

# PRE-MA-IN

UPSC MONTHLY CURRENT AFFAIRS

## SEPTEMBER 2023

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# PRELIMS BYTES

## 1. ART AND CULTURE

### 1.1 Hoysala temple

#### Why in the news?

- Recently, three temples from Hoysala dynasties were declared as World Heritage Sites.

#### Key details:

- Chennakeshava temple - Belur
- Hoysaleswara temple - Halebid
- Keshava temple - Somanathapur
- All three temples were in UNESCO's tentative list since 2014.
- All the three temples were named as '**The Sacred Ensembles of Hoysalas.**
- All the three temples are located in **Karnataka.**

#### About Hoysala temple:



#### 1. Chennakeshava temple:

- It was built by **King Vishnuvardhana** in the 12th century in **Belur.**

- Belur was the capital city of Hoysalas.

- This temple is dedicated to **Vishnu**
- The temple has narrations on **Ramayana and Mahabharata.**

#### 2. Hoysaleswara temple:

- It was also built by the king **Vishnuvardhana** in 1121AD in **Halebid.**
  - The capital of the dynasty was shifted from Belur to Halebid.
- This temple was dedicated to **Shiva.**
- **Stepped well** is a unique construction of this temple.

#### 3. Keshava temple:



- This temple was built in **Somanathapura.**
- This temple was dedicated to **Vishnu.**
  - Vishnu is in three forms - Janardhana, Keshava and Venugopala.

#### About Hoysala style of architecture:

- It was developed by the **Hoysala dynasty** in the **11th and 14th centuries.**

These temples are sometimes called **hybrid or vesara style** architecture.

- It seems neither completely Dravida nor nagara style architecture.
- The Hoysala temples contain multiple shrines grouped around a central pillared hall and laid out in the shape of an intricately-designed star.
- The Hoysala temples are known for evolving a distinct style that is ornate with temple architecture following a stellate plan built on a **raised platform**.
- The material used in temple construction is chlorite schist which is also known as **soapstone** that is soft and amiable to carving.

## 1.2 Konark sun temple

### Why in the news?

Recently, a replica of the Konark Wheel from Odisha's Sun Temple served as the backdrop for Prime Minister Narendra Modi's welcome handshake with G20 leaders.



### About Konark sun temple:

- This temple is located in **Odisha**.
- It was dedicated to the **sun god**.

- It was built by King **Narasimha deva I of Eastern Ganga dynasty of the 13th century**.
- This temple is called as **Black pagoda**.
- **Puri Jagannath temple** of Odisha is considered as **White pagoda**.
- This temple was declared as a **UNESCO world heritage site in 1984**.
- On each side of the Konark sun temple, **there are two rows of 12 wheels**.
- The temple is built in the **Kalinga or Orissa style** of Hindu temple architecture, which is a subset of the **Nagara style**.

## 1.3 Safdarjung Tomb

### Why in the news?

Recently, **the last garden tomb of the Mughals, Safdarjung tomb** in New Delhi has been decorated on the eve of World Tourism Day.

### About Safdarjung Tomb:



- This is **the tomb of Mirza Muqim Abul Mansur Khan**, who was **titled Safdarjang**, the **Viceroy of Oudh/Awadh under Mughal Emperor, Muhammad Shah** and

later on **prime minister under Ahmad Shah.**

- Built by: **Shuja'ud-Daula, Safdar Jang's son.**
- The **sandstone and marble** mausoleum was built in **1754.**
- It has several smaller pavilions with evocative names like **Jangli Mahal**, (Palace in the woods), **Moti Mahal** (Pearl Palace) and **Badshah Pasand** (King's favourite).
- The tomb is the last example of the pattern- garden tomb which began with Humayun's tomb.
- Enclosed within a large garden, divided into squares on the **charbagh pattern**, with tanks and fountains along the central pathway, with a gate on the east and pavilions on the other three sides, the tomb proper stands out in the centre of the enclosure.
- It is a square double-storeyed structure built on a raised terrace and surmounted by a **bulbous dome of marble.**
- **Red and buff sandstone has been used in its facing**, a large proportion of which was stripped off from 'Abdu'r-Rallim Khan-i-Khanan's tomb.

## 1.4 Srimanta Sankaradeva

### Why in the news?

Recently, the Assam government is working on a law to create an indigenous-only zone around **Batadrava**, the birthplace of **15<sup>th</sup>-16<sup>th</sup> century saint-reformer** Srimanta Sankaradeva who propounded **neo-Vaishnavism.**

### Key points:

- 575th Birth anniversary of the saint.
- Batadrava is to the followers of neo-Vaishnavism what Vatican City is to the Roman Catholics.

### About Srimanta Sankaradeva:

- Sankaradeva was a 15th–16th century Assamese polymath; a saint-scholar, poet, playwright, dancer, actor, musician, artist, social-religious reformer and a figure of importance.
- He is widely credited with building on past cultural relics and devising-
  - New forms of music (Borgeet)
  - Theatrical performance (Ankia Naat, Bhaona),
  - Dance (Sattriya)
  - Literary language (Brajavali)

### Literary works

- He has left extensive literary trans-created scriptures (Bhagavat of Sankardev), poetry and theological works written in Sanskrit, Assamese and Brajavali.
- His literary creations are Kirtan Ghosa, Gunamala etc.

### Political influence:

- The Bhagavatic religious movement he started, **Ekasarana Dharma** and also called the **Neo-Vaishnavite movement**, influenced two medieval kingdoms – **Koch and the Ahom** kingdom.
- His influence spread even to some kingdoms as the Matak Kingdom founded by Bharat Singha, and consolidated by Sarbananda Singha in the latter 18th century endorsed his teachings.

- The assembly of devotees he initiated evolved over time into monastic centers called **Sattras**, which continue to be important socio-religious institutions in Assam and to a lesser extent in North Bengal even today.

## 1.5 Adhi Shankaracharya

### Why in the news?

Recently, 108 feet Adhi Shankaracharya statue was unveiled in Madhya Pradesh.



### About Adhi Shankaracharya:

- He was an **Vedic scholar** and teacher in the **8th century** born in **Kerala**.
- He was a **devotee of lord Shiva**.
- He was a proponent of **advaita philosophy**.
  - Advaita philosophy meaning **Brahman alone is ultimately real**, while the **transient phenomenal world is an illusory appearance (maya) of Brahman**.
  - The **jivatman** or