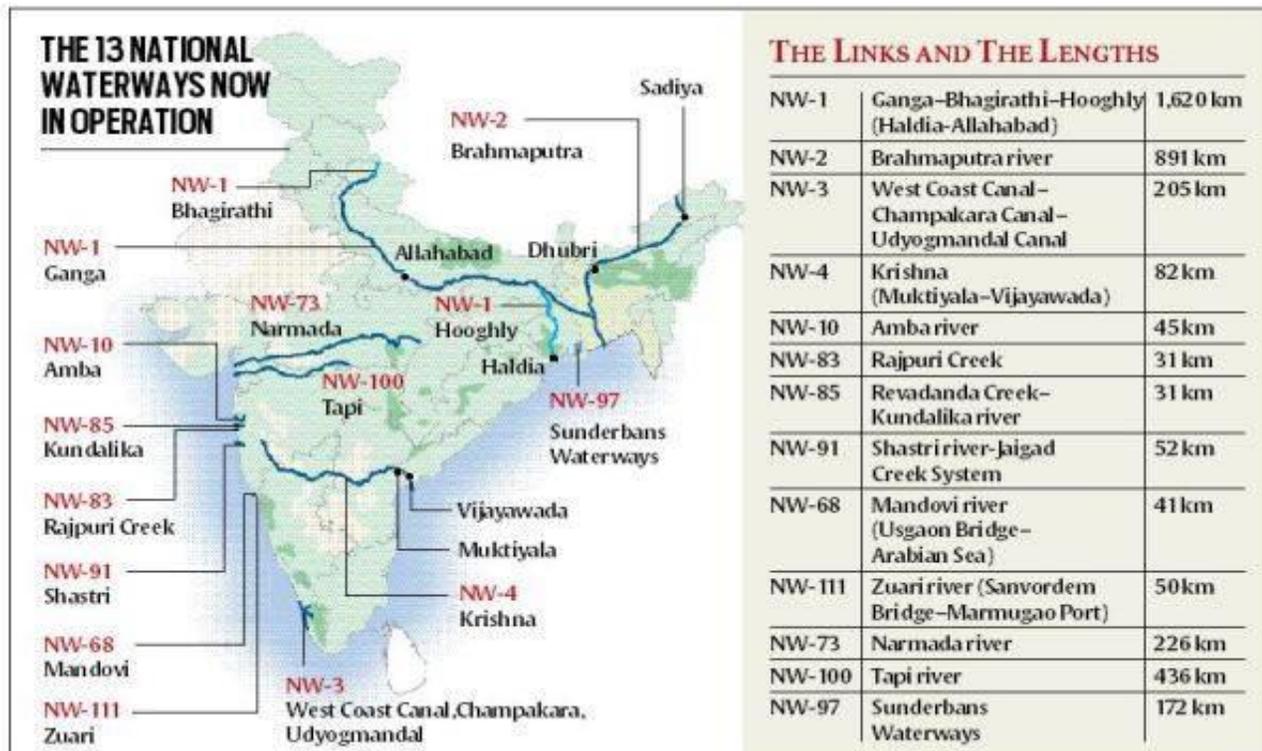
**Features of The Bill**

- It enlarges the **definition of ‘inland waters’**, by including tidal water limit and national waterways declared by the Central Government.
- It provides for a unified law for the entire country, instead of separate rules framed by the States. The certificate of registration granted under the proposed law will be deemed to be **valid in all States and Union Territories**, and there will be no need to seek separate permissions from the States.
- The Bill provides for a **central database** for recording the details of vessel, vessel registration, crew on an electronic portal.

- It requires all **mechanically propelled vessels to be mandatorily registered**. All non-mechanically propelled vessels will also have to be enrolled at district, taluk or panchayat or village level.
- It also deals with pollution control measures of Inland Vessels. This Bill directs the Central Government to designate a list of chemicals, substances, etc. as pollutants.

As per the National Waterways Act 2016, 111 waterways have been declared as National Waterways (NWs). The Inland Waterways Authority of India (IWAI) is implementing the **Jal Marg Vikas Project (JMVP)**.

- JMVP is for capacity augmentation of navigation on National Waterway-1 (NW-1) being implemented by the support of World Bank.



### Rail Kaushal Vikas Yojana

- Ministry of Railways launched Rail Kaushal Vikas Yojana (RKVY) under **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**. This is a skill development programme, where training will be provided to youth with a special focus on jobs that are relevant to the Railways.
- The training will be provided **in four trades viz. Electrician, Welder, Machinist and Fitter** and other trades will be added by zonal railways and Production units based on regional demands and needs assessment.
- **Objective:** To train 50,000 candidates over the next **3 years**.
- Training will be provided to apprentices under the Apprentice Act 1961.
- **Eligibility:** Candidates who are **10th passed and between 18-35 years** shall be eligible to apply. Participants in the scheme shall however have no claim to seek employment in Railways on the basis of this training.

### Pradhan Mantri Kaushal Vikas Yojana

It is a flagship program of the **Ministry of Skill Development and Entrepreneurship (MSDE)**.

- PMKVY 1.0
- **Launch:** India's largest Skill Certification Scheme PMKVY was launched on 15<sup>th</sup> July, 2015 (**World Youth Skills Day**).
  - **Aim:** To encourage and promote skill development in the country by providing **free short**

duration skill training and incentivizing this by providing **monetary rewards to youth for skill certification.**

- **Implementation:** PMKVY is implemented by the **National Skills Development Corporation (NSDC)** under the guidance of the **Ministry of Skill Development and Entrepreneurship.**
  - **Key Components:** Short Term Training, Special Projects, **Recognition of Prior Learning**, Kaushal & Rozgar Mela, etc.
- PMKVY 2.0**
- **Coverage:** **PMKVY 2016-20 (PMKVY 2.0)** was launched by scaling up **both in terms of Sector and Geography** and by **greater alignment with other missions** of the Government of India like **Make in India, Digital India, Swachh Bharat**, etc.
  - **Budget:** Rs. 12,000 Crore.
  - Implementation Through Two Components:
    - ✓ **Centrally Sponsored Centrally Managed (CSCM):** This component was **implemented by National Skill Development Corporation.** 75% of the PMKVY 2016-20 funds and corresponding physical targets have been allocated under CSCM.
    - ✓ **Centrally Sponsored State Managed (CSSM):** This component was **implemented by State Governments** through State Skill Development Missions (SSDMs). 25% of the PMKVY 2016-20 funds and corresponding physical targets have been allocated under CSSM.
  - **Outcome:** More than **1.2 Crore youth** have been trained/oriented through an improved standardized skilling ecosystem in the country under PMKVY 1.0 and PMKVY 2.0.
- PMKVY 3.0**
- **Coverage:** Launched in 717 districts, 28 States/eight UTs, PMKVY 3.0 is a step towards **'Atmanirbhar Bharat'**.
  - **Implementation:** It **will be implemented in a more decentralized structure** with greater responsibilities and support from States/UTs and Districts.
    - District Skill Committees (DSCs), under the guidance of State Skill Development Missions (SSDM), shall play a key role in addressing the skill gap and assessing demand at the district level.

### Ubharte Sitare Fund

- **Ubharte Sitaare fund** has been **set up jointly by Exim Bank and SIDBI** which will invest in the fund by way of equity and equity-like products in *export-oriented units*, in both manufacturing and services sectors.
- Rs 250 crore worth **Alternative Investment Fund** for **export-oriented small and mid-sized companies.**
- Ubharte Sitaare Programme (USP) identifies Indian companies that have the potential to be future champions in the domestic arena while meeting global demands and standards.
- It will also have a Greenshoe Option of Rs 250 crore. **A Greenshoe option** is an over-allotment option, which is a term that is commonly used to describe a special arrangement in a share offering for example an IPO.

### Mahila Kisan Sashaktikaran Pariyojana

- Started in 2011, the **"Mahila Kisan Sashaktikaran Pariyojana" (MKSP)** is a sub component of **Deendayal Antodaya Yojana-NRLM (DAY-NRLM).**
- The government has said that under the schemes implemented by the Department of Agriculture and Farmers Welfare (DA&FW), at least 30 percent of the expenditure allocated for agricultural schemes is being incurred for women to bring them into mainstream agriculture mainly through MKSP.

- MKSP recognizes the identity of “Mahila” as “Kisan” and strives to build the capacity of women in the domain of agro-ecologically sustainable practices.

### Main Bhi Digital 3.0 Campaign

- The Ministry of Housing and Urban Affairs (MoHUA) recently shared details of the **Main Bhi Digital 3.0 campaign** conducted recently.
- Launched jointly by Ministry of Electronics and Information Technology (**Meity**) and **MoHUA**, the campaign is aimed at **digital Onboarding and Training (DOaT) of street vendors** who have been provided loans under PM SVANidhi Scheme.
- Digital onboarding and training of street vendors is an integral part of PM SVANidhi Scheme. Lending Institutions (LIs) have been instructed to issue a durable QR Code & UPI ID at the time of disbursement and to train the beneficiaries in handling digital transactions.
- Thus, the campaign was conducted to complement the efforts of LIs in adoption of digital transactions by the scheme beneficiaries.

### PM Street Vendor’s AtmaNirbhar Nidhi (PM SVANidhi) Scheme

- Launched in June 2020, it is a **micro-credit scheme**, funded by the **Ministry of Housing and Urban Affairs**.
- Aims: To provide loans for working capital to around 50 lakh street vendors who were affected due to the Covid-19 crisis.
- On timely/early repayment of the loan, an **interest subsidy of 7% per annum** will be credited to the bank accounts of beneficiaries through Direct Benefit Transfer on a quarterly basis. It promotes digital transactions through **cash-back incentives** up to an amount of Rs. 1,200 per annum
- Vendors can take working capital loan of up to ₹10,000 that is repayable in **monthly instalments within one year**.
- A timely repayment will also ensure that the vendor gets a credit score and is eligible for a higher loan.
- All street vendors who have been in business on or before March 24, 2020, are eligible under the scheme.

### SAATH Initiative

- A **Rural Enterprises Acceleration Programme** titled *Saath for women* was recently launched for SHGs in Jammu and Kashmir (J&K). It is an initiative of the Jammu & Kashmir Rural Livelihood Mission (**UMEED**).
- The workshops will focus on mentoring, innovation, value creation, market linkages of products and convert these businesses into Higher Order Enterprises.
- Further, it aims to create **11,000 more SHGs in the coming year**.
- Workshops will be conducted under it to train women in 10 different sectors including agriculture, animal husbandry, handicraft, handloom etc. Initially, workshops will be held for 5000 women, out of which 500 will be selected for intensive training and further 100 will be selected for mentoring.

### Jammu & Kashmir Rural Livelihood Mission (JKRLM)

- Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) is implemented as JKRLM (UMEED programme) in J&K.
- DAY-NRLM is a **centrally sponsored scheme** that aims at eliminating rural poverty through promotion of multiple livelihoods for rural poor households across the country.

**SPIN Scheme**

- Khadi and Village Industries Commission (KVIC) has recently launched SPIN (**Strengthening the Potential of India**) scheme and set up **Kashi pottery cluster** under SFURTI Scheme in Varanasi.
- The Kashi pottery cluster will help traditional potters in increasing their skills with the help of **modern equipment** which will eventually help them to occupy a bigger market space.
- SPIN is **not a subsidy-based** programme. It enables registered potters to get a **direct loan from banks** under Pradhan Mantri Shishu Mudra Yojana (loans up to Rs. 50,000), which can be paid back in **easy installments**.

**Scheme of Fund for Regeneration of Traditional Industries (SFURTI)**

- Launched in 2005 by Ministry of Micro, Small and Medium Enterprises (MSME) to promote **cluster development**.
- It aims to organize traditional industries and artisans into clusters to make them competitive and provide support for their long-term sustainability.

**Khadi and Village Industries Commission (KVIC)**

KVIC is a **statutory body** formed under the KVIC Act, 1956. It seeks to promote the development of khadi and village industries in rural areas in coordination with other agencies engaged in rural development.

**Atmanirbhar Hastshilpkar Scheme**

The North Eastern Development Finance Corporation Ltd. (NEDFi) recently launched the Atmanirbhar Hastshilpkar Scheme under the Ministry of Development of North Eastern Region for grass roots artisans of the North Eastern region.

**Objective:** To develop petty artisans of the region by providing financial assistance in the form of term loan for income generating activities for setting up, expansion, modernization, working capital requirement etc.

- Credit assistance of Rs.1 lakh per artisan was given to several artisans at the launch.
- The credit facility is **collateral free** and carries a subsidized interest rate of 6% p.a., which is repayable in 24 months.
- For regular repayment, an incentive of 1% on the interest rate is provided, which will be refunded on successful repayment of loans.

**North Eastern Development Finance Corporation (NEDFi)**

- Established in 1995, NEDFi is a premier financial institution in the North-Eastern Region.
- Over the years, the Corporation has provided loans to over 7500 projects and taken up several development initiatives through its Corporate Social Responsibility (CSR) activities in the 8 states of North-East.

**Eligibility Criteria**



**Seed Capital Module**

- The **Ministry of Food Processing Industries** has launched the **Seed Capital Module** under **Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME)** to help **SHGs**.

- It was launched on **Deendayal Antyodaya Yojana- National Urban Livelihoods Mission (DAY-NULM) MIS** (Management Information System) Portal for seed capital assistance to members of urban SHGs working in the **food processing sector** in India.
- Seed capital is the **money raised to begin developing an idea for a business or a new product.**

**PMFME Scheme**

- It is a Centrally Sponsored Scheme, launched under the Atmanirbhar Bharat Abhiyan.
- **Aim:** To enhance the competitiveness of existing **individual micro-enterprises** in the **unorganized segment of the food processing industry** and promote **formalization** of the sector and provide support to FPOs, SHGs, and Producers Cooperatives along their entire value chain.
- With an outlay of Rs.10,000 crore over a period of 5 years (2020-21 to 2024-25), it envisions to directly assist the 2,00,000 micro food processing units for providing financial, technical and business support for upgradation of existing micro food processing enterprises.

**DAY-NULM**

- Centrally Sponsored Scheme, launched in 2014, it aims to uplift **urban poor, unemployed and differently-abled** by enhancing sustainable livelihood opportunities through skill development.
- It also provides subsidies to urban poor i.e. interest subsidy of 5% – 7% for setting up individual micro-enterprises with the loan of up to 2 lakhs and for group enterprises with a loan limit of up to Rs.10 lakhs.

**Gujarat International Maritime Arbitration Centre (GIMAC)**

The **Gujarat Maritime University** has signed a MoU with the **International Financial Services Centres Authority in GIFT City** to promote the GIMAC.

**About GIMAC**

- The GIMAC will be part of a maritime cluster that is being set up by the **Gujarat Maritime Board (GMB)** in GIFT City at Gandhinagar, Gujarat.
- The idea is to create a world-class **arbitration centre** focused on maritime and shipping disputes that can help resolve commercial and financial conflicts between entities having operations in India. There are over 35 arbitration centres in India but none of them exclusively deals with the maritime sector.
- The arbitration involving Indian players is presently heard at the **Singapore Arbitration Centre.**

The Gujarat International Finance Tec-City (**GIFT City**) is a business district near Ahmedabad in Gujarat, India. It is **India's first operational Greenfield smart city and international financial services centre (IFSC).** The city is located on the banks of the Sabarmati River.

An IFSC caters to **customers outside the jurisdiction of the domestic economy.** Such Centres deal with flows of finance, financial products and services across borders. London, New York and Singapore can be counted as global financial centres.

**Authorised Economic Operators Programme**

- The **Central Board of Indirect Taxes & Customs (CBIC)** has inaugurated the **online filing of Authorised Economic Operators (AEO).**
- The new version (V 2.0) of the web application is designed to ensure continuous **real-time and digital monitoring of physically filed applications** for timely intervention and expedience.

- AEO is a programme (2007) under the aegis of the **World Customs Organization (WCO)** SAFE Framework of Standards to secure and facilitate Global Trade. The programme aims to enhance international supply chain security and facilitate movement of legitimate goods.
- AEO is a voluntary compliance programme.

### Indian AEO Programme

- The AEO Programme was introduced as a pilot project in 2011.
- The security standards detailed in WCO SAFE Framework are the basis of the Indian AEO programme.
- There is a three tier AEO Status for Exporters and Importers. The three tiers are AEO T1, AEO T2, AEO T3, where AEO T3 is the highest level of accreditation.

In June 2005, the **WCO Council adopted the Framework of Standards to Secure and Facilitate Global Trade (SAFE Framework)** that would act as a deterrent to international terrorism, to secure revenue collections and to promote trade facilitation worldwide

### Pashmina Shawls

- Recently, the Centre for Excellence (CFE) has taken a new initiative in J&K to restore the lost glory of Pashmina shawls.
- It is a fine variant of shawls spun from cashmere wools which is obtained from the **Changthangi goat, native to the high plateau of Ladakh**.
- Changthangi goats are generally domesticated and reared by nomadic communities called the Changpa in the Changthang region of Greater Ladakh
- In 2019, the Bureau of India Standards (BIS) published an Indian standard for identification, marking and labeling the Pashmina Shawls for their purity.

### Multidimensional Poverty Index

- The multidimensional poverty index seeks to measure poverty across multiple dimensions in the country. It is to quantify poverty in all of its forms.
- **NITI Aayog** has released its **first national multidimensional poverty index**.
- The MPI released by Niti Ayog used data from 4<sup>th</sup> National Family Health Survey 2015-16.
- The first national multi-dimensional poverty index shows that 25% of India's population is poor.
- The index used *three equally weighted dimensions* of **Health, education, and standard of living**.
- **Bihar has the highest proportion of poor people. It is followed by Jharkhand and then Uttar Pradesh.**
- **Kerala has the lowest number of poor people followed by Goa and Sikkim.**
- Bihar has also the highest number of malnourished people. It is followed by Jharkhand, Madhya Pradesh, Uttar Pradesh, and Chhattisgarh.
- **Pondicherry** has the least poor people among union territories. It is being followed by Lakshadweep.
- The national capital is performing low on the maternal health index. It weighted only 15.9%.
- Uttar Pradesh performed worst on child mortality rate with 4.97%.
- Manipur has the highest number of people deprived of drinking water
- Jammu and Kashmir have the highest number of people with bank account.

## Worldwide Cost of Living 2021

- The survey released by **Economic Intelligence Unit (EIU)** tracks cost of living in US dollars of more than **200 everyday products and services** across 173 global cities.
- The cost of living is compared against prices in New York City, hence cities with currencies that are stronger against the US dollar are likely to appear higher in the rankings.

### Rankings

- As per the report, Israel's Tel Aviv is the world's most expensive city to live in. Paris and Singapore came joint second, followed by Zurich and Hong Kong in the top five. New York was in sixth place.
- Tel Aviv's rise is due to the strength of the Israeli shekel against the dollar, as well as increases in transport and grocery prices.
- Tehran climbed the most in the rankings, jumping from 79th to 29th, as US economic sanctions continued to cause shortages of goods and rising import prices in Iran.
- The Syrian city of Damascus once again ranks as the cheapest city in the world, as its war-torn economy continues to struggle. Tripoli, Tashkent, Tunis and Almaty complete the list of five cheapest cities.
- Ahmedabad is the cheapest city to live in India and is placed at the 7<sup>th</sup> position in the list of cheapest cities.
- Other than Ahmedabad no other city was ranked from India either in the list of costliest or the cheapest cities.
- The report shows that the **upper rankings** continue to be dominated by European and developed Asian cities. The **lowest-ranking** cities are mainly in the Middle East, Africa and less wealthy parts of Asia.
- Supply chain issues, fluctuations in currency exchange rates and changes in consumer demand led to this rise in prices for commodities. Cost increase was the biggest for transport as higher oil prices increased the price of unleaded petrol by 21%.

## World Inequality Report 2022

It was released recently by the **World Inequality Lab** along with some prominent economists.

### Key Findings

- The poorest half of the global population barely owns any wealth at just 2% of the total, whereas the richest 10% owns 76%.
- The Middle East and North Africa (MENA) are the most unequal regions in the world, whereas Europe has the lowest inequality levels.
- Inequalities within countries are now greater than those between countries. In Europe, the top 10%'s income share is around 36%, and in MENA, it is 58%; in East Asia, it is 43%, and in Latin America, 55%.
- Also, even as countries have become richer over the last 40 years, their governments have become significantly poorer, a trend magnified due to the pandemic.

### Other Key Inequalities

- Women's share of total incomes from work was about 30% in 1990, and is less than 35% now.
- Top 10% of emitters are responsible for 50% of all emissions, while the bottom 50% contributes 12%.

### Inequality in India

- India stands out as a poor and very unequal country, where the top 10% holds 57% of the total national income, including 22% held by the top 1%, while the bottom 50% holds just 13% in 2021.
- The average national income of the Indian adult population is ₹2,04,200. While the bottom 50% earns ₹53,610, the top 10% earns more than 20 times (₹1,166,520).

**World Inequality Lab (WIL)**

- It is a research laboratory focusing on the study of inequality worldwide.
- It hosts the World Inequality Database, the most extensive public database on global inequality dynamics.

**SDG India Index**

- First launched in Dec’ 2018, the index has become primary tool for monitoring progress on the SDGs in India.
- It has also fostered competition among the states and UTs by ranking them on the global goals.
- The index is developed by **NITI Aayog** in collaboration with the **United Nations**. It tracks the progress of all states and UTs on **115 indicators** aligned with the **National Indicator Framework (NIF)** of the Ministry of Statistics and Programme Implementation.
  - 115 indicators incorporate 16 out of 17 SDGs, with a qualitative assessment on Goal 17, and cover 70 SDG targets
- States and UTs are classified in four categories based on Index score:
  1. **Aspirant: 0–49.**
  2. **Performer: 50–64.**
  3. **Front-runner: 65–99.**
  4. **Achiever: 100.**
- Currently, there are no states in the aspirant and achiever category.
- Country’s overall SDG score improved by 6 points — from 60 in 2019 to 66 in 2020-21.
- **Kerala** retained its rank as the **top**, followed by Himachal Pradesh and Tamil Nadu.
- **Bihar, Jharkhand and Assam** were the **worst performing** states in this year’s India index.
- **Chandigarh** maintained its top spot among the UTs.

**AQEES: Job Losses In Lockdown**

**Ministry of Labour and Employment** recently released the data on job losses during the lockdown in 2020 due to Covid 19. The findings are part of the **All India Quarterly Establishment based Employment Survey (AQEES)**.

**AQEES**

- It was launched with the objective of collecting employment data on **quarterly basis** from all the establishments.
- It has two parts: **Quarterly Employment Survey (QES)** and **Area Frame Establishment Survey (AFES)**.

**QES**

- It provides the employment estimates for establishments employing 10 or more workers

**AFES**

- It provides the employment estimates for establishments recruiting 9 or less workers

**Annual State of Working India 2021: One Year of Covid-19 Report**

Released by Azim Premji University’s Centre for Sustainable Employment. The findings are:

- The COVID-19 pandemic has substantially increased informality in employment. Around **100 million jobs** were lost nationwide during the April-May 2020 lockdown.
- The labour share of GDP fell down by over 5% points. Post

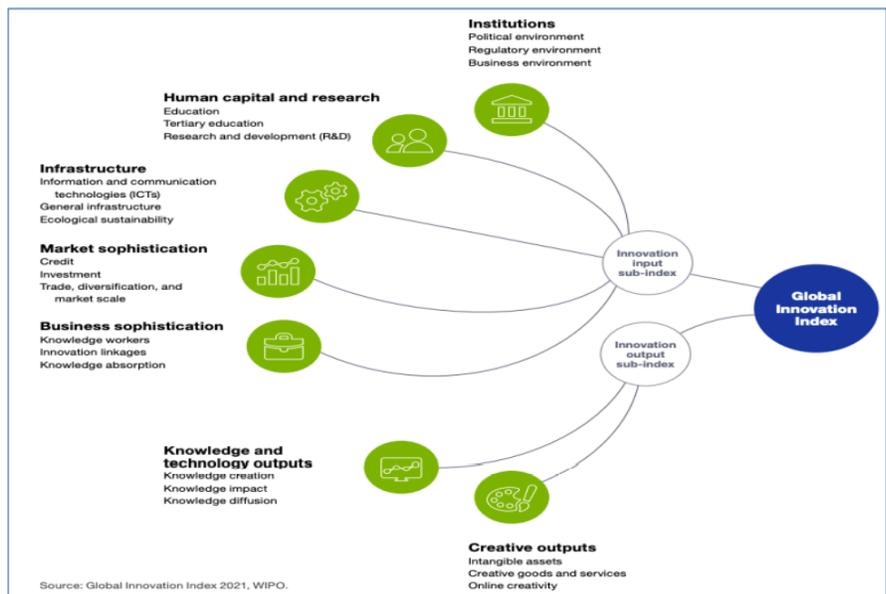
- The Labour Force Participation Rate was 40 % in April which is about **2% points** below what it was before April 2020.
- About 75 % of men are already part of the labour force but for women, it is only 10- 12 %.

Lockdown, nearly **half of salaried workers moved into informal work**. The size of the salaried class shrank for the third consecutive month in April, with 3.4 million jobs lost.

- Job losses were higher for states with a higher Covid-19 caseload. Hence, **Maharashtra, Kerala, Tamil Nadu, Uttar Pradesh and Delhi**, contributed to a large extent to job losses.
- 230 million people fell below the **national minimum wage threshold of ₹375** per day during the pandemic.
- The report is based on data sourced from: Consumer Pyramids Household Survey of the Centre for Monitoring the Indian Economy (CMIE), Azim Premji University Covid-19 Livelihoods Phone Survey (CLIPS), The India Working Survey (IWS) and Other surveys by various civil society organisations.

**Global Innovation Index 2021**

- It was recently released by **World Intellectual Property Organization (WIPO)**.
- GII was launched in 2007 to find and determine metrics and methods that could capture a picture of innovation in society. WIPO started its association with the GII in 2011. Later, Cornell University and INSEAD joined as co-publishers, which continued until 2020. As of 2021, GII is published by WIPO in partnership with the **Portulans Institute**, various corporate and academic network partners and the GII Advisory Board.
- GII has two sub-indices, the **Innovation Input Sub-Index** and the **Innovation Output Sub-Index**, and 7 pillars, each consisting of three sub-pillars.
- Despite the COVID-19 pandemic, governments and enterprises in many parts of the world have **increased their investments in innovation**. Scientific output, expenditures in R&D, intellectual property filings and **venture capital** deals continued to grow in 2021, building on strong pre-crisis peak performance.



**India's Performance**

- India has climbed 2 spots and is **ranked 46th** in 2021, up from a rank of 81 in 2015.
- India ranks 2nd among the 34 lower middle-income group economies and ranks 1st among the 10 economies in Central and Southern Asia.
- India performs better in innovation outputs than innovation inputs in 2021. It ranks 57th in innovation inputs and 45th in innovation outputs.
- It continues to lead the world in **information and communication technology** services exports indicator (1) and holds top ranks in other indicators, such as domestic industry diversification (12) and graduates in science and engineering (12).
- The consistent improvement in India's ranking is due to the immense **knowledge capital, vibrant startup ecosystem** and the work done by the public and the

TOP THREE INNOVATION ECONOMIES BY INCOME GROUP	
Incomes	Countries (top three)
High income	Switzerland, Sweden, USA
Upper middle income	China, Bulgaria, Malaysia
Lower middle income	Vietnam, India, Ukraine
Low income	Rwanda, Tajikistan, Malawi

Source: Global Innovation Index 2021 by World Intellectual Property Organization

### Sveriges Riksbank Prize In Economic Sciences

Royal Swedish Academy of Sciences recently awarded the **Sveriges Riksbank Prize in Economic Sciences 2021**, to three US based economists for their work based on “**natural experiments**”.

#### David Card's Contributions

- One half of the prize was given to David Card, for his “**contributions to labour economics**”.
- Using natural experiments, Card analyzed how minimum wage, immigration and education affect the labour market.

#### Angrist and Imbens' Contribution

The other half of the prize was shared by **Joshua Angrist and Guido Imbens** for their contributions to the **analysis of causal relationships** (relationship between cause and effect). They helped to make sense of the data from natural experiments. This is crucial because unlike a clinical trial or randomised control trial, in a natural experiment a researcher is not in control of the experiment, which makes it difficult to draw precise conclusions and develop causal links.

### Sveriges Riksbank Prize in Economic Sciences

- Often incorrectly referred to as the Nobel Prize in Economics, the award is officially called **the Sveriges Riksbank Prize in Economic Sciences**.
- Unlike the other Nobel prizes, the economics award wasn't established in the will of Alfred Nobel but by the Sveriges Riksbank (Sweden's central bank) in his memory in 1968, with the first winner selected a year later

### IMF SDR ALLOCATION

IMF has recently made an allocation of Special Drawing Rights (SDR) 12.57 billion (latest exchange rate equivalent to around \$17.86 billion) to India. After this, India's total SDR holding is SDR 13.66 billion.

#### Special Drawing Rights (SDR)

- SDR is an international reserve asset, created by the IMF in 1969.
- It was created as a **supplementary international reserve asset** in the context of the Bretton Woods **fixed exchange rate system**.
- The collapse of Bretton Woods system in 1973 and the shift of major currencies to **floating exchange rate** regimes lessened the reliance on the SDR.
- Nonetheless, SDR allocations plays a role in providing liquidity and supplementing member countries' official reserves, as was the case amid the global financial crisis
- IMF makes SDR allocation to its members **in proportion to their existing quotas** in IMF. A member country's quota determines its maximum financial commitment to IMF and its **voting power**.
- The **value of SDR** is based on a weighted basket of **five currencies**— *U.S. dollar, Euro, Chinese Renminbi, Japanese Yen, and the British Pound Sterling*. SDR basket is reviewed every **5 years**
- SDR is neither a currency nor a claim on the IMF. It serves as the unit of account of the IMF and other international organizations.
- SDR holding is one of the components of the **foreign exchange reserves** (FER) of a country. Thus, SDR allocations help to provide liquidity and reduce reliance of countries on more expensive domestic or external debt for building reserves.

- IMF member states can exchange SDRs for freely usable currencies like US dollars.

### Criteria For A Currency To Be Included In SDR Basket

Currencies included in the SDR basket have to meet **two criteria**:

- **Export Criterion:** A currency meets the export criterion if its issuer is an IMF member or a monetary union that includes IMF members, and is also one of the top five world exporters.
- **Freely usable criterion:** It has to be widely used to make payments for international transactions and widely traded in the principal exchange markets. Freely usable currencies can be used to Fund financial transactions

### International Monetary Fund (IMF)

- IMF is an international financial institution, headquartered in Washington, D.C., consisting of 190 countries. It was formed in 1944 at the Bretton Woods Conference.
- Its primary purpose is to ensure the stability of the international monetary system.
- It aims to encourage global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and **reduce poverty** around the world

### World Economic Outlook

IMF recently released the latest World Economic Outlook (WEO). The WEO is released **twice every year** — April and October.

#### Key Findings

- India's economy, which contracted by 7.3% due to Covid-19, is expected to grow by: 9.5% in 2021 and 8.5% in 2022
- World is expected to grow at 5.9% (2021) & 4.9% (2022). Aggregate output for advanced economy group is expected to regain its pre-pandemic trend in 2022 & exceed it by 0.9% (2024).
- By contrast, **aggregate** output for the **emerging market and developing economy** group (excluding China) is expected to remain 5.5% below the pre-pandemic forecast in 2024.
- Bulk of India's employment is in the **informal or unorganised sectors**. At the same time, India is witnessing a **k-shaped recovery**, which means different sectors are recovering at significantly different rates.

### Digital Tax In India

- India was the one of the first countries to introduce a **6 % equalisation levy** in 2016, but the levy was restricted to **online advertisement** services.
- The United States recently announced 25% tariffs on over \$2 billion worth of imports from six nations over their digital services taxes, but immediately suspended the duties to allow time for international tax negotiations to continue.
- The U.S. Trade Representative's office had approved the threatened tariffs on goods from Britain, Italy, Spain, Turkey, India and Austria after a "Section 301" investigation concluded that their digital taxes discriminated against U.S. companies.
- **India introduced the digital tax in April 2020** for foreign companies selling goods and services online to customers in India and showing annual revenues more than INR 20 million.
- While the levy applied only to digital advertising services till 2019-20 at the rate of 6%, the government in April last year widened the scope to impose a **2 % tax on non-resident ecommerce players with a turnover of Rs 2 crore**. The scope was further widened in the Finance Act 2021-22 to cover e-commerce supply or service when any activity takes place online. Since May 2021, this also includes any entity that systematically and continuously does business with **more than 3 lakh users in India**.

- Offshore e-commerce firms that sell through an Indian arm will not have to pay.

### G7 Corporate Tax Deal

- Finance Ministers from wealthy G7 nations have endorsed a new global corporate tax deal. The aim is to counter tax avoidance to make companies pay in the countries where they do business. The agreement commits states to a **global minimum corporate tax rate of 15% to avoid countries undercutting each other.**
- **The rationale behind this move is to discourage the shifting of multinational operations and profits overseas.**
- The minimum rate is tailored **to address the low effective rates of tax** shelled out by some of the world's biggest corporations, including digital giants such as Apple, Alphabet and Facebook. These companies typically rely on complex webs of subsidiaries to Hoover profits out of major markets into low-tax countries such as Ireland or Caribbean nations.
- Since **India's effective tax rate is above the global minimum tax rate**, it would not impact companies doing business in India.

### India Tops Remittance Inflows

The World Bank recently released its Migration and Development Brief.

#### Key Findings

- **India** is projected to receive USD 87 billion in 2021 in remittances, making it the **largest recipient of remittances.** India had received over USD 83 billion in remittances in 2020.
- **United States** was the biggest source for India, accounting for over 20% of funds in 2021. India is followed by China, Mexico, Philippines and Egypt.
- Remittances to **low- and middle-income countries** are projected to have grown a strong 7.3% to reach USD 589 billion in 2021.
- For a second consecutive year, remittance flows to low- and middle-income countries (excluding China) are expected to be more than the sum of FDI and overseas development assistance (ODA).
- This highlights the importance of remittances in supporting household spending on essentials such as food, health, and education during periods of economic hardship in migrants' countries of origin.

#### Factors for Remittance Growth

- **Migrants'** determination to support their families in times of need, aided by economic recovery in Europe and the United States which in turn was supported by the **Fiscal Stimulus** and employment support programs.
- In the **Gulf Cooperation Council (GCC)** countries and Russia, the recovery of outward remittances was also facilitated by stronger oil prices and the resulting pickup in economic activity.
- The severity of **Covid-19** caseloads and deaths during the second quarter (well above the global average) played a prominent role in **drawing substantial flows** (including for the purchase of oxygen tanks) to the country.
- Flows from migrants **have greatly complemented government cash transfer programs** to support families suffering economic hardships during the Covid-19 crisis.

#### Projection for 2022

- Remittances are projected **to grow 3% in 2022 to USD 89.6 billion**, because of a **drop in overall migrant stock**, as a large proportion of returnees from the Arab countries await return.

**World Bank's Migration and Development Brief**

- This is prepared by the Migration and Remittances Unit, Development Economics (DEC)- the premier research and data arm of the World Bank.
- The brief aims to provide an update on key developments in the area of **migration** and remittance flows and related policies over the past six months.
- It also provides medium-term projections of remittance flows to developing countries.
- The brief is produced **twice a year**.

**LEADS 2021 Report**

- The Ministry of Commerce and Industry recently released the 3rd edition of **Logistics Ease Across Different States** (LEADS) Report 2021.
- Launched in 2018, with the objective of ranking States and UTs on the efficiency of their logistics ecosystem.
- LEADS 2021 examines the **three dimensions** which collectively influence logistics ease i.e., Infrastructure, Services, Operating, and Regulatory Environment

**Rankings**

- **Gujarat, Haryana and Punjab** have emerged as the **top performers** in the index.
- Within the North Eastern States and Himalayan Region, **Jammu and Kashmir** is at the top followed by Sikkim, Meghalaya. **Delhi** stands at the top rank among Other UTs.
- Uttar Pradesh, Uttarakhand and Jharkhand have emerged as the **top improvers**.

**Bhumi Samvaad**

Union Minister for Rural Development and Panchayati Raj inaugurated '**Bhumi Samvaad**' - National Workshop on Digital India Land Record Modernisation Programme (DILRMP).

**About DILRMP**

- DILRMP, previously known as the National Land Record Modernization Programme (NLRMP), was launched in 2008 with the purpose to digitize and modernize land records and develop a centralised land record management system.
- **Components:** The DILRMP has 3 major components.
  - Computerization of land record
  - Survey/re-survey
  - Computerization of Registration

**Palk Bay Scheme**

The Union Government is considering increasing the unit cost of deep-sea fishing vessels from Rs 80 L to Rs 1.3 Cr under the Palk Bay scheme to make it more attractive to fisherfolk

- The Scheme, "**Diversification of Trawl Fishing Boats From Palk Straits Into Deep Sea Fishing Boats**", was **launched in 2017** as a **Centrally Sponsored Scheme**.
- It was launched as part of the umbrella **Blue Revolution Scheme**. The Blue Revolution is part of the Government's efforts to promote fishing as an allied activity for farmers in order to double their incomes.
- The scheme is **not part of Pradhan Mantri Matsya Sampada Yojana (PMMSY)**.

- It is a Tamil Nadu-specific scheme aimed at providing 2,000 vessels in 3 years to fishermen and motivating them to abandon bottom trawling.
- **Funding pattern:** Centre 50%, State 20%, Institutional funding 10% and Beneficiary 20%.

### PMMSY

- PMMSY is a scheme to bring about Blue Revolution through sustainable and responsible development of fisheries sector in India under two components namely, Central Sector Scheme (CS) and Centrally Sponsored Scheme (CSS).
- The Scheme will be implemented during a period of 5 years from FY 2020-21 to FY 2024-25.
- Nodal Ministry: **Ministry of Fisheries, Animal Husbandry and Dairying.**

### Implementation

- Central Sector Scheme (CS) – The entire project/unit cost will be borne by the Central government (i.e., 100% central funding).
- The Centrally Sponsored Scheme (CSS) Component is further segregated into non-beneficiary oriented and Beneficiary orientated subcomponents/activities under the following three broad heads:
  - Enhancement of Production and Productivity.
  - Infrastructure and Post-Harvest Management.
  - Fisheries Management and Regulatory Framework.

### Global Arms Trade Report

Stockholm International Peace Research Institute (SIPRI) recently released a report titled 'Top 100 arms-producing and military services companies, 2020'.

### Highlights Of The Report

- Overall, the arms sales of the top 100 arms-producing and military services companies totalled **\$531 billion** in 2020, an increase of 1.3% compared to 2019.
- US once again hosted the highest number of companies ranked in the top 100 and arms sales of these 41 US companies amounted to \$285 billion.
- US companies accounted for 54% of the combined arms sales of the top 100. China was second at 13%, followed by the UK at 7.1%. Russia and France were fourth and fifth with 5% and 4.7% respectively.
- Russia has been slipping down in the rankings since 2017. In 2020, Russian companies' arms sales reached USD 26.4 billion, a decrease of 6.5% on an annual basis.

### India's position

- Three Indian companies are among the world's top 100 for combined arms sales in 2020.
- The three companies are: Hindustan Aeronautics Limited (HAL)-ranked 42, Indian Ordnance Factories-rankd 60, and Bharat Electronics Limited (BEL)- ranked 66. Their aggregate arms sales of \$6.5 billion was 1.7 % higher in 2020 than in 2019, and accounted for 1.2% of the top 100 total.
- In 2020 the Indian government announced a phased ban on imports of more than a hundred different types of military equipment to support domestic companies and enhance self-reliance in arms production.
- However, India has the smallest share among the top 11 defence manufacturing nations.
- India's share of arms sales globally in 2020 was **1.2%**.

## SCIENCE AND TECHNOLOGY

### IspA

- The Prime Minister has launched the **Indian Space Association (ISpA)** via video conferencing. ISpA will act as a **single-window and independent agency** on matters related to space technology.
- The PM also remarked that the Government's approach to **space reforms is based on 4 pillars**.
- ISpA aspires to be the **collective voice of the Indian Space industry**. ISpA will be **represented by leading domestic and global corporations** that have advanced capabilities in space and satellite technologies.
- ISpA will undertake **Policy Advocacy** and engage with all stakeholders in the Indian Space domain, including the Government and its Agencies, to make India self-reliant, technologically advanced, and a leading player in the space arena.
- ISpA will also **work towards building global linkages** for the Indian space industry to **bring in critical technology and investments** into the country to create more high-skill jobs.

### Significance of ISpA

- One of the main goals of the organisation is to **supplement the government's efforts towards making India a global leader** in commercial space-based excursions.
- Of late, ISRO's rockets have been carrying the payload and communication satellites of various countries. Now, **private players will also look to touch on this space with the new organisation**.
- Several private sector companies have shown an interest in India's space domain, with **space-based communication networks** coming to the fore.

### Other Related Organisations

- **IN-SPACE: Indian National Space Promotion and Authorization Centre (IN-SPACe)** was approved in 2020 to provide a level playing field for private companies to use Indian space infrastructure.
- **NSIL: In the 2019 Budget**, the government had announced the setting up of a **New Space India Limited (NSIL)**, a public sector company that would serve as a marketing arm of **ISRO (Indian Space Research Organisation)**.
  - Its main purpose is to market the technologies developed by ISRO and bring it more clients that need space-based services.
  - That role, incidentally, was **already being performed by Antrix Corporation**, another public sector undertaking working under the Department of Space, and which still exists.

### Four Pillars of Space Reforms

- **Allowing the private sector** freedom of innovation.
- **Government playing the enabler's role**.
- **Preparing youngsters** for the future.
  - Recently, **ATL Space Challenge 2021** has been launched. This is to ensure that students of classes 6 to 12 are given an open platform where they can innovate and enable themselves to solve digital age space technology problems.
- **Treating the space sector as a resource** for the progress of the common man.

- Development projects are being monitored by satellite imaging, space technology is being used in settlement of **Fasal Bima Yojna claims** and disaster management planning and the **NAVIC system** is helping fishermen.

### Indian Astronomical Observatory (IAO), Hanle

- Researchers from India and their collaborators carried out a detailed study of the **night time cloud cover** fraction over **8 high altitude observatories**, including three in India.
- The study classified the quality of observable nights for different astronomical usages like photometry and spectroscopy on a daily basis.
- They analysed datasets for **the Indian Astronomical Observatory (IAO) in Hanle, Merak Observatory (Ladakh), and Devasthal (Nainital) in India, Ali Observatory in the Tibet Autonomous Region in China, South African Large Telescope in South Africa, University of Tokyo Atacama Observatory and Paranal in Chile, and the National Astronomical Observatory in Mexico.**
- Paranal, located in a high-altitude desert in Chile, to be the best site in terms of clear skies.

### About IAO

- IAO has one of the world's highest sites for optical, infrared, and gamma-ray telescopes
- The team found that the Hanle site which is as **dry as Atacama Desert** in Chile and much drier than Devasthal has around **270 clear nights** in a year and is also one of the emerging sites for infrared and sub-mm optical astronomy. This is because
- **Water vapor absorbs electromagnetic signals and reduces their strength.**
- It has advantages of more clear nights, minimal light pollution, background aerosol concentration, extremely dry atmospheric conditions and uninterrupted monsoon

### Merger Of Three Jumbo Black Holes Spotted

- A rare merging of three super massive black holes has been spotted by a team of astrophysicists in India.
- Researchers were studying a pair of known galaxies — **NGC7733** and **NGC7734** — when they detected an unusual bright clump at the centre of one of them. However, the clump was moving at a different velocity compared to the one in which it was observed. This meant that the clump was not part of the same galaxy, but rather a small, separate galaxy that they named **NGC7733N**.
- Based on this, the scientists observed that there are three super massive black holes from three galaxies merging to form **triple active galactic nuclei (AGN)**.
- This is only the third time such an event has been observed
- All three merging black holes were part of galaxies in the **Toucan constellation**.

### What is Final Parsec?

If two galaxies collide, their black holes will also come closer by transferring the kinetic energy to the surrounding gas. The distance between the black holes decreases with time until the separation is around one parsec (3.26 light-years). The two black holes, however, are then unable to lose any further kinetic energy to get even closer and merge. This is known as the final Parsec problem.

### Super massive Black Holes

- A black hole is a place in space where gravity pulls so much that even light cannot get out. The gravity is so strong because matter has been squeezed into a tiny space. This can happen when a star is dying. Moreover, because no light can get out, people can't see black holes. They are invisible.

- The largest black holes are called “**super massive.**” These black holes have masses that are more than 1 million suns together

### Significance Of Finding

- **The presence of a 3rd black hole can solve final parsec problem**
- Many **AGN pairs** have been detected in the past, but **triple AGN** are extremely rare
- **The two galaxies can come closer when another black hole or a star passes by and takes away some of their combined angular momentum**

### Active Galactic Nuclei (AGN)

- When the dust and gas from the surroundings fall onto a super massive black hole, some of the mass is swallowed by the black hole. But some of it is converted into energy and emitted as electromagnetic radiation that makes the black hole appear very luminous.
- **AGN is formed when the gravitational energy of these materials, being pulled towards the black hole, is converted into light.**
- Around 15% AGN emits **charged particles** called **jets** travelling at speeds close to the speed of light which can be observed using light spectroscopy.

### Solar Flare

- Recently a solar flare that occurred on the Sun triggered a magnetic storm that scientists had perfectly predicted.
- **About Solar Flare:** Solar flares are giant explosions on the sun that send energy, light and high-speed particles into space.
- These flares are often associated with solar magnetic storms known as **coronal mass ejections** (CMEs).
- Radiation is emitted across virtually the entire electromagnetic spectrum, from radio waves at the long wavelength end, through optical emission to x-ray and gamma rays at the short-wavelength end.
- The amount of energy released is the equivalent of millions of 100-megaton hydrogen bombs exploding at the same time.

### Effects of Solar Flare

- Solar flares strongly influence the local space weather in the vicinity of the Earth.
- They can produce streams of highly energetic particles in the solar wind known as solar particle events. These particles can impact the Earth's magnetosphere.
- Coronal Mass Ejections (CMEs) can trigger geomagnetic storms that have been known to disable satellites and knock out terrestrial electric power grids for extended periods of time.
- The radiation risks posed by solar flares are a major concern in discussions of a human mission to Mars, the Moon, or other planets.

### Mission LUCY

- Recently NASA has launched the Lucy Mission.
- **About Mission LUCY:** Lucy space probe will explore the **asteroids (known as Jupiter Trojans or Trojan Asteroids)** that share Jupiter's orbit along with the Sun.
- The **solar-powered mission** is estimated to be over **12 years long**, during the course of which the spacecraft will visit 8 asteroids covering a distance of about 6.3 billion km.

- The mission is named after 'Lucy', a 3.2-million-year-old ancestor who belonged to a species of hominins (which include humans and their ancestors).

#### **Aim Of This Mission**

- It is designed to understand the composition of the **diverse asteroids** that are a part of the Trojan asteroid swarms, to determine the mass and densities of the materials and to look for and study the satellites and rings that may orbit the Trojan asteroids.

#### **Where And What Are The Trojan Asteroids**

- Asteroids are divided into **3 categories**
- First, found in the main asteroid belt, **between Mars and Jupiter**. It is estimated that this region contains somewhere between 1.1-1.9 million asteroids.
- The second group is that of trojans (the name comes from Greek mythology), which are asteroids that **share an orbit with a larger planet**. NASA reports the presence of Jupiter, Neptune and Mars trojans. In 2011, they reported an Earth trojan as well.
- The Jupiter asteroids can be found in what are referred to as "swarms" that **lead and follow** the planet Jupiter along its orbit around the Sun. 'Lucy' will reach the first swarm of these asteroids.
- The third is under **Near-Earth Asteroids (NEA)**, which has orbits that pass close to the Earth. Those that cross the Earth's orbit are called Earth-crossers. More than 10,000 such asteroids are known, of which over 1,400 are classified as potentially hazardous asteroids.

#### **Other Missions To Jupiter**

- **Pioneer 10** - First spacecraft to explore Jupiter was Pioneer 10, which is launched by the NASA.
- **Voyager 1** - Launched by NASA to study the outer Solar System and interstellar space beyond the Sun's heliosphere.
- **Juno** - It is a space probe by NASA that is currently orbiting the planet Jupiter.
- **Galileo** - The first spacecraft to orbit Jupiter was the Galileo orbiter, sent by the NASA.
- **Jupiter Icy Moon Explorer (JUICE)** – It will be launched by the European Space Agency's in 2022.

#### **Psyche Mission**

NASA has announced that the Psyche mission is going to be launched in August 2022.

- The Psyche mission will explore, for the first time ever, a giant metal asteroid called Psyche.
- Psyche asteroid orbits the sun in the main asteroid belt, between Mars and Jupiter.
- Mission management, navigation and its operations will be looked upon by NASA's Jet Propulsion Laboratory (JPL). Psyche is the 14th mission selected as part of NASA's Discovery Program.

#### **Significance of the mission**

- Scientists speculate that the asteroid could be the leftover piece of a completely different kind of iron-rich body that formed from metal-rich material somewhere in the solar system.
- If it turns out to be part of a metal core, it would be part of the very first generation of early cores in our solar system.

#### **NASA Scientists Solve 40-Year Mystery Over Jupiter's X-Ray Aurora**

- The vital clues came from a new analysis of data from ESA's XMM-Newton telescope and NASA's Juno spacecraft.

- They found that the pulsating X-ray auroras are caused by **fluctuations of Jupiter's magnetic field**. As the planet rotates, it drags around its magnetic field. The magnetic field is struck directly by the particles of the solar wind and compressed. These compressions heat particles that are trapped in Jupiter's magnetic field. This triggers a phenomenon called **electromagnetic ion cyclotron (EMIC) waves**, in which the particles are directed along the field lines.
- The particles themselves are electrically charged atoms called ions. Guided by the field, the ions 'surf' the EMIC wave across millions of kilometres of space, eventually slamming into the planet's atmosphere and triggering the X-ray aurora.

**At Earth, auroras are usually visible only in a belt surrounding the magnetic poles, between 65 and 80 degrees latitude.** Beyond 80 degrees, auroral emission disappears because the magnetic field lines leave Earth and connect to the magnetic field in the solar wind. **Jupiter's X-ray auroras are different. They exist poleward of the main auroral belt and pulsate**

### Scientists At John Hopkins University Have Simulated The Interior Of Saturn

- The simulations say that a **thick layer of Helium rain** influence the magnetic field of the planet.
- Saturn stands out in the Solar system as its magnetic field is almost perfectly symmetrical around its rotational axis. The **Cassini Mission of NASA** helped scientists to understand the deep interior of the planet where the magnetic field is generated.
- The simulations will help the scientists measure the rate at which Saturn rotates.

### Cassini

- Cassini is a joint space mission of European Space Agency, NASA and Italian Space Agency. It was called Cassini-Huygens mission (Launched in 1997).
- This was the **first landing ever** accomplished in the outer Solar System. Its design includes a **Saturn orbiter** and a lander for the moon **Titan**.
- The Cassini space probe entered the orbit of Saturn and the Huygens (**lander**) of the European Space Agency **landed on the Titan** in 2005 (the largest moon of Saturn).
- It was the first space probe to **enter the orbit** of Saturn and the fourth space probe to visit Saturn

### NASA's Cassini and Saturn's Moon

- The spacecraft has found that **Titan has methane** in its atmosphere and **Enceladus has a liquid ocean** with erupting plumes of gas and water.
- Most of the methane on Earth has a biological origin. Microorganisms called methanogens are capable of generating methane as a metabolic by-product. They do not require oxygen to live and are widely distributed in nature. They are found in swamps, dead organic matter, and even in the human gut.
- Methane could be formed by the chemical breakdown of organic matter present in Enceladus' core. Hydrothermal processes could help the formation of carbon dioxide and methane.

### Enceladus

- Enceladus is a small, icy **moon of Saturn** which has an abundance of hydrogen molecules in water plumes. 98% of the gas in the plumes was found to be water and 1% is hydrogen and the remaining is a mixture of molecules of carbon dioxide, methane, and ammonia.
- Underwater vents present on Enceladus resemble the vents present on Earth's ocean floors, where microbes and other sea life congregate

### Titan

- It is the largest moon of Saturn and the second largest moon in our solar system.
  - Jupiter's moon **Ganymede** is little bit larger.
- It has liquid rivers, lakes, and seas on its surface (though these contain hydrocarbons like methane and ethane, not water).
- Titan's atmosphere is made mostly of nitrogen, like Earth's, but is four times denser.
- Unlike Earth, it has clouds and methane rain.

### INSPIRATION 4 MISSION

- Launched by **Falcon 9 rocket** for an **Earth-orbiting mission** placing the Dragon capsule into low Earth orbit
- It is the world's first **all-civilian mission** to orbit the earth.
- It will orbit the Earth at 575km, higher than the International Space Station and the Hubble space telescope, and hence will be the farthest distance travelled by a crewed mission since 2009.
- **Inspiration4 is the third space flight by a billionaire in 2021.** The other two both suborbital missions –were the flight of Virgin Galactic founder Richard Branson and the flight of Blue Origin founder Jeff Bezos.

### Dragon Spacecraft

- It is capable of carrying up to 7 passengers to and from Earth orbit, and beyond.
- It is the only spacecraft currently flying that is capable of returning significant amounts of cargo to Earth and is the first private spacecraft to take humans to the space station.

### Falcon 9

- **It is a reusable, two-stage rocket designed and manufactured by SpaceX for the reliable and safe transport of people and payloads into Earth orbit and beyond.**
- It is the world's first orbital-class reusable rocket. Reusability allows SpaceX to re-fly the most expensive parts of the rocket, which in turn drives down the cost of space access.

### New Shepard Rocket System

- Amazon founder **Jeff Bezos's space company called Blue Origin** recently concluded the online auction for the first seat on New Shepard, a rocket system meant to take tourists to space.
- The winning bidder will get to fly aboard New Shepard along with Bezos and his brother, when it takes its first human flight on July 20, which marks the 52nd anniversary of Neil Armstrong and Buzz Aldrin's moon landing.
- **New Shepherd Rocket system** is a rocket system meant to take tourists to space successfully. The system is built by Blue Origin. New Shepard has been named after astronaut Alan Shepard, the first American to go to space.
- Designed to take astronauts and research payloads past the **Karman line – the internationally recognised boundary of space at an altitude of 100 kilometres (62 mi) above the earth's sea level.** The system is a fully reusable, vertical takeoff and vertical landing space vehicle.

### "Unity 22" Mission

- The Unity 22 mission consists of **two pilots and four mission specialists**, one of whom is Virgin Galactic founder **Sir Richard Branson** and Indian-origin **Sirisha Bandla**.

- As the name suggests, Unity 22 will be the 22nd test flight of **VSS Unity**, and Virgin Galactic's fourth flight into space.
- The **purpose of the test flight** is to gather data about the spacecraft, including the cabin environment, seat comfort, passenger weightlessness, and the view of the Earth from the passenger area, as well as the efficacy of the Spaceport America training program for its customers.
- **Sirisha Bandla** is the **fourth Indian to fly into space** and the **second Indian-born woman to fly into space after Kalpana Chawla**. The other Indians who went to space include *Rakesh Sharma, Kalpana Chawla and Sunita Williams*.

Satellites **need to reach a threshold speed in order to orbit Earth**. If an object travels at a horizontal speed of about 28,000 km/hr or more, it goes into orbit once it is above the atmosphere. At such speed, a satellite prevents itself from accelerating toward the Earth due to gravity. Such a trip allows space travellers to experience a few minutes of **"weightlessness"**.

### Blue Straggler

- **First-ever comprehensive analysis of blue stragglers**, Indian researchers have proposed a **hypothesis for evolution of blue straggler stars**.
- Blue stragglers is a class of stars on open or globular clusters that **stand out as they are bigger and bluer than the rest of the stars**.
- These are **unusually hot and bright stars found** in the cores of ancient star clusters known as **globulars**.
- A clue to their origin is that they are only found in dense stellar systems, where distances between stars are extremely small (a fraction of a light year).
- **Allan Sandage discovered blue stragglers** in the **globular cluster M3** in 1952-53.
- Most are located at least several thousand light-years away from the sun and most are around 12 billion years old or more.
- The **Milky Way's largest and brightest globular** is **Omega Centauri**.

### GJ 367b

Recently, the astronomers found **GJ 367b**, a small planet that is circling a **dim red dwarf star**. It's one of very few rocky, Earth-sized planets astronomers have found so far.

#### About GJ 367b

- The star lies about 31 light-years away from the sun in the constellation of Vela.
- The planet is about **three-quarters** of the size of Earth.
- It is 55% the mass of the earth. This makes GJ 367b one of the **lightest known exoplanets**.
- It takes less than eight hours to complete its orbit. Thus, it is called the Ultra Short Period Planet.
- 86% of GJ 367b is composed of **iron**, with an interior structure resembling Mercury.
- It is way too hot to be habitable.

#### TESS & HARPS

- **TESS is Transiting Exoplanet Survey Satellite**. The GJ 367b was identified using the data provided by TESS. TESS revealed the super short orbital period of GJ 367b.

- **HARPS (High Accuracy Radial Velocity Planet Searcher)** helped researchers to calculate the mass of the planet. HARPS is an instrument installed on a 3.6 metre telescope located in European Southern Observatory in Chile

### Mystery Behind The High Abundance Of Lithium In Stars

Recently, the abundance of lithium was confirmed after the experts conducted a large survey named **GALAH** (named after a common Australian bird). The mystery is the reason behind the high abundance of Lithium in stars, which according to predicted models must get destroyed in the hot plasma of the star.

#### Key findings

- **Research Methodology:** The research surveyed a collection of about 500,000 stars with well-determined physical and chemical properties, including lithium abundances
- Scientists from the Indian Institute of Astrophysics (IIA) Bangalore have discovered clues to the secret behind the high abundance of the element in some evolved stars. They have confirmed that the production of lithium is related to the **burning of helium in the core** of these stars.
- It is proposed to be a simple and short sequence of nuclear reactions involving a collision between the two stable helium isotopes which led to a stable lithium isotope.
- The survey revealed the rare presence of lithium-rich giants in all the Sun-like low-mass stars
- The observations were gathered on the 3.9 m Anglo-Australian Telescope at the Australian Astrophysical Observatory.

### NASA's IXPE Mission

Recently, NASA launched a new mission named **Imaging X-ray Polarimetry Explorer** or IXPE.

- IXPE observatory is a joint effort of **NASA** and **Italian Space Agency**.
- The IXPE observatory is dedicated to measuring the polarization of X-rays from the most extreme and mysterious objects in the universe – supernova remnants, supermassive black holes, and dozens of other high-energy objects.
- By measuring the polarization of these X-rays, we can study where the light came from and understand the geometry and inner workings of the light source.
- The mission's primary length is **two years** and the observatory will be at **600 kilometres altitude**, orbiting around Earth's equator.
- IXPE is expected to study about 40 celestial objects in its first year in space.

### Chandrayaan-2 Findings

- **The Chandrayaan 2 Large Area Soft X-Ray Spectrometer (CLASS)** measures the Moon's X-ray spectrum to examine the presence of **major elements** such as magnesium, aluminum, silicon, calcium, titanium, iron, etc.
- It has detected **the minor elements chromium, manganese** and Sodium for the first time through remote sensing.
- The finding can lay the path for understanding **magmatic evolution** on Moon and deeper insights into the nebular conditions as well as planetary differentiation.
- A key outcome from Chandrayaan-2 has been the exploration of the **permanently shadowed regions** as well as craters and boulders underneath the regolith. This is expected to help scientists to zero in on future landing and drilling sites, including for human missions.

- Chandrayaan 2 Finds Unambiguous Detection of OH And H<sub>2</sub>O
- **Future Moon missions** that hope to make use of such data include:
  - i) Japan Aerospace Exploration Agency (JAXA)-ISRO collaboration Lunar Polar Exploration (LUPEX) mission** (scheduled for launch in 2023/2024). Its aim is to obtain knowledge of lunar water resources and to explore the suitability of the **lunar polar region for setting up a lunar base.**
  - ii) NASA's Artemis missions** plan to enable **human landing** on the Moon beginning 2024 and target sustainable lunar exploration by 2028.
  - iii) Chinese Lunar Exploration Programme** plans to establish a prototype of the International Lunar Research Station (ILRS) at the lunar South Pole and build a platform supporting large-scale scientific exploration.

#### **Chandrayaan-2 Peeks At Distant Sun, Helps Unravel Solar Mystery**

- Abundances of **magnesium, aluminium and silicon in the solar corona** and observed around 100 microflares, provides new insights about coronal mass heating.
- The corona emits ultraviolet, X-rays and consists of ionised gas at temperatures exceeding 2 million degrees Fahrenheit, while just 1,000 miles below, the surface known as the photosphere simmers at just 10,000 degrees Fahrenheit.
- This **mysterious difference in temperatures is called the coronal heating problem.** The new observations state that the high temperatures, when moving away from the surface could be due to strong magnetic fields present above the Sunspots (dark patches seen in visible images of the Sun).
- The X-Ray observations provided the measurement of abundances of various elements like aluminium and silicon, which were estimated to be lower than those seen in the active corona region but higher than that in the photosphere.

#### **Chang'e-5 Probe**

- It is Chinese National Space Administration's (CNSA) **lunar sample return mission**
- It is an unmanned spacecraft by China. The probe is named after the mythical Chinese moon goddess.
- The mission comprises a **lunar orbiter**, a **lander**, and an **ascent probe** that will lift the lunar samples back into orbit and return them back to Earth
- 90% of the materials collected by Chang'e-5 likely derive from the landing site and its immediate surroundings are of **mare basalt type**
- Researchers have traced rapidly cooled glassy material to now **extinct volcanic vents** known as '**Rima Mairan**' and '**Rima Sharp**' located southeast and northeast of the Chang'e-5 landing site.
- These fragments could give insights into past episodes of energetic, fountain-like volcanic activity on Moon.

The Chang'e-5 mission is expected to realize **four "firsts"** in China's space history:

- The first time for a probe to take off from the surface of the Moon.
- The first time to automatically sample the lunar surface.
- The first time to conduct unmanned rendezvous and docking in lunar orbit.
- The first time to return to Earth with lunar soil samples in escape velocity.

#### **NASA's VIPER Mission to Map Water, Other Resources on Moon in 2023**

- NASA will launch its Volatiles Investigating Polar Exploration Rover, or VIPER, in 2023 to get a **closer view of the Moon's South Pole** and evaluate the concentration of water as well as other potential resources on its surface.

- Mission to understand if it is possible for human life to sustain there, by using locally available resources.
- The VIPER mobile robot is the first resource mapping mission on any other celestial body.
- This is going to be a critical step forward in **NASA's Artemis** programme to establish a sustainable human presence on the surface of the Moon by 2028.

#### **UAE's Hope Orbiter Finds Discrete Auroras On Mars**

- Auroras are **caused when charged particles ejected from the Sun's surface called the solar wind** enter the Earth's atmosphere.
- These particles are harmful. Our planet is protected by the **geomagnetic field, which preserves life** by shielding us from the solar wind.
- However, at the north and south poles, some of these solar wind particles are able to continuously stream down, and interact with different gases in the atmosphere to cause a display of light in the night sky called - **Aurora**
- Unlike Earth, which has a strong magnetic field, the **Martian magnetic field has largely died out**. This is because the molten iron at the interior of the planet which produces magnetism has cooled. Unlike auroras on Earth, which are seen only near the north and south poles, discrete auroras on Mars are seen all around the planet at night time
- Studying Martian auroras is important for scientists, for it can offer clues as to why the Red Planet lost its magnetic field and thick atmosphere.

#### **Mars And Water Availability**

- New research from Washington University suggests a fundamental reason for **water unavailability**: Mars may be just too small to hold on to large amounts of water.
- They used isotopes of **potassium** to estimate the presence, distribution, and abundance of volatile elements on different planetary bodies.
- Potassium is a moderately volatile element, but scientists decided to use it as a kind of **tracer** for more volatile elements and compounds, such as water.
- They measured the potassium isotope compositions of 20 previously confirmed Martian meteorites and determined that Mars **lost more potassium** and other volatiles than Earth during its formation.

#### **Chinese Mission To Mars Tianwen 1 Recently Landed In Utopia Planitia**

- **Utopia Planitia** is an Impact basin of Mars.
  - Impact Crater is a circular depression in the surface of planets formed due to hypervelocity impact of smaller bodies. It may be due to meteors.
- It is the place where the Viking 2 lander touched down. Some areas in the region exhibit Scalloped Topography. **Scalloped Topography** is common in the latitudes of 45 degrees to 60 degrees north and south. They consist of shallow rimless depression.

#### **China's Zhurong Rover Travels 1,000 Metres On Mars Surface, Completes Planned Exploration**

- **China's Tianwen-1 mission** to Mars, consisting of an orbiter, a lander, and a rover, was launched on July 23, 2020. The lander carrying the rover (**Zhurong**) landed in the **southern part of Utopia Planitia**, a vast plain on the northern hemisphere of Mars, on May 15, 2021.

- **China became the third nation** to achieve a successful **soft landing on Mars** after the Soviet Union and the United States.
- **China** has also become the **1st country** to carry out an **orbiting, landing, and roving operation during its first mission** to Mars.
- **China becomes the only second country** after the US to send a rover to the surface of Mars.

### NASA's Parker Solar Probe Enters The Sun's Atmosphere

Recently, NASA has announced that the Parker Solar Probe has flown through the Sun's upper atmosphere, the corona, for the first time.

#### About Parker Solar Probe

- Launched in 2018 with the mission of making observations of the **outer corona** of the Sun.
- Parker Solar Probe is making discoveries that others spacecraft couldn't, because they were too far away.
- It is set to fly into the sun's corona within 3.8 million miles from the solar surface, seven times closer than any other spacecraft.
- Parker Solar Probe will revolutionize our knowledge of the origin and evolution of the solar wind.

#### What is Alfvén's critical surface?

- Parker Solar Probe has officially touched the sun. This point is known as the Alfvén critical surface. This point basically marks the end of the solar atmosphere & beginning of solar wind
- Unlike Earth, the Sun doesn't have a solid surface. But it does have a superheated atmosphere, made of solar material bound to the Sun by gravity and magnetic forces. However, as rising heat and pressure push that material away from the Sun, it reaches a point where gravity and magnetic fields are too weak to contain it.

#### Primary goals

- To trace the **flow of energy** and to understand the heating of the solar corona and to find out what accelerates the solar wind.
- Determine the composition and dynamics of the **plasma and magnetic fields** at the sources of the solar wind.
- Explore the dusty plasma near the Sun and its effect on formation of solar wind and solar energetic particles.

### China's Experimental Advanced Superconducting Tokamak (EAST)

- Also known as the '**Artificial Sun**' experiment, has set a new record in the latest experiment, where it achieved a plasma temperature of **216 million Fahrenheit** (120 million C) for 101 seconds.
- It is believed that the temperature at the core of the Sun is 15 million C, which also means that the temperature produced by (EAST) is nearly seven times that of the Sun.
- The mission mimics the energy generation process of the sun. The reactor consists of an advanced nuclear fusion experimental research device located in Hefei, China.
- The **EAST project is part of the International Thermonuclear Experimental Reactor (ITER) facility**, which will become the world's largest nuclear fusion reactor when it becomes operational in 2035.
- The **ITER project** includes the contributions of several countries, including **India, South Korea, Japan, Russia and the United States.**

**Technology:** It replicates the nuclear fusion process carried out by the sun and stars. For nuclear fusion to occur, tremendous heat and pressure are applied on hydrogen atoms so that they fuse together. The nuclei of

deuterium and tritium — both found in hydrogen — are made to fuse together to create a helium nucleus, a neutron along with a whole lot of energy.

Here, fuel is heated to temperatures of over 150 million degrees C so that it forms a hot plasma “soup” of subatomic particles. **With the help of a strong magnetic field, the plasma is kept away from the walls of the reactor** to ensure it does not cool down and lose its potential to generate large amounts of energy. The plasma is confined for long durations for fusion to take place.

While fission is an easier process to carry out, it generates far more nuclear waste. Once mastered, nuclear fusion could potentially provide unlimited clean energy at very low costs.

### Hycean World

- Some astronomers have identified a new class of exoplanets – Hycean worlds.
  - The word **Hycean** comes from the words *hydrogen and ocean*.
  - Planet-wide **oceans** and **hydrogen-rich atmospheres** might cover these worlds.
  - They are also uniquely alien, **up to 2.6 times the diameter of Earth**, with **temperatures up to 200 degrees celsius** and **thick hydrogen atmospheres**. This places them somewhere **between Earth and giant planets** like Neptune or Uranus.
  - With no analogs in the Solar System, these planets are variedly classed as **super-Earths** or **mini-Neptunes** depending on inferences about their bulk compositions based on their densities.
  - These planets, unlike most mini-Neptunes, **may have solid surfaces** like Earth. Many of the known Hycean candidates are **larger and hotter than Earth**, but still would be able to host large oceans.
  - Some Hyceans orbit so close to their stars that they're **tidally locked**, with one hot dayside and one eternally dark nightside. And some orbit very far away, receiving very little stellar radiation. But life could exist even on such extreme **Hyceans**.
- **Tidal locking** is the name given to the situation when an object’s orbital period matches its rotational period.

### Significance

- The **conditions** on such planets might be **similar to some of the more extreme aquatic environments on our planet**, but could theoretically still **support at least microbial life**.
- Hycean worlds could greatly accelerate the search for life elsewhere. In some ways, **they are reminiscent of Earth**, largely or even completely covered by oceans. Hycean worlds **could support life different from that on Earth**.

### Exoplanets

- An exoplanet or extrasolar planet is a planet **outside the Solar System**. The **first** confirmation of detection of exoplanets occurred in **1992**.
- More than 4,400 exoplanets have been discovered till now. They are very **hard to see directly with telescopes**. They are hidden by the **bright glare of the stars they orbit**. So, astronomers use other ways to detect and study exoplanets such as looking at the effects these planets have on the stars they orbit

### Geometry Of Space-Time Can Cause Neutrinos To Oscillate

- Detected for the first time in 1959, neutrinos are the **second most abundant particles** in the world, after photons, or the light particle.
- Neutrinos are mysterious particles, produced copiously in nuclear reactions in the Sun, stars, and elsewhere. They also "oscillate"-- meaning that different types of neutrinos change into one another.

- Probing of oscillations of neutrinos and their relations with mass are crucial in studying the origin of the universe. Neutrinos are created by various radioactive decays; during a supernova, by cosmic rays striking atoms etc.

### NASA Announces Two New Missions To Venus : Davinci+ And Veritas

- These two sister missions both aim to understand how Venus became an inferno-like world, capable of melting lead at the surface.
- The **Davinci+ (Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging)** mission will measure the planet's atmosphere to gain insight into how it formed and evolved, determine whether Venus ever had an ocean and return the first high resolution images of the planet's "tesserae" geological features (These features could be comparable to continents on Earth).
- **Veritas (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy):** This mission will map the planet's surface to understand its geological history and investigate how it developed so differently than Earth. It will use a form of radar to chart surface elevations and discover **whether volcanoes and earthquakes are still happening.**
- **The last US probe to visit the planet was Magellan orbiter in 1990.**
- Venus is the second planet from the sun and the **hottest planet** in the solar system with a surface temperature of 500 °C - high enough to melt lead.
- Venus is one of just two planets that **rotate from east to west**, the other being Uranus.

#### Missions to Venus

**Magellan** - A NASA mission that ended in 1994.

**Venus Express**- A European mission- focused on atmospheric science.

**Akatsuki**- Japanese spacecraft- focused on atmospheric science

**European Space Agency (ESA) is evaluating a Venus mission, called EnVision, alongside two astronomy proposals - Theseus and Spica**

### European Space Agency's Envision Mission To Venus

- European Space Agency (ESA) has announced that it has selected **EnVision** as its next orbiter that will visit Venus sometime in the 2030s.
- EnVision is an ESA led mission with contributions from NASA. It will be launched on an Ariane 6 rocket, the spacecraft will take about 15 months to reach Venus and will take 16 more months to achieve orbit circularisation.
- Objectives: To study the planet's atmosphere and surface, monitor trace gases in the atmosphere and analyse its surface composition. A radar provided by NASA will help to image and map the surface.

### DARK ENERGY

- An international team of researchers made the **first direct detection of dark energy**. The experiment named **XENON1T**, is the **world's most sensitive dark matter experiment** and was operated deep underground at the **INFN National Laboratory Gran Sasso in Italy**.
- Dark energy is the mysterious form of energy that makes up about **68% of the universe** and has intrigued physicists and astronomers for decades.

- The experiments aim to detect particles in the form of **Weakly Interacting Massive Particles (WIMPs)** by looking for rare interactions via nuclear recoils in a **liquid xenon target chamber**.
- **Other Dark Matter and Energy Experiments**
- **LUX-Zeplin** – a next-generation dark matter experiment located at the Sanford Underground Research Facility, US.
- **PandaX-xT** – project at China Jinping Underground Laboratory.
- **Dark Matter And Dark Energy:**
- While **dark matter attracts and holds galaxies together, dark energy repels and causes the expansion of our universe**.
- Despite both components being invisible, a lot more is known about dark matter, since its existence was suggested as early as the 1920s, while dark energy wasn't discovered until 1998.

**About Dark Energy**

- The **Big Bang** occurred nearly **15 billion years ago** and expanded. Earlier, astronomers believed that eventually the expansion of the Universe will slow down because of gravity and it will re-collapse.
- However, data from the **Hubble Telescope** suggested that the **Universe's expansion is accelerating**.
- The astronomers theorize that the **faster expansion rate is due to a mysterious, dark force or energy** that is pulling galaxies apart.
- The term **'dark'** is used to denote the **unknown**.
- **Fifth Fundamental Force:** There are four fundamental forces in the universe, and speculative theories have proposed a **fifth force** – something that can't be explained by the four forces.
- To hide or screen this fifth force, many models for dark energy use special mechanisms.
- Some theorists have named this **"quintessence," after the fifth element of the Greek philosophers**.

**Fundamental Force Particles**

Force	Particles Experiencing	Force Carrier Particle	Range	Relative Strength*
<b>Gravity</b> acts between objects with mass	all particles with mass	graviton (not yet observed)	infinity	↓ much weaker ..... much stronger
<b>Weak Force</b> governs particle decay	quarks and leptons	W <sup>+</sup> , W <sup>-</sup> , Z <sup>0</sup> (W and Z)	short range	
<b>Electromagnetism</b> acts between electrically charged particles	electrically charged	γ (photon)	infinity	
<b>Strong Force**</b> binds quarks together	quarks and gluons	g (gluon)	short range	

**MicroAge Experiment**

Recently, an experiment which is called MicroAge was launched to the International Space Station (ISS).

**About the experiment**

- The MicroAge mission was launched by Scientists at the University of Liverpool, funded by the UK Space Agency, on a **SpaceX Falcon 9 rocket**.
- Human muscle cells will be launched into space as part of an experiment to help people live longer and healthier lives.

**How cells will be sent to space?**

- **Human cells have been put into small 3D holders**.
- Once in space, they will be electrically stimulated to induce contractions in the muscle tissue.

- Researchers will then take a closer look at what happened and compare the findings with what is happening on Earth. The experiment will return to Earth in January 2022 for further analysis.

**What led to this experiment?**

It is known for a long time that astronauts in space tend to lose muscle rapidly. So, people have speculated if that is an accelerated ageing phenomenon. Astronauts at the space station had an analogous problem. Each astronaut on space station exercises at least 2.5 hours each day. Despite this fact, they lose a significant amount of muscle. They find it difficult to walk for a while, after they return back to earth.

**Nauka Module Of Russia To Replace Pirs At ISS**

- It is the biggest space laboratory Russia has launched to date and will replace Pirs, a Russian module on the International Space Station (ISS) used as a docking port for spacecraft and as a door for cosmonauts to go out on spacewalks.
- Nauka will serve as the country's main research facility on the space station. Nauka will be attached to the critical **Zvezda module**, which provides all of the space station's life support systems and serves as the structural and functional centre of the Russian Orbital Segment (ROS) — **the Russian part of ISS**.

**GSLV-F10 Failure: ISRO's EOS-03 Satellite Mission**

The launch of earth observation satellite **EOS-03** onboard **GSLV-F10** was unsuccessful.

- EOS-03: It is an earth observation satellite. Last year, ISRO launched EOS-01 which is a Radar Imaging Satellite (RISAT) that will work together with RISAT-2B and RISAT-2BR1.
- It was expected to provide near real-time imaging, which could be used for quick monitoring of natural disasters, episodic events and any short-term events. It would also enable **monitoring of water bodies, crops, vegetation condition, forest cover changes**.
- Radar imaging is unaffected by weather, cloud or fog, or the lack of sunlight. It can produce high-quality images in all conditions at all times.

**Popular Earth imaging Satellites by ISRO:** RESOURCESAT- 2, 2A, CARTOSAT-1, 2, 2A, 2B, RISAT-1 and 2, OCEANSAT-2, Megha-Tropiques, SARAL and SCATSAT-1, INSAT-3DR,

**What is Geosynchronous Satellite Launch Vehicle (GSLV)**

GSLV is a three stage vehicle with the first stage comprising a solid booster with four liquid strap-on motors. The second stage is a liquid engine and the third stage is the indigenously built Cryogenic Upper Stage (CUS) which uses cryogenic propellants such as Liquid Hydrogen (LH<sub>2</sub>) as fuel and Liquid Oxygen (LOX) as Oxidizer.

**NEA Scout: NASA'S New Spacecraft**

- NEA stands for Near-Earth Asteroid. NEA Scout is one of several payloads on Artemis I.
- Its main mission is to fly by and collect data from a near-Earth asteroid.
- It will also be America's first interplanetary mission using a special solar sail propulsion.

**Artemis program**

- NASA wishes to demonstrate new technologies, capabilities and business approaches that will ultimately be needed for the future exploration of Mars.
- It stands for **Acceleration, Reconnection, Turbulence, and Electrodynamics of the Moon's Interaction with the Sun**.
- The program is divided into three parts:

- Artemis I launched 2021 and involve an uncrewed flight to test the Space Launch System (SLS) and Orion spacecraft.
- Artemis II will be the first **crewed flight test** and is targeted for 2023.
- Artemis III will **land astronauts on the Moon's South Pole** in 2024.

### PASIPHAE

- **Polar-Areas Stellar-Imaging in Polarisation High-Accuracy Experiment (PASIPHAE)** is an international collaborative sky surveying project with an **aim to study polarisation in light coming from millions of stars**.
- It will focus on capturing starlight polarisation of very faint stars that are so far away that polarisation signals from there have not been systematically studied.
- The distances to these stars will be obtained from measurements of the **GAIA** satellite. By combining these data, astronomers will perform a maiden magnetic field tomography mapping of the interstellar medium of very large areas of the sky using a novel **polarimeter instrument known as WALOP (Wide Area Linear Optical Polarimeter)**.

*Gaia* is a space observatory of the **European Space Agency (ESA)**, launched in 2013 and expected to operate until 2022. The spacecraft is designed for astrometry measuring the positions, distances and motions of stars with unprecedented precision.

The mission aims to construct by far the largest and most precise 3D space catalog ever made, totalling approximately 1 billion astronomical objects.

### Shenzhou-12 and Tianhe

- **Shenzhou-12** manned spaceship has successfully docked with **China's space station core module Tianhe** and entered the orbital capsule.
- **Chinese Space station:** The new multi-module **Tiangong station** is set to be operational for at least 10 years. **Tianhe is one of three main components of what would be China's first self-developed space station**, rivalling the only other station in service – the ISS. The space station will operate in low-Earth orbit at an altitude of 340-450 km above Earth's surface.
- So far, China has sent two previous space stations into orbit- the Tiangong-1 and Tiangong-2 were trial stations.

### Bharti Global-Backed Oneweb

- It is a Low Earth Orbit (LEO) Satellite Communications Operator, Has Launched Its Next Batch Of 36 Satellites
- Using LEO satellites OneWeb seeks to offer connectivity across the UK, Alaska, Northern Europe, Greenland, the Arctic Seas and Canada. The company expects the service to be switched on before the **end of the year**.
- It calls this programme the '**Five to 50**' service of offering internet connectivity to all regions **north of 50 degrees latitude**.
- **LEO satellites** are positioned around **500km-2000km from earth**, compared to stationary orbit satellites which are approximately 36,000km away. As LEO satellites orbit closer to the earth, they are able to provide **stronger signals and faster speeds than traditional fixed-satellite systems**

### Largest Collection Of Fast Radio Bursts (FRBS)

- Scientists with the **Canadian Hydrogen Intensity Mapping Experiment (CHIME)** Collaboration have assembled the largest collection of fast radio bursts (FRBs) in the telescope's first FRB catalogue.

- FRBs are oddly **bright flashes of light**, registering in the radio band of the electromagnetic spectrum, which blaze for a few milliseconds before vanishing without a trace.

**CHIME:** It is a large stationary radio telescope in British Columbia, Canada. The telescope receives radio signals each day from half of the sky as the Earth rotates. The telescope has no moving parts and observes half of the sky each day as the Earth turns.

CHIME is a partnership between the University of British Columbia, McGill University, the University of Toronto and the Canadian National Research Council's Dominion Radio Astrophysical Observatory.

### Space Rice

- It is the rice harvested from seeds that went on a 23-day lunar voyage with China's Chang'e-5.
- It is believed that rice seeds exposed to cosmic radiation and zero gravity, the environment in Space may mutate and produce higher yields once planted on Earth.
- China has been taking seeds of rice and other crops to Space since 1987.

### Why Mercury Has A Big Iron Core

- A new study reveals that the sun's magnetism is the reason the sun's magnetic field influences the density, mass, and iron content of Mercury's core.
- A gradient in which the metal content in the core drops off as the planets get farther from the sun.
- The sun's magnetic field controlled the distribution of raw materials in the early forming solar system.

### Fragile X Syndrome

- It is a genetic disorder and is **caused by an abnormality (mutation) in the FMR1 gene**. FMR1 is a gene located on the X chromosome that produces a protein called FMRP (Fragile X mental retardation protein) needed for proper cell function.
- The syndrome became known as the fragile X syndrome because some individuals with the disorder were found to have a segment of their **X chromosome** that appeared to be **broken or fragile** (although not completely disconnected). Later it was learned that the FMR1 gene is located precisely where the X chromosome appears to be "fragile" in affected individuals.
- It is the absence or severe reduction of the protein (FMRP) made by the FMR1 gene, that causes fragile X syndrome.
- Mutation of the FMR1 gene causes the loss or reduction of FMRP.
- Human body cells normally have 46 chromosomes. Pairs of human chromosomes are numbered from 1 through 22 and the sex chromosomes are designated X and Y.
- Males have one X and one Y chromosome and females have two X chromosomes. **Fragile X syndrome is a Xlinked dominant disorder.**
- Females with the abnormal gene may be affected by this disorder. Males are usually more severely affected than females.

### Mosquitoes To Combat Dengue

- Recently, Researchers in Indonesia have found a way to fight **disease-bearing** mosquitoes by breeding a species of insect which carries **Wolbachia bacteria**.

- Wolbachia is a common bacterium that occurs naturally in 60% of insect species, including some mosquitoes, fruit flies, moths, dragonflies, and butterflies.
- It is **not** found in dengue-carrying *Aedes aegypti* mosquitoes, the primary species responsible for transmitting human viruses such as Zika, dengue, chikungunya, and yellow fever.
- The lab-bred mosquitoes with Wolbachia will mate with mosquitoes with dengue, which will produce Wolbachia mosquitoes ('good' mosquitoes).
- Wolbachia bacteria in the mosquitoes prevent viruses like dengue from growing inside them.
- Wolbachia method helps to protect communities from mosquito-borne diseases like Zika, dengue, chikungunya, and yellow fever and does so without posing a risk to natural ecosystems or human health.

### Dengue

- Dengue is a **mosquito-borne tropical disease** caused by the **dengue virus**, transmitted by several species of mosquito within the genus *Aedes*, principally *Aedes aegypti*.
- There are four strains from Type I-IV, of which **Type-II and IV** are considered more severe.
- India registered over 1 lakh dengue cases in 2018 and over 1.5 lakh cases in 2019, according to the **National Vector-Borne Disease Control Programme (NVBDCP)**.  
**NVBDCP** is the central nodal agency for prevention and control of six vector-borne diseases i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis, and Chikungunya in India. It works under the **Ministry of Health and Family Welfare**.
- The dengue vaccine **CYD-TDV or Dengvaxia** was approved by the **US Food & Drug Administration** in **2019**, the first dengue vaccine to get the regulatory nod in the US. Dengvaxia is basically a **live, attenuated dengue virus** that has to be administered in people of ages 9 to 16 who have laboratory-confirmed previous dengue infection and who live in **endemic areas**.

### Antimalarial Vaccine

- WHO's Strategic Advisory Group of Experts on Immunization (SAGE) considers evidence to decide on the rollout of the **first Malarial vaccine (RTS, S)**.
- **The drug combo proves most efficacious in the Africa trial.**
- The study measured the efficacy of vaccination with or without chemoprevention (drugs). "The combination of these interventions resulted in a substantially lower incidence of uncomplicated malaria, severe malaria, and death from malaria than either intervention alone."
- The malaria vaccine prevents the parasite from developing in humans. However, some breakthrough infections could happen. When there is a vaccine breakthrough infection, the Antimalarial drug kills those parasites.
- **Malaria:** It is a life-threatening **mosquito-borne blood disease** caused by **plasmodium parasites**, predominantly found in the tropical and subtropical areas of **Africa, South America as well as Asia**.
- The parasites **spread through the bites of infected female Anopheles mosquitoes**.
- When an infected mosquito bites a person, the **parasite is released into the bloodstream**, it then travels to the liver where it matures.

### Types

- **Four types of Parasites** can infect humans: *Plasmodium Vivax*, *P. ovale*, *P. malariae*, and *P. falciparum*.
- **Indian Scenario:** India carries **2% of the global malaria** case burden and **2% of global malaria deaths**.
- India also bears **85.2%** of the malaria burden in **South East Asia**.

- India carries **47% of the global P. vivax malaria burden**, making the country strategically important for **global malaria elimination**, particularly in the South-East Asian region.
- On the other hand, **India** is the only high endemic country that has **reported a decline of 17.6% in 2019 as compared to 2018**.

### Nipah Reappears

- After a gap of over 3 years, a case of zoonotic Nipah virus infection was reported in Kozhikode, Kerala
- The first outbreaks of the Nipah virus among humans were reported from Malaysia (1998) and Singapore (1999). The virus takes its name from a village in Malaysia.
- **Fruit bats commonly known as flying fox**, are considered to be a natural reservoir of the virus. They transmit this virus to other animals like pigs, dogs, cats, goats, horses, and sheep.
- **Zoonotic virus**: Humans get infected mainly through direct contact with these animals. The virus can also be passed on through food contaminated by the **saliva or urine** of these infected animals or directly from person to person.
- The Nipah virus is known to spread far more slowly than SARS-CoV-2.
- The disease has also been identified periodically in eastern India.
- Organism which causes Nipah Virus encephalitis is an **RNA or Ribonucleic acid virus** closely related to **Hendra virus**.

### Vaccine Against Nipah Virus

- Preliminary animal trial results seem to suggest Covishield vaccine gives protection against the Nipah virus.
- No approved vaccine yet exists for the lethal Nipah virus.
- Researchers in the United States reported that the **ChAdOx1 vaccine vector**, when customized to the Nipah virus, fully protected African green monkeys.
- **ChAdOx1** is a **multipurpose vaccine vector**, meaning it can be customized to carry DNA from a wide variety of pathogens. The version of ChAdOx1 that is used in the Covishield or AstraZeneca vaccine is the ChAdOx1 with a piece of spike protein of SARS-CoV-2.
- For the Nipah study, the scientists loaded a **piece of glycoprotein** from a Nipah virus strain found in Bangladesh, where annual outbreaks occur.
- The test vaccine for the purposes of the study was called **ChAdOx1 NiV**.

### Possible Antibodies Against Nipah Virus Detected In Bats From Mahabaleshwar Cave

- A survey by the Indian Council of Medical Research (ICMR) and the National Institute of Virology has picked up samples with the possible presence of antibodies against the Nipah virus in some bat species from a cave in Mahabaleshwar (Maharashtra).
- The survey was aimed at studying the prevalence of the **Nipah virus (NiV) – one of the top-10 global priority list pathogens** identified by WHO – in bats of India.
- India has experienced four NiV outbreaks, with the case fatality rate between 65 percent and 100 percent. The most recent outbreak started in Kerala in 2018.
- While the Case Fatality Rate (CFR) among COVID-19 affected patients is between 1-2%, that for Nipah infections is in the range of 65-100%

### Toxic 30 Sunscreen

- A petition has been submitted by some activists to the **US Food and Drug Administration (FDA)** to reclassify **toxic 3 Os (Oxybenzone, Octinoxate, and Octocrylene)** used in sunscreen.
- They demanded that chemicals be shifted to **“Not Generally Recognized As Safe & Effective” (GRASE Category II)**.
- Oxybenzone (OBZ), avobenzene (AVB), octocrylene (OCR), and octinoxate (OMC) are **UltraViolet (UV) filters** commonly added to chemical sunscreens. These UV filters are known to widely contaminate the environment through a variety of **anthropogenic sources**, including sewage discharge.
- **Octocrylene** in sun protection products **degrades into benzophenone**. Benzophenone is a carcinogen that can also interfere with key hormones and reproductive organs.

### Silicosis

- Silicosis is an occupational lung disease, caused by inhaling large amounts of **crystalline silica dust**, the tiny particles of dust settle deeply into the breathing passages. There were lot of instances of silicosis death in Rajasthan, Madhya Pradesh and Gujarat.
- **Silica** is a substance naturally **found** in certain types of **stone, rock, sand, and clay**.
- **Effect:** Inside the lungs it causes inflammation and gradually leads to areas of hardened and scarred lung tissue, ultimately be fatal if the lungs stop working properly (respiratory failure).
- **Treatment:** There is no treatment for silicosis because lung damage can't be reversed. Treatment aims to relieve symptoms.

### Peter Pan Syndrome (PPS)

- A person accused of sexually assaulting a minor recently said in a special court in Mumbai that he suffered from “Peter Pan Syndrome”.
- The syndrome is named after a **1900s fictional character. Peter Pan is a care-free young boy, who never grows up**, created by **Scottish novelist James Matthew Barrie**.
- It is said that people who develop similar behaviours — of living life carefree, finding responsibilities challenging in adulthood, and basically, “never growing up” — suffer from Peter Pan Syndrome. This syndrome has **not** been recognised by WHO as a health disorder.

### Tuberculosis

- Centenary celebration is being observed for the **Bacille Calmette-Guérin (BCG)** vaccine, which is presently the **sole vaccine** available for the prevention of **Tuberculosis (TB)**.
- TB is **caused by a bacterium called Mycobacterium tuberculosis**. Some of Mycobacteria cause diseases like TB and **Leprosy** in humans and others infect a wide range of animals.
- In humans, TB **most commonly affects the lungs** (pulmonary TB), but it can also affect other organs (extra-pulmonary TB).
- TB is **spread from person to person through the air**. When people with lung TB cough, sneeze, or spit, they propel the TB germs into the air.
- Eight countries accounted for **two-thirds of the new TB cases**: India, Indonesia, China, Philippines, Pakistan, Nigeria, Bangladesh, and South Africa.
- **India reported 1.8 million TB cases** between January and December 2020 as compared to 2.4 million the year before.

- **Multidrug-Resistant Tuberculosis (MDR-TB)** is a strain of TB that cannot be treated with the two most powerful first-line treatment anti-TB drugs.
- **Extensively Drug-Resistant Tuberculosis (XDR-TB)** is a form of TB caused by bacteria that are resistant to several of the most effective anti-TB drugs.

#### **Bacillus Calmette-Guerin (BCG) Vaccination**

- BCG was developed by two Frenchmen, Albert Calmette and Camille Guerin, **by modifying a strain of Mycobacterium Bovis** (that causes TB in cattle). It was **first used in humans in 1921**. In India, BCG was **first introduced on a limited scale in 1948** and became a **part of the National TB Control Programme** in 1962.
- **100 years has passed since BCG vaccine was introduced to combat TB.**
- The BCG vaccine contains a live but weakened strain of tuberculosis bacteria that provokes the body to develop antibodies to attack TB bacteria.
- Unlike other vaccines, the BCG vaccine may also boost the innate immune system, first-line defenses that keep a variety of pathogens from entering the body or from establishing an infection.
- BCG was developed by modifying a strain of Mycobacterium bovis (that causes TB in cattle)
- BCG is the only licensed vaccine available for the prevention of TB

#### **Nationwide Pneumococcal Conjugate Vaccine Drive**

- The **Union Health Minister** has launched a **nationwide expansion of Pneumococcal 13-valent Conjugate Vaccine (PCV)** with an aim **to reduce under 5 mortalities** caused due to pneumonia.
- It was launched under the **Universal Immunisation Programme (UIP)** as a part of **'Azadi ka Amrit Mahotsav'**.
- It was for the **first time in the country** that PCV would be available for universal use.
- **Pneumococcal Conjugate Vaccine (PCV):** A Pneumococcal Conjugate Vaccine **containing 13 different strains of the bacterium Streptococcus pneumoniae**, used in children and studied in patients with the impaired immune system for the prevention of pneumococcal disease.
- **Conjugate vaccines** are made using a combination of two different components.
- **Pneumococcal Disease:** It is a **bacterial infection caused by Streptococcus pneumoniae**, sometimes known as pneumococcus.

#### **HPV Vaccine Reducing Cervical Cancer**

- New research has found that the **Human papillomavirus (HPV) vaccine (Cervarix)** **reduces the risk of Cervical Cancer significantly in women.**
- The results are important because the vaccine was introduced in the 2000s and studies confirming that it is effective against cancer have come up only recently.
- It **reduced the risk by 34% in women who were aged 16-18 years** when they were offered the jab.
- Over a **period of 11 years (since 2006)**, the vaccine **prevented around 450 cervical cancers** and around 17,200 cases of precancerous conditions.
- **Cervical Cancer:** It is a type of cancer that occurs **in the cells of the cervix** - the lower part of the uterus that connects to the vagina. Various strains of the **Human papillomavirus (HPV)** **play a role in causing most cervical cancer.** When exposed to HPV, the body's immune system typically prevents the virus from doing harm.

- **Human papillomavirus:** Human papillomavirus (HPV) is the **most common viral infection of the reproductive tract.**

#### Types of HPV Vaccines:

- **Quadrivalent vaccine (Gardasil):** It protects against **four types of HPV (HPV 16, 18, 6, and 11)**. The latter two strains cause genital warts.
- **Bivalent vaccine (Cervarix):** It protects against **HPV 16 and 18 only.**
- **Non-valent vaccine (Gardasil 9):** It protects against **nine strains of HPV.**
- These vaccines prevent cervical cancer in women and girls who have not yet been exposed to the virus.
- Officially, the HPV vaccine has **not been recommended for boys and males in India.**

#### Scrub Typhus

A mystery fever was reported from parts of Uttar Pradesh. It claimed about 40 lives, mostly children in one week. This viral fever was identified as Scrub typhus.

#### What Is Scrub Typhus

- Scrub typhus is a re-emerging Rickettsial infection. This vector-borne disease has been earlier reported in India and other South Asian countries. This disease is marked by fever and rashes. It also affects the central nervous system, cardiovascular system, respiratory system, renal system, and gastrointestinal systems. In complicated cases, it could lead to pneumonia, meningo-encephalitis, gastro-intestinal bleeding, acute renal failure, and acute respiratory distress syndrome (ARDS).

**Background:** This disease has been named “scrub” after the type of vegetation that harbors the vector. Typhus is a Greek word with meaning “fever with stupor” or smoke. This disease took the form of an epidemic during World War II in some countries while during the Second World War, it emerged as the most dreaded disease among soldiers of the Far East. In India, this fever out in an epidemic form during Second World War in Assam and West Bengal.

#### How Does It Cause

Scrub typhus fever is caused by a bacterium called *Orientia tsutsugamushi*. The name of the bacterium is of Japanese origin. The word “tsutsuga” means illness and “mushi” means insect. This disease spreads through bites of infected chiggers or larval mites. Bite marks are found on the armpit, genitalia or neck.

#### Plant As A Source mRNA Vaccine

- Scientists are doing research to demonstrate whether plants can be used to produce mRNA vaccines.
- The research foundation has set 3 Goals-
  - To prove that DNA containing the mRNA vaccines can be successfully delivered into the part of plant cell where it will replicate.
  - Demonstrating that plants can produce enough mRNA
  - Demonstrating right dosages
- The ideal cells for making this work are Chloroplasts.

#### What Are mRNA Vaccines

- mRNA vaccines **trick the body into producing some of the viral proteins themselves.**
- They work by using **mRNA, or messenger RNA**, which is **the molecule that essentially puts DNA instructions into action.** Inside a cell, mRNA is used as a template to build a protein.

### How Does It Work

- To produce an mRNA vaccine, scientists produce a synthetic version of the mRNA that a virus uses to build its infectious proteins.
- This mRNA is delivered into the human body, whose cells read it as instructions to build that viral protein.
- These proteins are solitary, so they do not assemble to form a virus.
- The immune system then detects these viral proteins and starts to produce a defensive response to them.

### Biological E Jab Gets Nod For Trial Among Children

- Hyderabad-based pharmaceutical firm Biological E. has received the Drugs Controller General of India (DCGI) approval for initiating the Phase II/III study to evaluate its CORBEVAX vaccine in children aged above 5 years.
- CORBEVAX is a **receptor-binding domain (RBD)** protein sub-unit vaccine for coronavirus disease
- **RBD** is a short immunogenic fragment from a virus that binds to a specific *endogenous receptor* sequence to gain entry into host cells. Specifically, **these refer to a part of the 'spike' glycoprotein (S-domain)** which is needed to interact with endogenous receptors to facilitate membrane fusion and delivery to the cytoplasm.

**Difference between Corbevax and Other Covid-19 Vaccines:** They are either **mRNA vaccines** (Pfizer and Moderna), **viral vector vaccines** (Covishield and Sputnik V), or **inactivated vaccines** (Covaxin, Sinovac-CoronaVac, and Sinopharm's Vero Cell).

- **Viral vector and mRNA vaccines use a code to induce our cells** to make the spike proteins against which the body has to build immunity.
- In the case of Corbevax, protein itself is given.
- **Viral vector vaccines** use a modified version of a different virus (the vector) to deliver important instructions to our cells.

### Other Types of Vaccine

- **Live-attenuated Vaccines:** Live vaccines use a **weakened (or attenuated) form of the germ** that causes a disease.
- Because these vaccines are so **similar to natural infection** that they help prevent, they create a strong and long-lasting immune response.
- The limitation of this approach is that these vaccines usually **cannot be given to people with weakened immune systems**.
- Live vaccines are used against **Measles, mumps, rubella (MMR combined vaccine), Rotavirus, Smallpox** among others.
- **Subunit, recombinant, polysaccharide, and conjugate Vaccines:** They use **specific pieces of the germ** - like its protein, sugar, or capsid (a casing around the germ). They give a very strong immune response.
- They can also be used on people with weakened immune systems and long-term health problems.
- These vaccines are used to protect against **Hib** (Haemophilus influenzae type b) disease, **Hepatitis B, HPV (Human papillomavirus), Pneumococcal disease** among others.
- **Toxoid Vaccines:** Toxoid vaccines **use a toxin made by the germ that causes a disease**. Toxoid vaccines are used to protect against **Diphtheria, Tetanus**.

### Breakthrough Infections

- A 'breakthrough infection' refers to the virus being able to **penetrate the protective barrier of antibodies**.
- Breakthrough infections are infections following two doses of vaccine.

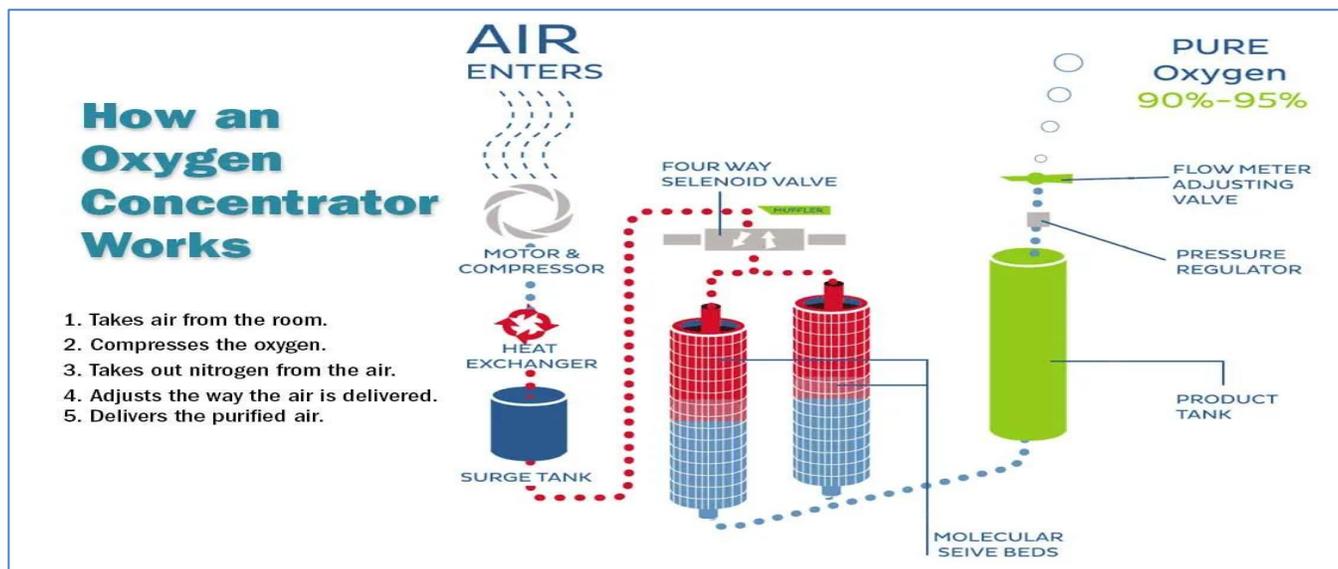
- Natural immunity following a virus infection stays robust and lasts longer. People infected with the 2002 Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) have been shown to have strong immunity for up to three years.
- A vaccine effectiveness study undertaken in Israel has shown that natural infection confers stronger immunity against the SARS CoV2 virus than even full vaccination.
- While it is a fact of evolution that viruses would mutate to be able to avoid antibodies, and vaccines, therefore, would have to keep being upgraded, it seems that the moment appears to have come too soon.

### Mucormycosis Also Called Black Fungus

- It is a serious but rare fungal infection caused by a group of molds called mucormycetes, which are abundant in the environment. **A Number Of Covid-19 Patients Developed it.**
- The types of Mucormycosis are: Rhinocerebral (Sinus and Brain), Pulmonary (Lung), Gastrointestinal, Cutaneous (Skin), and disseminated Mucormycosis.
- It occurs through inhalation, inoculation, or ingestion of spores from the environment. Mucormycosis does not spread between people or between people and animals.
- Mucormycosis needs to be treated with prescription antifungal medicine. In some cases surgery may be required.

### Oxygen Concentrator and Medical Oxygen

- The concentrator takes in this atmospheric air, filters out the nitrogen and concentrates all the oxygen. The oxygen that is concentrated in this device holds about 90 to 95% purity.
- Oxygen Concentrator could help those whose saturation levels range between 88 and 92.
- The sieve beds shown in the diagram, **uses Zeolite to filter out Nitrogen.**



### Moderna's COVID-19 Vaccine

- The Drugs Controller General of India (DCGI) has granted permission to Mumbai-based pharma major Cipla to import Moderna's COVID-19 vaccine

- The vaccine, **mRNA-1273**, manufactured by Moderna TX, Inc., is a two-dose vaccine with the shots to be given 28 days apart. Messenger RNA vaccines, also called mRNA vaccines, are a new vaccine technology platform.
- The **mRNA vaccines teach human cells how to make a protein**, or even just a piece of a protein of the virus, triggering an immune response inside human bodies. The benefit of mRNA vaccines, like all vaccines, is that **those vaccinated gain protection without ever having to risk the serious consequences of getting sick with Covid-19**.
- Vaccines and medicines, and even diagnostic tests and medical devices, require the approval of a regulatory authority which is the Central Drugs Standard Control Organisation (CDSCO).

#### WHO) Has Said Only B.1.617.2 (Delta Variant) Is A “Variant Of Concern” Now

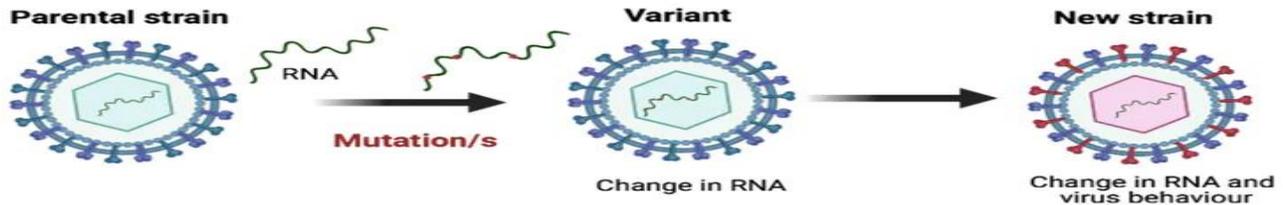
- **The B.1.617 variant was first detected in India** and was divided in three lineages — B.1.617.1, B.1.617.2 and B.1.617.3.
- Variants of a virus have one or more **mutations** that differentiate it from the other variants that are in circulation. Essentially, the goal of the virus is to reach a stage where it can cohabit with humans because it needs a host to survive. Errors in the viral RNA are called mutations, and viruses with these mutations are called variants. Variants could differ by a single or many mutations.
- A **mutation means a change in the genetic sequence of the virus. A mutation in an RNA virus often happens when the virus makes a mistake while it is making copies of itself.**
- The Health Ministry has categorised **Delta Plus variant** of coronavirus as a ‘variant of concern’.
- **Variant of Concern** is one for which there is evidence of: (i) **An increase in transmissibility.** (ii) **More severe diseases that require hospitalisation or death.** (iii) **A significant reduction in neutralisation by antibodies** generated during previous infection or vaccination (iv) **Reduced effectiveness of treatments or vaccines, or diagnostic detection failures.**
- In the case of the **Delta Plus variant**, the Health Ministry identified three characteristics — increased transmissibility; stronger binding in receptors of lung cells; and potential reduction in monoclonal antibody response
- Variants of concern’ include **B.1.1.7 or Alpha** first identified in the **UK**, **B.1.351 or Beta** first identified in **South Africa**, and **B.1.427 or Epsilon** first identified in the **US**.
- The US Center for Disease Control (CDC) has revealed that **The Delta variant of the coronavirus spreads as easily as chickenpox** with a transmission rate up to nine times more than the original strain.

#### Mu Covid Variant

- Ever since the origin of the new strain of the Coronavirus, the virus has mutated several times. First Alpha, then Delta, Lambda, and now researchers have come across a new variant of COVID-19 termed **Mu**.
- This mutant virus was first found in Colombia in January 2021.
- The genomic structure of the Mu variant is different from the original strain of the virus. Thus it can easily evade the protection provided by the COVID-19 vaccines being administered across the globe.
- It is the general nature of the RNA of the virus including coronavirus to evolve and change structure over time. That may happen due to **geographic separation**.
- The Mu variant has been termed as the variant of interest, which means it **looks like** it has the **potential** to do more harm.

**Mutation, Variant, and Strain**

- When a virus replicates it doesn't always manage to produce an exact copy of itself.
- This means that, over time, the virus may start to differ slightly in terms of its genetic sequence.



- Any changes to the viral genetic sequence during this process is known as a **Mutation**.
- Viruses with **new mutations** are sometimes called **Variants**. Variants can differ by one or multiple mutations.
- When a new variant has **different functional properties to the original virus** and becomes established in a population, it is **sometimes referred to as a New Strain** of the virus.
- All strains are variants, but not all variants are strains.

**Kappa and Lambda, New Variants of Interest (VoI)**

- **Kappa** was first detected in India. While **Lambda** is the newest VoI identified by the UN health agency. It was first identified in Peru.
- **Variant of Interest:** This means that the genetic changes involved are predicted or known to affect transmissibility, disease severity, or immune escape.

**COVID-19**  
**Comparing variants of concern**  
 Like all viruses, the SARS-CoV-2 coronavirus **has been evolving since it first emerged in late 2019**. The WHO has identified four variants of concern and four variants of interest:

*Variants of concern*  
 Earliest documented sample:

 <b>Alpha</b> United Kingdom September, 2020 Reported in: 173 countries	 <b>Beta</b> South Africa May, 2020 Reported in: 122 countries
 <b>Gamma</b> Brazil November, 2020 Reported in: 74 countries	 <b>Delta</b> India October, 2020 Reported in: 104 countries

*Variants of interest*  
 Earliest documented sample:

<b>Eta</b> Multiple countries December, 2020	<b>Iota</b> United States November, 2020	<b>Kappa</b> India October, 2020	<b>Lambda</b> Peru December, 2020
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Source: World Health Organization | Last updated July 6, 2021  
 ©AJLabs ALJAZEERA

**REGEN-COV2**

- An experimental **monoclonal antibody cocktail**, REGEN-COV2, has been found to be a life-saving treatment for some of the most severely affected Covid-19 patients.
- **Monoclonal antibodies** are artificially created antibodies that aim to aid the body's natural immune system. They target a specific antigen — a protein from the pathogen that induces immune response.
- Monoclonal antibodies can be created in the lab by exposing white blood cells to a particular antigen. **To increase the quantity of antibodies produced, a single white blood cell is cloned**, which in turn is used to create identical copies of the antibodies. In the case of Covid-19, scientists usually work with the spike protein of the SARS-CoV-2 virus, which facilitates the entry of the virus into the host cell.
- Monoclonal antibodies are now relatively common. They are used in treating Ebola, HIV, psoriasis etc.

### Gain Of Function

- The term ‘gain of function research’ has recently cropped up in the debate about the origins of the Covid-19 pandemic. Gain-of-function experiments may help researchers test scientific theories, develop new technologies and find treatments for infectious diseases
- Any organism can acquire a new ability or property, or “gain” a “function.” This can happen through natural selection or a researcher’s experiments. **‘Gain of function’** is a field of research focused on growing generations of microorganisms, under conditions that cause mutations in a virus.
- These experiments are termed ‘gain of function’ because they **involve manipulating pathogens in a way that they gain an advantage in or through a function**, such as increased transmissibility or lethality.
- Other example of Gain of function: Some lab examples include creating more **salt- and drought-resistant plants** or **modifying disease vectors** to produce mosquitoes that are resistant to transmitting dengue fever. **modifying *E. coli*** so that it can **convert plastic waste into a valuable commodity**.

Gain of function research may use **genetic engineering or serial passaging**.

**Genetic engineering involves ‘editing’ the genetic code** to modify the virus in a way predetermined by the scientists.

**Serial passaging involves allowing the pathogen to grow under different circumstances** and then observing the changes.

### Drug 2-Deoxy-D-Glucose (2-DG)

- It is an anti-Covid drug developed by the DRDO.
- The drug is approved for emergency use as an adjunct therapy to the standard of care in the treatment of coronavirus patients in hospital settings. It will reduce supplemental oxygen dependence during clinical trials.
- **The 2DG drug comes in powder form in the sachet, which is taken orally by dissolving it in water.** It accumulates in the virus-infected cells and prevents virus growth by stopping viral synthesis and energy production.

### Jivan Vayu

- It is nation’s first power-free CPAP device ‘Jivan Vayu’, developed by IIT Ropar.
  - Continuous positive airway pressure therapy (CPAP) uses a machine to help a person who has obstructive sleep apnea (OSA) breathe more easily during sleep.
- A CPAP machine increases air pressure in your throat so that your airway doesn’t collapse when you breathe in.

### UV-C Air Duct Disinfection System

- **Ultraviolet-C or UV-C Disinfection Technology** to be installed in Parliament for the “mitigation of **airborne transmission of SARS-COV-2’**
- The UV-C air duct disinfection system has been **developed by CSIR-CSIO** (Central Scientific Instruments Organisation). The system is designed to fit into any existing air-ducts and the virucidal dosages using UV-C intensity and residence time can be optimised according to the existing space. The virus is deactivated in any aerosol particles by the calibrated levels of UV-C light. It can be **used in auditoriums, malls, educational Institutions, AC buses, and in railways**.

- UV radiation is the portion of the Electromagnetic spectrum between X-rays and visible light. The most common form of UV radiation is sunlight, which produces three main types of UV rays: 1. UVA. 2. UVB. 3. UVC in decreasing order of wavelengths.
- UV radiations are normally used to kill microorganisms.
- Particularly, UV-C, also known as Ultraviolet germicidal irradiation (UVGI) is a disinfection method that uses short-wavelength ultraviolet light to kill or inactivate microorganisms by destroying their nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions and stops their replication.

### Bridging Trials and Indemnity Clause

- 'Bridging trials' are **localised clinical trials** which generate data related to the impact of foreign medicines/vaccines on the indigenous population before they are rolled out for the public. These trials are important in ascertaining the efficacy and potential side-effects related to the medicine/vaccine.
- India is expected to grant indemnity to foreign vaccine makers including Pfizer and Moderna which would make it easier for their Covid vaccines to come to India.
- Now, Serum Institute has become the latest pharma company to ask for indemnity from liability, stating that all vaccine manufacturers, whether Indian or foreign, should be protected against legal suits for any severe side effects.
- **Indemnity means security against a loss or other financial stress.** In legal terms, it means a contractual obligation of one party to compensate another party due to the acts of the former.
- The government, and not the vaccine maker, would be liable to compensate any citizen who claims to have side effects after taking the vaccine shot.

### A Plant-Based Chewing Gum That 'Traps' Coronavirus

- Recently, researchers have developed a chewing gum that can potentially reduce transmission of the SARS-CoV-2 coronavirus.
- According to the study, the SARS-CoV-2 spike protein binds with the **ACE2 protein receptors** on some human cells, facilitating its multiplication and spread.
- The researchers have developed the chewing gum containing copies of the ACE2 protein receptors with the hope that the virus particles would bind to them instead, leading to a lower viral load in the oral cavity.
- The chewing gum targets the virus in the saliva, and does so by trapping it with the ACE2 protein.
- The chewing gum is laced with a plant-grown protein, which serves as a "trap" for the virus.
- This reduces viral load in saliva and potentially tamps down transmission.

### Molnupiravir

The UK drug regulator approved the first oral antiviral for the treatment of Covid-19.

#### About Molnupiravir

- It is a prodrug of the synthetic nucleoside derivative **N4-hydroxycytidine**.
- Pro drug is a biologically inactive compound that can be metabolized in the body to produce a drug.
- It works by causing viruses to **make errors** when copying their own RNA, introducing mutations that inhibit replication.
- Molnupiravir was originally developed to treat influenza.
- It belongs to a class of **broad spectrum antiviral drugs called nucleoside analogues**.

- They act by interfering with the function of **viral RNA (Ribonucleic Acids) polymerases** – which are enzymes that make new viral RNA in infected cells.
- RNA is a polymer of ribonucleotides and an important biological macromolecule that is present in all biological cells.
- It is principally involved in the synthesis of proteins, carrying the messenger instructions from **Deoxyribonucleic acid (DNA)**, which itself contains the genetic instructions required for the development and maintenance of life.

### Ashwagandha For Recovery From COVID-19

- The Ministry of Ayush has collaborated with the U.K.'s London School of Hygiene and Tropical Medicine (LSHTM) to conduct a study on 'Ashwagandha' for promoting recovery from COVID-19.
- This is the first time the Ministry of Ayush has collaborated with a foreign institution to investigate its efficacy on COVID-19 patients.
- Ashwagandha commonly known as '**Indian winter cherry**' is a traditional Indian herb that boosts energy, reduces stress and makes the immune system stronger.
- It is classified as **an adaptogen**, which means that it can help the body to manage stress.

### Havana Syndrome

- Recently, two US officials have shown symptoms of a **mystery illness** that is linked to **Havana Syndrome**.
- According to a report of National Academies of Sciences (NAS), US found **directed microwave radiation** to be the **plausible cause** of the **Havana syndrome**.
- The symptoms of the syndrome include Nausea, Severe headaches, Fatigue, Dizziness, Sleep problems, Hearing loss.
- A few of those who had been affected more faced chronic issues like vestibular processing and cognitive problem

#### What is Havana syndrome?

The medical mystery named for the Cuban city where U.S. diplomats first experienced sudden, debilitating symptoms in 2016 has been reported by Americans serving in several other countries.

**Acute symptoms (often occurring suddenly) may include:**

Loud sounds (sometimes described as chirping, clicking or screeching) and pain in one or both ears; many felt the sensations came from a particular direction or were felt when in a specific location

Tinnitus, hearing loss

Intense pressure or vibration inside the head

Difficulty with memory or concentration

Visual disturbances

Nausea

Unsteady gait, loss of balance, vertigo/dizziness

**Chronic symptoms (can last weeks, months or longer) may include:**

Headache

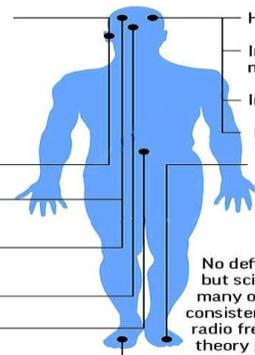
Impaired concentration, memory loss

Insomnia

Depression

Impaired balance

No definitive cause has been found, but scientific studies have noted many of the acute symptoms are consistent with exposure to directed radio frequency (RF) energy. One theory posits the use of RF energy by a U.S. adversary as a weapon or a tool of espionage.



### Zika Virus

Union Health Ministry has rushed a multidisciplinary team to Maharashtra to monitor the Zika virus situation.

- It is a **mosquito-borne flavivirus** that was first identified in Uganda in 1947 in monkeys.
- It is caused by a virus transmitted primarily **by Aedes mosquitoes (AM)**, mainly Aedes aegypti and the same mosquito that transmits dengue, Chikungunya and yellow fever.
- It is also transmitted from mother to fetus during pregnancy, through sexual contact, transfusion of blood and blood products, and organ transplantation
- Its infection during pregnancy can cause infants to be born with **Microcephaly** (smaller than normal head size) and other congenital malformations, known as congenital Zika syndrome.
- There is **no vaccine or medicine for Zika**.

## BRCA Gene

- BRCA (Breast Cancer) genes are **proteins** associated with **breast tissues** that play a big role in preventing breast cancer.
- They help repair damaged DNA or destroy cells if the damaged DNA cannot be repaired. Because of this, the BRCA genes are known as **tumor suppressor or caretaker genes**.
- When this gene got altered or broken, it doesn't function correctly & lose the ability to repair DNA. This is called **BRCA gene mutation**.

### Risks Associated with BRCA Mutations

- BRCA mutations are primarily associated with breast and ovarian cancer. However, in some cases, they are also linked with other cancers, especially in the abdominal and thoracic cavities.
- Current research suggested that **inherited BRCA gene mutations** account for **3%** of breast cancers and 10% of ovarian cancer each year.
- Women who have strong **matrilineal family history of breast/ovarian cancers** should get tested for BRCA mutations after consulting their gynecologists.

## Xenotransplantation

New York surgeons have successfully transplanted a kidney from a genetically engineered pig into a brain-dead human by using Xenotransplantation process.

### About Xenotransplantation Process

- Xenotransplantation or heterologous transplant is a procedure that involves the transplantation, implantation, or infusion into a human host of either:

Live nonhuman animal cells, tissues, or organs

Human body fluids, cells, tissues, or organs that have had ex vivo contact with **live nonhuman** animal cells, tissues, or organs.

- Ex vivo contact refers to a medical procedure in which an organ, cells, or tissue are taken from a living body for a treatment or procedure, and then returned to the living body.
- Such cells, tissues or organs are called xenografts or xenotransplants.

### Significance

- Provide an alternative and additional supply of organs for people facing life-threatening diseases.
- **Concerns:** Animals, such as Pigs, have a shorter lifespan than humans, meaning that their tissues age at a quicker rate and due to this man may die prematurely.
- Disease transmission and permanent alteration to the genetic code of animals also cause for concern.
- Animal rights activists have also objected to xenotransplantation on ethical grounds.

### Why Pigs Are Used In This Process?

- Pigs have advantages over monkeys and apes. They are produced for food, so using them for organs raises fewer ethical concerns.
- Pigs have large litters, short gestation periods, and organs comparable to humans.
- Pig **heart valves** also have been used successfully for decades in humans.
- **Blood thinner heparin** is derived from pig intestines.

- Pig **skin grafts** are used on burns and Chinese surgeons have used pig **corneas** to restore sight.

### Gene Editing

- The proposal for Indian regulators to consider a new gene editing technique has been pending with **the Genetic Engineering Appraisal Committee (GEAC)** for almost two years.
- New technique uses gene editing tools such as **CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)**
- Genetic Modification is a technology that involves inserting DNA into the genome of an organism. The seeds produced by these plants will have new DNA.
- **Indian Agricultural Research Institute (IARI)** has now moved to newer technologies such as Site Directed Nuclease (**SDN 1 and 2**).
- It uses different **DNA-cutting enzymes (nucleases)** that are directed to cut the DNA at a predetermined location by a range of different DNA binding systems. After the cut is made, the cell's own DNA repair mechanism recognizes the break and repairs the damage
- Research coalition under **the Indian Council of Agricultural Research (ICAR)**, which includes the IARI, is using these techniques to develop rice varieties which are drought-tolerant, salinity-tolerant and high-yielding.
- It will tweak **plants own gene (without bringing any gene from outside)**. They could potentially be ready for commercial cultivation within three years.
- U.S, Canada, Australia and Japan have already approved the SDN 1 and 2 technologies.

### NoroVirus

Recently, an acute diarrhoeal disease outbreak reported was confirmed as Norovirus (NoV).

#### What is Norovirus

- Norovirus is an animal-borne disease. NoV is an important cause of gastroenteritis in children as well as adults worldwide.
- According to the study, NoV was found to be the second most predominant virus after rotavirus.
- There is no specific treatment. Rest and rehydration with warm fluids should be enough.
- **Spread:** Transmission occurs predominantly by the faecal oral route, directly or indirectly, through the ingestion of contaminated water or food, or surfaces.

#### What Makes NoV Infections A Public Health Concern

- NoV is a highly contagious virus and transmission occurs at a rapid pace because of heavy **viral shedding** by the infected person.
- Even the lowest infectious dose is enough to set off extensive outbreaks.
- Experts also point out that NoV could increasingly become a public health concern because of the rapid expansion of the food industry.

### Pollen Calendar

Researchers from the Post Graduate Institute of Medical Education and Research (PGIMER) and Punjab University have **created a pollen calendar for Chandigarh to track airborne pollen to prevent allergy**.

**What is A Pollen Calendar**

Pollen calendars represent the **time dynamics** of airborne pollen present in a particular geographical area i.e. they are location-specific

**Why Is It Important To Study Pollen**

Pollen grains are **male biological structures** with the primary role of fertilization, but when inhaled by humans, they may strain the respiratory system and cause allergies

**How Will A Pollen Calendar Benefit People**

Pollen calendar provides a clear understanding for clinicians, as well as people with **allergies** to identify potential allergy triggers & help to limit their exposure during high pollen load season.

- Europe, UK, and the US are using regional pollen calendars to prevent and diagnose allergic rhinitis/hay fever and predict the timing and severity of the pollen season.

**MACS 1407: A Pest Resistant, High-Yielding Soybean Variety**

- MACS 1407, a newly developed variety, is suitable for cultivation in West Bengal, Jharkhand, Assam, Chhattisgarh, and the North-Eastern states, and its seeds will be available to farmers for sowing during the 2022 **Kharif season**.
- Variety is also resistant to major insect-pests like girdle beetle, leaf miner, leaf roller, stem fly, aphids, white fly and defoliators.
- Its thick stem, higher pod insertion (7 cm) from ground, and resistance to pod shattering make it suitable even for mechanical harvesting.

<p><b><u>Kharif Crops</u></b></p> <p>These crops are sown at the beginning of monsoon. Kharif crops depend upon two factors- timing and quantity of rainwater.</p> <p>eg: Rice, maize, sorghum, pearl millet/bajra, finger millet/ragi, arhar, soybean, groundnut, cotton,sesamum</p>	<p><b><u>Rabi Crops</u></b></p> <p>These crops are sown at the beginning of winter. Irrigation is the main factor upon which their proper growth depends as cultivation of Rabi crops occurs in the dry season.</p> <p>eg:wheat, barley, oats, chickpea/gram, linseed, mustard,oilseeds</p>
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**Sales Of Illegal Herbicide-Tolerant (Htbt) Cotton On The Rise**

- Legally, sale, storage, transportation and usage of unapproved GM seeds is a punishable offence under the **Rules of Environmental Protection Act 1989**. Also, sale of unapproved seeds can attract action under the **Seed Act of 1966 and the Cotton Act of 1957**.
- The Environmental Protection Act provides for a jail term of five years and a fine of Rs 1 lakh for violation of its provisions, and cases can be filed under the other two Acts.
- **Herbicide tolerant (HtBt) involves the addition of another gene, ‘Cp4-Epsps’ from another soil bacterium, Agrobacterium tumefaciens.**

**Bt cotton** remains the only GM crop allowed to be cultivated in the country. Developed by US giant Bayer-Monsanto, it involves insertion of two genes viz **‘Cry1Ab’ and ‘Cry2Bc’** from the soil bacterium *Bacillus thuringiensis* into cotton seeds. This modification codes the plant to produce protein toxic to *Heliothis bollworm* (pink bollworm) thus making it resistant to their attack.

**India's First Herbicide-Tolerant & Non-Gm Rice Varieties**

- Indian Agricultural Research Institute (IARI) has developed the country's **first-ever non-GM (genetically modified) herbicide-tolerant rice varieties**
- **Pusa Basmati 1979** and **Pusa Basmati 1985** are the two varieties that contain a mutated **Acetolactate synthase (ALS) gene** making it possible for farmers to spray Imazethapyr, a broad-spectrum herbicide, to control weeds.
- ALS gene and resultant enzyme don't bind with herbicides such as Imazethapyr when sprayed on the crop thus continuing the growth of the plant while killing only weeds
- The new herbicide-tolerant varieties have been **developed through mutation breeding and not by genetic modification** to ensure no foreign gene in the new varieties.
- In conventional rice growing, herbicides are not directly applied as they can't distinguish between the rice plant and weeds. Therefore, paddy seeds are first raised as young plants in nurseries before being planted in the fields.
- Standing water in the nursery acts as a natural herbicide eliminating weeds.
- **Significance:** These varieties don't require nurseries and hence save on labor and water input in rice cultivation.

**Sandalwood**

- Recently as a part of 'Azaadi ka Amrit Mahotsav' initiative, a training program for the basics & benefits of Indian sandalwood, nursery techniques & managing the health of the plant was held.
- Sandalwood is a dry deciduous forest species native to **Asia pacific region**.
- This small tropical tree grows to 20m high in well-drained soil, the ideal temperature required is between 12° to 35 °C and annual rainfall between 500 millimetres and 3,000 millimetres.
- It is recognized as a "vulnerable" species by the IUCN.

**Uses of Sandalwood**

- It is mostly harvested for its timber.
- The heartwood and roots also contain 'sandal oil', which is valued for use in perfumes, incense, cosmetics and medicines. The bark contains tannin, which is used for dye.
- In India, Sandalwood is being used from cradle to cremation.

**Sandalwood Spike Disease (SSD)**

- SSD is an infectious disease which is caused by bacterial parasites, phytoplasma.
- It is transmitted by insect vectors and involved in plant-to-plant transmission.
- Currently there is no cure for the infection. The infected tree will have to be cut down.
- About 1% to 5% of sandalwood trees lost every year due to the disease.

**Plastic-Eating Algae**

- In earlier studies, **species of bacteria** that degrade plastic have been studied. In the present study, this role is played by the **microalga *Uronema africanum* Borge**.
- This is a species of microalgae that is commonly found in Africa, Asia, and Europe.
- The microalgae produce different kinds of extra cellular polysaccharides, enzymes, toxins such as cyanotoxins, hormones that react with the **polymer sheets** (polymer bonds) and break them up into simpler monomers which will not have harmful effects in the atmosphere.

- **Significance:** According to the Central Pollution Control Board's annual report for the year 2011-12, the plastic waste generated in a year amounted to 5.6 million metric tonnes. Only 60% of the plastic used in India was collected and recycled.
- The usual means of disposal of plastic waste involves **incineration, landfilling, and recycling**.
- These methods have limitations and also sometimes produce side effects that are hazardous to the environment. Hence, researchers are on the lookout for biodegradation methods that are safe and environment-friendly.

### Laser Communications Relay Demonstration (LCRD)

Recently, NASA launched its new Laser Communications Relay Demonstration (LCRD).

- It is the NASA's **first-ever laser communications system**.
- The LCRD payload is hosted onboard the US Department of Defense's Space Test Program Satellite 6 (STPSat-6).
- It will be in a geosynchronous orbit, over 35,000km above Earth.
- The LCRD has **two optical terminals**: one for receiving data from user spacecraft, and the other for transmitting data to ground stations.
- The modem will translate the digital data into a laser signal. It will then be transmitted through an encoded beam of light. These capabilities make the LCRD NASA's first two-way, end-to-end optical relay.

### Helina Completes All Trials

- It is helicopter launched Nag Antitank Guided Missile (AGTM) developed indigenously by DRDO
- Helina is a 3rd generation **fire and forget** class ATGM mounted on an indigenous Advanced Light Helicopter (ALH)
- It has a minimum range of 500 m and a maximum range of 7 km.
- It is an all-weather day and night capability with Infrared Imaging Seeker (IIR)
- A variant of the HELINA Weapon System called DHRUVASTRA is being inducted into the Indian Air Force (IAF). It would have an Air to Ground role other than an anti-tank role.

### About Nag Missile

- Nag is a third-generation, fire-and-forget, anti-tank guided missile developed by DRDO to support both mechanized infantry and airborne forces of the Indian Army.
- It is an all-weather condition with day and night capabilities and with a minimum range of 500m and a **maximum range of 4 km**.
- Nag can be **launched from land and air-based platforms**. The land version is currently available for integration on the Nag missile carrier (NAMICA).
- DRDO has developed nag Missiles under the Integrated Guided Missile Development Program.

### Integrated Guided Missile Development Programme (IGMDP)

- It was launched in **1982-83** by the Indian Government. It was conceived by Dr. A.P.J. Abdul Kalam to enable India attain self-sufficiency in the field of missile technology.
- The programme was managed by the DRDO and Ordnance Factory Board in partnership with other Indian government political organisations.
- The five missiles (P-A-T-N-A) developed under this program are:

- **Prithvi:** Short-range surface to surface ballistic missile.
- **Agni:** Ballistic missiles with different ranges, i.e., Agni (I, II, III, IV, V).
- **Trishul:** Short-range low-level surface to air missile.
- **Nag:** 3rd generation anti-tank missile.
- **Akash:** Medium range surface to air missile.

### AGNI-5

India successfully test-fires Agni-5, from the APJ Abdul Kalam Island off the Odisha coast.

#### About Agni-5

- It is the most advanced **intercontinental surface-to-surface nuclear** capable ballistic missile, **indigenously** developed by DRDO.
- The missile uses a **three-stage solid-fuelled** engine and has a range of over 5,000 km and can carry about a 1500-kg warhead.
- It is a **fire and forget** missile, which once fired cannot be stopped, except by an interceptor missile.
- It has been developed under Integrated Guided Missile Development Programme (IGMDP).

### India Successfully Test-Fired Agni-P (Agni Prime)

- The Agni P, initially named Agni-1P, is said to weigh 50 per cent less than Agni 3 and is the lightest and smallest of the Agni series because of technological advancements.
- Agni-P is a two-stage solid propellant missile with dual redundant navigation and guidance system.
- It has improved parameters, including manoeuvring and accuracy.
- The surface-to-surface ballistic missile has a range of 1,000 to 2,000 km.
- Adding to the usefulness of the missile is that it is a canisterised system. This means that the movement and launch options increase for the **Strategic Forces Command**, which oversees India's nuclear arsenal.

### Vertical Launch Short Range Surface to Air Missile (VL-SRSAM)

DRDO tested the "vertical launch-short range surface-to-air missile" designed for deployment onboard Indian Naval warships, successfully.

- It is a quick reaction missile indigenously developed by DRDO for neutralising various aerial threats at medium and close ranges, including sea-skimming targets, which are assets that fly as close as possible to sea surface to avoid being detected by the radar's onboard warships.
- With lock on before launch (LOBL) and lock on after launch (LOAL) capability, the missile receives mid-course update via datalink.
- It intended to replace older **Barak 1** (surface to air missile system) onboard Indian Navy warships.
- It is based on **Astra Mark 1** (air-to-air missile) and the new system can engage targets at around 15 km.

### Stand-Off Anti-Tank (SANT) Missile

DRDO and Indian Air Force tested the Stand-off Anti-tank (SANT) missile from Pokhran ranges.

- It is indigenously designed and developed air-to-surface missile.

- It is a **fourth generation** upgraded variant of HELINA missile developed for long distance airborne anti-armour role. HELINA (Helicopter-launched Nag) is air-launched version of Nag with extended range.
- The missile has been designed and developed by Research Centre Imarat (RCI), Hyderabad in coordination with other DRDO labs and participation from industries.
- It is equipped with a state-of-the-art millimeter wave seeker, which provides high precision strike capability from a safe distance.
- The weapon can neutralise targets in a range up to 10 kms.
- The missile has both **lock-on before launch** and **lock-on after launch** capability.

### MPATGM: Man-Portable Anti-Tank Guided Missile

- MPATGM is third-generation anti-tank guided missile (ATGM) indigenously developed by DRDO. It has strike range of 2.5 km.
- It is capable of being fired from shoulder and can be used during day and night. It has minimum lateral centre and gravity offset.
- It works on **fire and forget principle** and is known for its top attack capabilities.

### Arjun Main Battle Tank (MBT) MK-1A

- Arjun MBT Project was initiated by DRDO in 1972.
- The MBT Mk-1A is a new variant of Arjun Tank designed to enhance firepower, mobility, and survivability, infused with 72 new features and more indigenous content from the Mk-1 variant.
- This would ensure effortless mobility in all terrains, besides precise target engagement during day and night.
- The tank has been designed and developed by Combat Vehicles Research and Development Establishment (CVRDE) along with DRDO.
- Arjun MBT is equipped with 120mm main rifled gun with Fin Stabilised Armour-Piercing Discarding Sabot (FSAPDS) ammunition which is capable of destroying all known tank armour up to direct shooting range
- It also has a computer-controlled integrated fire control system with stabilised sighting that works in all lighting conditions.

### Mk1A and MkII

- The development of Arjun Mk1 was followed by improved variants - Mk1A and MkII.
- Arjun MkII variant is a light-weight Futuristic Main Battle Tank (FMBT) with electro-optical sensors and high power lasers.

### Pinaka Extended Range System

A series of successful test-firing of the Extended Range Pinaka rocket system (Pinaka-ER) has been carried out at various test ranges.

### About Pinaka- ER

- Pinaka-ER, which is an upgraded version of the Pinaka Mk-1.
- The enhanced range version of the weapon can destroy targets at a distance beyond **45 km**.
- The system is jointly designed by laboratories of DRDO – Armament Research & Development Establishment (ARDE), Pune and High Energy Materials Research Laboratory (HEMRL), Pune.

**About Pinaka**

- The Pinaka, a **Multi-Barrel Rocket-Launcher (MBRL)** system, can fire a salvo of **12 rockets** over a period of **44 seconds**.
- The development of Pinaka was started by the DRDO in late 1980s, as an alternative to the multi barrel rocket launching systems of Russian make called 'Grad', which are still in use.
- It was first used in the battlefield during the Kargil war of 1999 quite successfully.
- Pinaka Mk-1 has a range of 37.5 km and the Pinaka Mk-II has a range of 60 km.
- Guided version of the Pinaka has also been developed and tested multiple times and has a range of 75 km.
- An extended range version of the Pinaka Mk-II and Pinaka Mk-III are also said to be under development.

**Pralay Missile**

India successfully conducted the flight test of indigenously developed Pralay missile.

- Pralay is India's first conventional **quasi-ballistic** short-range **surface-to-surface** missile, developed by DRDO.
- A quasi-ballistic missile has a low trajectory, and while it is largely ballistic.
- It has the ability to change its path after covering a certain range mid-air.
- With a range of 150 to 500 km, Pralay is powered with solid propellant rocket motor and it has a payload capacity of 500-1,000 kg. It can be launched from a mobile launcher.

**LCA- TEJAS MK2**

- It is a single-bigger engine multirole aircraft designed by Aeronautical Development Agency (ADA) in collaboration with Hindustan Aeronautics Limited (HAL).
- It is a replacement for the Mirage 2000 class of aircraft.
- Payload of 6,500 kg compared to the 3,500 kg by LCA.
- 4.5 generation aircraft.
- It will be rolled out in 2022 and the first flight in early 2023.
- ADA is an autonomous body of the Ministry of Defence

**Variants of Tejas**

**Tejas Trainer:** 2-seater operational conversion trainer for training air force pilots.

**LCA Navy:** Twin- and single-seat carrier-capable for the Indian Navy.

**LCA Tejas Navy MK2:** This is phase 2 of the LCA Navy variant.

**LCA Tejas Mk-1A:** This is an improvement over the CA Tejas Mk1 with a higher thrust engine (Air Force)

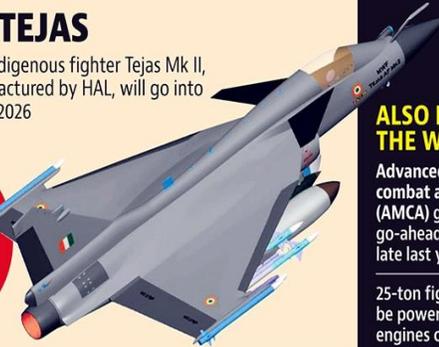
**LCA Tejas Mk-2:** Following the Mk-1A is the Mk-2 which will provide a high degree of Manoeuvrability.

### THE NEW TEJAS

The long-awaited indigenous fighter Tejas Mk II, which will be manufactured by HAL, will go into production by 2025-2026

17.5 ton

Tejas Mark II will be the same weight as the Mirage, Jaguar and Grippen



**ADDITIONS THE NEW GEN**

- Heavier stand-off weapon capacity
- State-of-the-art AESA radar
- Indigenously developed air-to-air missile Astra (with a range of 70km)

**WHEN:** Set to go into production after the Tejas LCA order of 123 aircraft to replace the IAF's ageing MiG-21s is completed

ALSO IN THE WORKS

Advanced medium combat aircraft (AMCA) given a go-ahead by IAF late last year

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25-ton fighter will be powered by two engines capable of super-cruise speeds

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Will have advanced tech to ensure minimum radar signatures

**Advanced Medium Combat Aircraft (AMCA)**

- It is a **fifth-generation** indigenous fighter aircraft designed by Aeronautical Development Agency (ADA).
- Payload capacity of 1,500 kg internally and a 5,500-kg external payload
- Aircraft will have stealth and non-stealth configurations
- Designed for stealth and unlike the LCA, which is designed for maneuverability.
- It has a unique shape to achieve a low radar cross-section and has an internal carriage of weapons.
- When the external weapons are removed, this aircraft has enough fuel and weapons inside to do a very capable operational role in stealth mode.
- It will be developed in two phases, AMCA Mk1 and AMCA Mk2
- While AMCA Mk-1 will have an imported engine, the same as LCA Mk-2, the AMCA Mk-2 will have an indigenous engine.
- It will be rolled out in 2024 and the first flight in 2025.

**SMART System**

India successfully tested a long-range **Supersonic Missile Assisted Torpedo (SMART)** system.

- SMART is a next-generation missile-based standoff torpedo delivery system developed by the DRDO for the Indian Navy.
- The system has been designed to enhance anti-submarine warfare (ASW) capability far beyond the conventional range of the torpedo.
- It is also a **canister-based missile system** consisting of advanced two-stage solid propulsion, electromechanical actuators and precision inertial navigation.
- It covers most of its flight in the air at **lower altitudes** with **two-way data link** from the warship or an **airborne submarine target detection system** and provides the exact location of the hostile submarine to correct its flight path midway.
- Just when it approaches close enough to the submerged submarine, missile will eject the torpedo system into the water and the autonomous torpedo will start moving towards its target

**World's First Artificial Intelligence (AI) Ship Named 'Mayflower 400'**

- Mayflower 400 is an **unmanned and completely autonomous ship**. It is powered by **Artificial Intelligence and the Sun's energy** via solar panels, built by marine research organization **ProMare in collaboration with IBM**.
- Main aim of this ship is to **study marine pollution** and analyze plastics in the water. It will also track the aquatic animals. The ship is ready to sail on a transatlantic voyage.
- The ship has been taught how to avoid collisions. Thus, the ship can correct its course itself. It is capable of self-activating a **hydrophone that can listen to whales**.

**Tushil**

- Tushil is a "stealth frigate". Frigate means a warship with mixed armament (weapons). It is heavier than a destroyer. Tushil in Sanskrit means Protector shield. It was built by Russia.
- The ship was constructed on the basis of specific requirements by Indian Navy to meet the entire spectrum of naval warfare across all the three dimensions of surface, sub-surface and air.

- These ships are the example of potent combination of state-of-art Indian and Russian weapons and sensors.
- They are equipped to operate as a single unit as well as consort of naval task force in Littoral and Blue waters.
- They feature stealth technology with respect to low radar and underwater noise signatures.
- Ships are also being equipped with major Indian-supplied equipment like surface-to-surface missiles, surface surveillance radar, sonar system, communication suite and anti-submarine warfare system.

### Sagarnidhi

The Union Minister of Earth Sciences visited the Indian Subcontinent's Pioneer Ocean Research Vessel (ORV) Ship SagarNidhi.

- Earlier, the **Ministry of Earth Sciences (MoES)** has launched India's first manned ocean mission "**Samudrayaan**" in Chennai.
  - It was commissioned in 2008 for the **country's marine research programme**. It is the third research vessel after **Sagar Purvi** and **SagarPaschimi**.
  - The vessel is capable of carrying out **geo-scientific, meteorological and oceanographic research**, and is designed with blue-water capability with ranges of up to 10,000 nautical miles (19,000 km) for voyages lasting up to 45 days.
  - A **blue-water capability** refers to an oceangoing fleet able to operate on the high seas far from its nation's home ports.
- MoES has, at present 6 ships, **Sagar Nidhi, Sagar Manjusha, Sagar Kanya, Sagar Sampada, Sagar Tara & Sagar Anveshika**, which are used for many ocean studies and applications including ocean observations.
- Research Vessels (Ships) are required for exploration and harnessing ocean resources for the **Blue Economy** and participation in search and rescue operations, more specifically for the implementation of the **Deep Ocean Mission**.
- It is used for launching **tsunami monitoring systems** and remotely operable vehicles, for identifying **mines** and **gas hydrates**
- It will also be used for conducting **oceanic studies on the fuel** of the future gas hydrates and search for scientific evidence about **origin of life and cures for chronic diseases** (Diseases that last one year or more).

### OPV Sarthak

Indian Coast Guard's (ICG) new offshore patrol vessel (OPV) Sarthak was commissioned into service in Goa.

#### About OPV SARTHAK

- It is **fourth in a series of five OPVs** built under 'Make in India' policy.
- It functions as a command platform and undertake mandated ICG charter of duties including search and rescue, combating maritime crimes and preserving and protecting the marine environment.
- The ship is also capable of carrying limited pollution response equipment to undertake oil spill pollution response at sea.

#### Indigenous Off-Shore Patrol Vessel Project

- The Project was launched in 2016. Under this project, five Indian Coast Guard Ships are to be launched. These OPVs are to be deployed in protecting the Exclusive Economic Zone of the territorial waters.
- Three Offshore Patrol Vessels that have already been commissioned namely Indian Coast Guard Ship (ICGS) **SACHET** and ICGS **Sujeet** and the third in the series called ICGS **SAJAG** was commissioned in May 2021.
- In August 2020, ICGS **SARTHAK** was launched. It was fourth in the series and commissioned in October 2021.

- The 5th and the last Vessel, launched on 14th Dec 2020 at Goa Shipyard Limited. The vessel was named ICGS 'SAKSHAM'.
- **Offshore Patrol Vessels (OPVs)** are long-range surface ships, capable of operation in maritime zones of India, including island territories with helicopter operation capabilities. Their roles include coastal and offshore patrolling, policing maritime zones of India, control and surveillance, anti-smuggling and anti-piracy operations with limited wartime roles.

## Abhyas

Recently DRDO successfully flight-tested Abhyas - **High-speed Expendable Aerial Target (HEAT)** from the Integrated Test Range, Chandipur off the coast of Bay of Bengal in Odisha.

### About Abhyas-HEAT

- It is a drone (UAV) that will be used as a target for various missile systems.
- It is designed & developed by DRDO's Aeronautical Development Establishment (ADE), Bengaluru.
- It is powered by a **gas turbine engine** to sustain a long endurance flight at subsonic speed.
- The target aircraft is equipped with **Micro-electromechanical systems (MEMS)** based **Inertial Navigation System (INS)** for navigation along with the Flight Control Computer (FCC) for guidance and control.
- The vehicle is programmed for fully autonomous flight.
- It can also function as a decoy.

## SMART ANTI-AIRFIELD WEAPON (SAAW)

DRDO and Indian Air Force (IAF) have carried out successful flight tests of Smart Anti-Airfield Weapon (SAAW).

### About SAAW

- SAAW project was approved by the Government of India in 2013. The first successful test of the weapon was conducted in May 2016.
- It is indigenously developed by DRDO.
- It is a long-range **lightweight** high precision-**guided anti-airfield weapon**.
- It is designed to destroy especially enemy runways, bunkers, aircraft hangers, radars, and other reinforced structures at a maximum range of 100 kilometers.
- Two different configurations have been successfully tested which are based on: **Satellite navigation and Electro-optical sensors**
- The electro-optic sensor has been developed indigenously. Electro-optical configuration of the system is equipped with Imaging Infra-Red (IIR) Seeker technology enhancing the precision strike capability of the weapon.

## INS Vela

- The fourth **Scorpene Submarine 'INS Vela'** of **Project P-75** has been delivered to the **Indian Navy**.
- **Scorpene Class Submarine:** The submarines in the **Project-75 Scorpene Class** are powered by **diesel-electric propulsion systems**.
- Scorpene is one of the most sophisticated submarines, **capable of undertaking multifarious missions** including anti-surface ship warfare, anti-submarine warfare, intelligence gathering, mine laying, and area surveillance.

- The Scorpene class is the **Navy's first modern conventional submarine series** in almost two decades since **INS Sindhusashtra**, procured from Russia in July 2000.

### Project 75

- It is a programme by the Indian Navy that **entails building six Scorpene Class attack submarines**.
- The design of the **Kalvari class of submarines** is based on the French Scorpene class of submarines.
- It is given support by the **Department of Defence Production (Ministry of Defence)** and **Indian Navy** throughout its various phases of construction.
- The **Mazagon Dock limited (MDL)** is manufacturing six Scorpene submarines with **technology assistance from Naval Group of France** under a **USD 3.75 bn deal signed in October 2005**.
- MDL is a defence public sector undertaking shipyard under the Ministry of Defence.

**INS Kalvar** • launched in October 2015 and was commissioned in December 2017.

**INS Khanderi** • launched in January 2017 for trials & commissioned in September 2019.

**INS Karanj** • launched in January 2018 and commissioned in 2021

**INS VELA** • LAUNCHED IN MAY 2019 AND INDUCTED RECENTLY.

**INS Vagir** • launched in November 2020

**INS Vagsheer** • It is in the advanced stage of outfitting

### PROJECT-15B

The **first ship of the four Project-15B state-of-the-art stealth guided missile destroyers** i.e. **'Y 12704 (Visakhapatnam)'**, was delivered to the Navy. The ship is constructed using **indigenous steel DMR 249A** and is **amongst the largest destroyers constructed** in India.

- **India's Destroyer Construction Programme:**
  - India's indigenous Destroyer construction programme **commenced in the late 1990s with the three Delhi class (P-15 class) warships** and this was **followed by three Kolkata class (P-15A) destroyers** commissioned a decade later.
  - Presently, under the **P-15B (Visakhapatnam Class)**, a total of four warships are planned (Visakhapatnam, Mormugao, Imphal, Surat).
  - The Destroyers **come next only to an Aircraft Carrier (INS Vikramaditya)** in terms of their reach and endurance.

### Project-15B

- **Four Guided missile Destroyers of Project 15B (P 15B)** are under construction at M/s Mazagaon Dock Shipbuilders Limited, Mumbai. The contract for construction of these four ships was signed in 2011.
- These ships are **amongst the most technologically advanced Guided Missile Destroyers** of the world, with **state-of-the-art weapon/sensor package**, advanced stealth features and a high degree of automation.

### Lithium Triangle

- Various **provinces of Argentina are building mining logistics** nodes and access roads, lowering tax rates, and rationalizing rules for the sector **to attract investment in Lithium metal**.
- Rising global lithium demand and surging prices have drawn increased interest in the so-called **'lithium triangle'** that spans parts of **Argentina, Bolivia, and Chile**.

- Lithium has become the new '**white gold**' as the demand for high-performing **rechargeable batteries** is rising.

### Properties of Lithium

- It is a chemical element with the symbol Li.
- It is a **soft, silvery-white metal**.
- Under standard conditions, it is the **lightest metal and the lightest solid element**.
- It is **highly reactive and flammable**, and must be stored in mineral oil.
- It is an **alkali metal** and a **rare metal**. The **alkali metals** consist of the chemical elements lithium, sodium, potassium, rubidium, caesium, and francium.
- **Rare Metals (RM)** include Niobium (Nb), Tantalum (Ta), Lithium (Li), Beryllium (Be), Cesium (Cs) etc. and **Rare Earths (RE)** include Lanthanum (La) to Lutetium (Lu) besides Scandium (Sc) and Yttrium (Y).
- These metals are **strategic in nature with wide application in the nuclear and other high tech industries** such as electronics, telecommunication, information technology, space, defense etc.



### Uses

- Lithium metal is used to make **useful alloys**.
- For example, **with lead to make 'white metal' bearings** for motor engines, **with aluminium to make aircraft parts**, and **with magnesium to make armour plates**.
- In Thermonuclear reactions.
- To make electrochemical cells. Lithium is an important component in **Electric Vehicles, Laptops** etc.

**Countries with Largest Reserves:** Chile > Australia > Argentina

### Lithium in India

- Researchers at the Atomic Minerals Directorate (under India's Atomic Energy Commission) have estimated lithium reserves of **14,100 tonnes in a small patch of land surveyed in Southern Karnataka's Mandya district** recently. Also to be **India's first-ever Lithium deposit site found**.
- **Other Potential Sites in India:** The major **mica belts in Rajasthan, Bihar, and Andhra Pradesh**.
- **Pegmatite** (igneous rocks) **belts in Odisha and Chhattisgarh**.
- Brines of **Sambhar and Pachpadra** in Rajasthan, and **Rann of Kachchh** in Gujarat.
- **Related Government Initiative:** India, through a new state-owned company **Khanij Bidesh India Ltd**, had signed an agreement with an Argentinian firm to **jointly prospect lithium in Argentina**.
- Khanij Bidesh India Ltd has a **specific mandate to acquire strategic mineral assets such as lithium and cobalt** abroad.

### Astro Robot

- **Amazon** has unveiled its '**Astro**' home robot, which is designed to help customers with a range of tasks like home monitoring and keeping in touch with family.

- Astro is primed to be a **home security device**. It is **designed to move around the home** and keep a check on pets, and detect something unusual in the absence of the owner.
- It comes with a “**periscope**” camera that pops up from its head.
- It is basically a combination of the **Echo Show (smart speaker)** and **sophisticated Ring security camera** integrated into one single device.
- The device captures live videos, plays music or videos, and delivers a beer across the home.
- It can **recognise the faces of people and analyse them** until it figures out if it's a family member or an outsider.

### Xenobots

According to a recent study, Xenobots has become world's first living robots which can reproduce.

- Xenobots are made up of a collection of **frog egg cells** instead of metals or plastics that can function as one tiny unit. The reason scientists classify them as robots is that they are designed and engineered to behave in very specific ways.
- They are engineered inside of a petri dish and can be programmed to move.
- The xenobot, which is a **millimeter wide**, has been described as a "**reconfigurable creature**".
- The xenobots were first designed in 2020 on a supercomputer at the University of Vermont and then assembled and tested by biologists at Tufts University in Massachusetts.

### Ammonium Nitrate Rules Amended

Government has amended rules for **storage** and **handling** of ammonium nitrate to improve public safety. These come in response of explosion in **Beirut, Lebanon**, in August last year that led to the deaths of over 200 people. Nearly 3,000 tons was stored at Beirut's port for **six years**.

#### Ammonium Nitrate

- It is an ingredient of **fertilizers, anesthetic gases**, cold packs, **commercial explosives** (used in mining and construction)
- Main component of explosive composition known as Ammonium Nitrate Fuel Oil (**ANFO**).
- Many Improvised Explosive Devices (IEDs) used by terrorists have **ANFO** as the main explosive.
- In India, the manufacture, conversion, bagging, import, export, transport, possession for sale or use of ammonium nitrate is covered under **The Ammonium Nitrate Rules, 2012**.

#### New Rules

- It requires that ammonium nitrate received at ports be transferred to storage houses 500 meters beyond the port area.
- **Auction of seized lots** to ensure safe and speedy disposal besides requiring that Ammonium Nitrate be imported in bagged form only.
- Adequate **firefighting facilities**, improvement of **flooring in storage and handling areas** to enhance safety.
- To promote **ease of doing business**, the transfer of ammonium nitrate from one location to another of the **same licensee** has been permitted now.
- **Time for disposal** of the application for seeking '**No Objection Certificate**' from District Authority or Director General of Mine Safety has been reduced from **6 months to 3 months**.

**India Set To Launch Deep Ocean (Sea) Mission**

- The focus of the mission will be on deep-sea mining, ocean climate change advisory services, underwater vehicles and underwater robotics related technologies.
- The mission is expected to cost ₹4,077 crore over the **next five years**.
- **Ministry of Earth Sciences (MoES)** will be the nodal Ministry implementing this multi-institutional mission.
- A **manned submersible** will be developed to carry three people to a depth of 6,000 metres in the ocean with a suite of scientific sensors and tools.
- An **Integrated Mining System** will be developed for mining polymetallic nodules (PMN) at those depths in the central Indian Ocean.
- Development of a component for searching **deep sea flora and fauna**, including microbes, and studying ways to sustainably utilise them.
- The next component is to explore and identify potential sources of **hydrothermal minerals** that are sources of precious metals formed from the earth’s crust along the Indian Ocean mid-oceanic ridges.
- It has a component for studying and preparing detailed engineering design for **offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plants**. OTEC is a technology which uses ocean temperature differences from the **surface to depths lower than 1,000 meters**, to extract energy.
- The technology and expertise needed in such missions is now available with **only five countries** - US, Russia, France, Japan and China. India will now be the sixth country to have it

DEEP OCEAN MISSION	
<ul style="list-style-type: none"> <li>➤ Deep Sea Mining through 'Underwater Vehicles' and 'Underwater Robotics'</li> <li>➤ Asserting exclusive rights to explore polymetallic nodules from seabed <b>over 75,000 sq km of areas in international water</b></li> <li>➤ Estimated polymetallic nodules resource potential: <b>380 million tonnes (MT)</b></li> </ul>	<p><b>THESE POLYMETALLIC NODULES CONTAIN</b></p> <p>Manganese <b>92.6 MT</b></p> <p>Nickel <b>4.7</b></p> <p>Copper <b>4.3</b></p> <p>Cobalt <b>1</b></p> <p>(*figures are rounded off)</p>
<ul style="list-style-type: none"> <li>➤ Development of ocean climate change advisory services</li> <li>➤ Technology for sustainable utilisation of marine bio-resources</li> </ul>	<ul style="list-style-type: none"> <li>➤ Deep ocean survey and exploration</li> <li>➤ Energy from the ocean and offshore-based desalination</li> <li>➤ Krill fishery from southern ocean</li> </ul>

- India has been allotted a site of 75,000 square kilometres in the **Central Indian Ocean Basin (CIOB)** by the **International Seabed Authority (ISA)** for the exploitation of Polymetallic Nodules (PMN).
- The Ministry of Earth Sciences is carrying out exploration activities for Poly-metallic Nodules (PMN) in the CIOB and for Poly-metallic Sulphides (PMS) in parts of Central and South-West Indian ridges.
- India was the first country to receive the status of a **'Pioneer Investor' in 1987** and was given an area of about **1.5 lakh sq km** in the CIOB for nodule exploration.
- In 2002, India signed a contract with the ISA and after complete resource analysis of the seabed **50% was surrendered** and the country retained an area of 75,000 sq km.

**Raman Research Institute (RRI) Has Developed Magnetometer**

- The researchers heated **rubidium atoms** to temperatures ranging between 100 and 200 degrees Celsius, causing spin fluctuations.
- They applied an external magnetic field across the heated rubidium atoms. They bombarded the atoms with a laser, which has a property called 'polarization'.
- The spin fluctuations caused the laser’s polarization to fluctuate, which the researchers measured using a light detector. The polarization fluctuation is the signal for the digital receiver system.
- A magnetometer can be deployed to measure unknown **magnetic fields**
- **It is a Low Cost, Reliable & Real-Time Measurements Of Magnetic Fields**. When magnetic matter creates signals, analysing them with (digital receiver system) DRS allows scientists to study the magnetic fields.

### Guidelines for Flexible Fuel Vehicles: FFVs

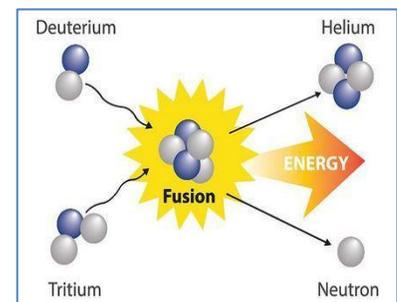
- An Flexible Fuel Vehicle (FFV) is a modified version of vehicles that could run both on gasoline and doped petrol with different levels of ethanol blends.
- The **guidelines will specify engine configuration** and other changes required in vehicles to **conform to stipulated changes in fuel mix**.
- FFVs will allow vehicles to use all the blends and also run on unblended fuel. FFVs have compatible engines to **run on more than 84 per cent ethanol blended petrol**.
- **Cost of ownership** and **running cost** are going to be very high compared with 100 per cent petrol vehicles.
- Flex Fuel Engines cost more as ethanol has very different chemical properties than petrol.
- **Ethanol also acts as a solvent** and could wipe out the protective oil film inside the engine thereby could cause **wear and tear**.

### Fusion Ignition

Recently, researchers at the **Lawrence Livermore National Laboratory** appeared to have **demonstrated “fusion ignition”** for the first time. This brought the world closer to the dream of **near-limitless clean energy through nuclear fusion**.

#### Nuclear Fusion

- Nuclear fusion is defined as the combining of several small nuclei into one large nucleus with the subsequent release of huge amounts of energy.
- The difference in mass between the reactants and products is manifested as either the release or the absorption of energy.
- Nuclear fusion powers our sun and harnessing this fusion energy could provide an unlimited amount of renewable energy.
- An example of nuclear fusion is the process of four hydrogen coming together to form helium.



#### Three conditions must be fulfilled to achieve fusion in a laboratory

- Very high temperature (on the order of 150,000,000° Celsius);
- Sufficient plasma particle density (to increase the likelihood that collisions do occur); and
- Sufficient confinement time (to hold the plasma, which has a propensity to expand, within a defined volume).

### Facial Recognition Technology

- Currently, the Airports Authority of India is working on a **project of facial recognition technology (FRT)-based Biometric Boarding System** as part of the first phase of **Digi Yatra scheme**.
- After this, passengers will be able to use a **face scan as their boarding pass** at four airports (Varanasi, Pune, Kolkata and Vijayawada) in the country from 2022.
- Facial recognition is a type of image identification technology. It uses distinctive features of the face to identify and distinguish an individual.
- These technologies rely on many of the processes and techniques associated with **artificial intelligence (AI)**. In particular, applications tend to use machine learning to classify subjects at speed and scale.

### Substitute For Single-Use Plastics

- Researchers have developed a **polymer** using non-edible oil and cellulose extracted from agricultural stubble.
- **Non -edible Castor oil** was used in this process of making the polymer which reacts with the cellulose and diisocyanate compound.
- The flexibility of the polymer sheet depends on the proportion of **cellulose** and **non-edible oil**.
- Higher the concentration of cellulose less flexible the polymer will be and vice versa.

### Other Alternatives to Single-Use Plastics

- Long-lasting plastic alternatives that are available right now are Stainless steel, glass, Platinum Silicone, Bamboo, pottery and ceramics, etc.
- Other than these, **bioplastics** can be used to replace traditional plastics. Bioplastics are a type of plastic that can be made from natural resources such as vegetable oils and starches.

### Zero-Shot Learning (ZSL)

- Machines have become much more intelligent, but without a properly **labelled training data set** of **seen classes**, they cannot distinguish between two similar objects.
- On the other hand, humans are capable of identifying approximately 30,000 basic object categories. In machine learning, this is considered as the **problem of Zero-shot learning (ZSL)**.
- ZSL is a problem setup in machine learning, where at testing, a learner observes samples from classes that were **not observed while training** the model and predicts the category they belong to Zero-shot methods.
- It basically works by combining the observed/seen and non-observed/unseen categories through some types of auxiliary information, which encodes observable distinguishing properties of objects
- The auxiliary information may include attributes, textual descriptions, etc

### Indigenous Memory Technology

- Researchers IIT-B has developed a “memory technology” that can revolutionize Indian industry and many applications that need semiconductor chips (defence sector, automobile, cell phone manufacturing, etc).
- There is a form of memory called the **onetime programmable memory (OTP)** where the memory is **written once, stored for a lifetime, and retrieved** and used many times.
- It can be used in various ways, one of which is in **correcting faulty chips** that have been mass-produced for specific applications.
- OTP memories also have many other uses of which three of them are- **chip identity, secure information storage, and chip calibration for error correction**.
- The memory cells used in the OTP memories is made up of **Silicon dioxide**

## MISCELLANEOUS

- **SC Order on Section 436A of the Cr.P.C:** Under Section 436A of the Cr.P.C, the undertrials who have completed half of the maximum prison term prescribed for the offence may be released on personal bond to decongest prisons owing to the COVID situation. The occupancy rate in prisons climbed to 118.5% in 2019. Moreover, a very large sum of the budget is used for the maintenance of prisons. The Court's order aims to decongest jails and a measure that protects the right to life and health of the prisoners.
- **North Eastern Space Applications Centre (NESAC):** To solve the Assam- Mizoram border dispute, Centre has asked the NESAC to map and demarcate State boundaries using satellite imaging. Located in Shillong, NESAC is a joint initiative of Department of Space (DOS) and the North Eastern Council (NEC).
- **US** has announced the support for a proposal from India and South Africa seeking a waiver from the implementation and application of certain provisions of the **TRIPS Agreement** (waiving IP rights like patents, copyright, and trademarks) for covid vaccines. At present, only drug companies which own patents are authorised to manufacture Covid vaccines. A lifting of patents will allow the formula to be shared with other companies.
- **YounTab Scheme: Ladakh Lt Governor** has launched the YounTab scheme for students in the Union Territory to encourage digital learning. Under the scheme, 12,300 tablets with pre-loaded online and offline content, including textbooks, video lectures and online class applications would be distributed to govt school students from **Class 6th to 12th**.
- **QS World University Rankings 2022**
  - Leading global higher education analysts QS (Quacquarelli Symonds) has released the 18th edition of one of the most-consulted international university ranking.
  - It is the only international ranking to have received the approval of International Ranking Expert Group (IREG).
  - The **Massachusetts Institute of Technology** achieved a record-extending 10th consecutive year as world number-one. The **University of Oxford** has risen to second for the first time since 2006. The **Stanford University** and the University of **Cambridge** share third spot.
  - **Indian Institute of Science (IISc), Bengaluru, Indian Institute of Technology (IIT) Bombay and IIT Delhi** remained the three universities from India to rank in the top-200 positions. The **Jawaharlal Nehru University has made its debut in the QS World University Rankings** and is placed in the 561-570 band.
  - QS uses six indicators to compile the ranking: **Academic reputation (AR), employer reputation (ER), citations per faculty (CPF), faculty/student ratio, international faculty ratio and international student ratio.**
- **Surakshit Hum Surakshit Tum Abhiyaan: NITI Aayog & Piramal Foundation** have launched Surakshit Hum Surakshit Tum Abhiyaan in 112 Aspirational Districts. Campaign will provide **Covid Home-Care Support** to 20 lakh citizens. The Abhiyaan is **being part of a special initiative, Aspirational Districts Collaborative**, in which local leaders, civil societies and volunteers work with district administrations to address emerging problems across key focus areas of the Aspirational Districts Programme.
- **YUVA Scheme:** It is a national scheme For Mentoring Young Authors' to encourage youngsters to harness their writing skills. This scheme will ensure creating a pool of authors below 30 years who are ready to express themselves and project India on any international platform, as well as projecting Indian culture and literature globally.
- **Jaan Hai To Jahaan Hai" Awareness Campaign:** It is a nationwide awareness campaign to create awareness on Corona vaccination in rural and remote areas of the country and also to "Crush and Curb" the rumours and apprehensions regarding the ongoing vaccination drive. It is launched by **Ministry of Minority Affairs**

- **Dalit Bandhu Scheme Of Telangana:** Dalit Bandhu enables entrepreneurship among Dalits through a *direct benefit transfer of Rs 10 lakh per family*. To promote Dalit entrepreneurship, the government has **decided to start a system of reservation for Dalits in sectors where the government issues licences**. This includes wine shops, medical shops, fertiliser shops, rice mills, etc.
- **Kalaigarnar Urban Development Scheme:** It is a Tamil Nadu government program under which Infrastructure including a community hall, markets, modern libraries will be created in municipalities and town panchayat. The urban employment scheme will be on the lines of MGNREGS, to improve the livelihood of the urban poor.
- **NTPC Renewable Energy Ltd (NTPC REL)** will set up the country's first **green Hydrogen Mobility project in Ladakh**.
- A rare Melanistic Leopard (commonly known as Black Panther) has been recorded in **Navegaon-Nagzira Tiger Reserve (NNTR) of Maharashtra**. NNTR has connectivity with the major tiger reserves in Central India like Kanha and Pench Tiger Reserve in Madhya Pradesh, Pench & Tadoba-Andhari TR in Maharashtra, Indravati tiger Reserve in Chhattisgarh and indirectly with the Kawal & Nagarjunsagar Tiger Reserve in Telangana & Andhra Pradesh and Achanakmar TR in Chhattisgarh.
- The National Research Centre on Yak (**NRCY**) at **Dirang** in West Kameng district, Arunachal Pradesh, has tied up with the National Insurance Company Ltd. for insuring their livestock against the risks posed by weather calamities, diseases, in-transit mishaps, surgical operations and strikes or riots.
- National Geographic Magazine Has Recognised The 'Southern Ocean' As The World's Fifth Ocean. The Southern Ocean is the only ocean 'to touch three other oceans and to completely embrace a continent rather than being embraced by them'. Its northern limit is a latitude of 60 degrees south.
- **Kerala's Silverline Project** is Kerala's flagship semi high-speed railway project aimed at reducing travel time between the state's northern and southern ends. It links Kerala's southern end and state capital Thiruvananthapuram with its northern end of Kasaragod. The line is proposed to be 529.45 kms long, covering 11 districts.
- The first shipment of Geographical Indication (GI) certified **Bhalia variety of wheat** was exported to Kenya and Sri Lanka from Gujarat. This wheat variety has **high protein** content and is sweet in taste. The crop is grown mostly across the **Bhal region of Gujarat**. It is grown in rainfed conditions without irrigation and cultivated in around two lakh hectares of agricultural land in Gujarat.
- **Shoonya Campaign:** Launched by NITI Aayog and Rocky Mountain Institute (RMI), it is an initiative to promote zero-pollution delivery vehicles by working with consumers and industry. RMI is an independent nonprofit organization founded in 1982.
- Scientists are on alert for a possible eruption of Hawaii's **Kilauea Volcano** within Hawaii Volcanoes National Park. Kilauea, also called Mount Kilauea, is located in Hawaii Volcanoes National Park on the south eastern part of the island of Hawaii, U.S.A. It is an active shield volcano.
- **SPARSH (System for Pension Administration (Raksha)):** It is an integrated system for automation of sanction and disbursement of defence pension and is implemented by the **Ministry of Defence**. This web-based system processes pension claims and credits pension directly into the bank accounts of defence pensioners without relying on any external intermediary.
- **'SARAL SANCHAR' Portal:** The Department of Telecommunications (DoT) has expanded the Saral Sanchar Portal. **'SARAL SANCHAR' (Simplified Application For Registration and Licenses)** is a web-based portal for Issuing various types of licenses and registration certificates such as Unified License, Unified license Virtual Network Operator, WPC Licenses (Wireless Planning and Coordination).
- **Hazara** is a community historically oppressed in Afghanistans. The group is largely found in the mountainous region of Hazarajat in central Afghanistan. They are believed to be descendants of Genghis Khan.

- **NHAI's Portal 'Data Lake'**: National Highways Authority of India, under Ministry of Road Transport & Highways, has made **mandatory use of drones for monthly video recording** of National Highway projects during all stages of development, construction, operation and maintenance. Contractors and Concessionaires shall carry out the drone video recording in presence of Team Leader of the Supervision Consultant and **upload** comparative project videos of the current and last month on NHAI's portal 'Data Lake'.
- **Jaynagar-Kurtha Rail Link**: India has handed over the 34.9 km long **cross-border rail link** connecting Jaynagar in Bihar to Kurtha in Nepal to the Nepal government. Jaynagar-Kurtha section is part of the **68.7km Jaynagar-Bijalpura-Bardidas rail link** built under India's grant assistance of NPR 8.77 billion.
- **Wolf Warrior Diplomacy of China**: Named after famous Chinese movies, it describes offensives by Chinese diplomat to defend China's national interests, often in confrontational ways. It reinforces a presumed transition of Chinese diplomacy from conservative, passive, and low-key to assertive, proactive, and high-profile. It's an **assertive new diplomatic approach in the Xi Jinping era** marked by a muscular posture in pursuing China's interests.
- **China Announced It Will Now Allow Three Children Per Married Couple**
  - Days after China's census data showed population growth slipping to its slowest rate since the 1950s, the country has announced it will now allow three children per married couple.
  - Five years ago in 2016, it first relaxed its controversial one-child policy to two. China embarked upon its one-child policy in 1980, when the Communist Party was concerned that the country's growing population, which at the time was approaching one billion, would impede economic progress.
- **Pandit Deen Dayal Upadhyay Unnat Krishi Shiksha Yojana (PDDUUKSY)**: The scheme was launched in 2016 to develop human resources in organic farming, natural farming and cow based economy for environmental sustenance and soil health. It is Implemented by the Education wing of the Indian Council of Agricultural Research (ICAR).
- **Khadi Prakritik Paint by KVIC**
  - It is India's **first paint made from Cow Dung**. Union MSME Minister **Nitin Gadkari** is the brand ambassador of Khadi Prakritik Paint.
  - The Paint has been launched with the twin objectives of increasing farmers' income and creating self-employment across the country.
  - Available in two variants- Distemper and Emulsion, Khadi Prakritik Paint contains "**AshtaLaabh**"; i.e. the eight benefits like anti-bacterial, anti-fungal and natural thermal insulation properties. This paint is eco-friendly, non-toxic, odorless and cost-effective.
- **Tripura AgarWood Policy 2021**: Tripura government has released the 'Tripura AgarWood Policy 2021,' which aims to double agarwood plantation by the year 2025. Agarwood is an economically important and fast-growing evergreen tree species native to North East India. Apart from India, the Agar tree's distribution ranges from the foothills of the Himalayas to Papua New Guinea. It is used to make natural incense.
- **'Project O2 for India'** of the Office of Principal Scientific Adviser, Government of India, is to enable stakeholders working to augment the country's ability to meet this rise in demand for medical oxygen in the wake of the second wave of the covid pandemic.
- **Operation Sagar Aaraksha II**: Indian Coast Guard (ICG), in coordination with Sri Lankan authorities, has been tirelessly engaged in fighting a major fire onboard the Chemical laden container vessel **MV X-Press Pearl** anchored off Colombo since May 2021. This coordinated **joint operation** undertaken to respond to potential environmental danger has been christened as Sagar Aaraksha-II.
- **INS Chilka**: INS Chilka is the only ab-initio training establishment of the Indian Navy. INS Chilka was commissioned in 1980 and is located in Odisha in the vicinity of Chilika Lake.

- **INS Sandhayak**: It is hydrographic survey ship, the first of its class indigenously designed and built. It was decommissioned recently, after 40 years of service.
- **I-Familia**: It is a Global database to identify missing persons, Launched by Interpol. It can **identify missing persons through family DNA** and help the police solve cold cases in member countries.
- **Microwave Weapons**: They are a type of **direct energy weapons (DEW)**, which aim **highly focused energy** in the form of **sonic, laser, or microwaves**, at a target. They release **electromagnetic radiations** which cause sensations in the human body
- **Project Seabird**: The project aims at creation of a naval base at Karwar on the west coast of India (Karnataka). Upon completion, the program will provide Indian Navy with its largest naval base on the west coast and also the largest naval base east of the Suez Canal.
- **White Flag Campaign In Malaysia**: In Malaysia, some residents of low-income families have started waving white flags as part of the so-called “White Flag Campaign”, or the #benderaputi (white flag) movement. They are doing this to convey distress about the financial crunch they have had to deal with amid the lockdowns due to Covid-19.
- **DEAL** stands for **Data for the Environment, Agriculture and Land Initiative**. Africa has become the **first continent in the world** to complete the collection of accurate, comprehensive and harmonised digital land use and land use change data under the Africa Open DEAL initiative.
- **Awards**
  - ✓ **UN Land Conservation Award**: Shyam Sundar Jyani, a Rajasthan-based climate activist, has won the prestigious United Nations' Land for Life Award for his environment conservation concept, **Familial Forestry**. Familial Forestry means transferring the care of trees and environment in the family so that a tree becomes a part of the family's consciousness.
  - ✓ **Alexander Dalrymple Award**: Chief Hydrographer to the Govt. of India has received the Alexander Dalrymple award from the British High Commissioner. He was rewarded in recognition of his leadership in the disciplines of hydrography and nautical cartography. The Alexander Dalrymple award has been named after the first hydrographer of the Admiralty and was instituted in 2006.
  - ✓ **Bhutan Confers Its Highest Civilian Award on PM Modi**
    - PM Modi has been conferred with the highest civilian award of Bhutan, Order of the Druk Gyalpo' also known as **Ngadag Pel gi Khorlo**, on the occasion of the country's National Day.
    - This day commemorates the **Coronation of the First King of Bhutan**, Druk Gyalpo Ugyen Wangchuck on December 17, 1907.
    - This award has been given in the recognition of all the unconditional friendship and support Indian PM extended over the years and particularly during the pandemic.
  - ✓ **SDG Progress Award**: Bangladesh PM has been conferred with the ‘SDG Progress Award’.
    - The award was given by the UN-sponsored *Sustainable Development Solutions Network (SDSN)* for Bangladesh's steady progress in achieving UN's Sustainable Development Goals.
    - The SDSN was set up in 2012 under the auspices of the UN Secretary General.
    - It seeks to mobilize global scientific and technological expertise to promote practical solutions for sustainable development.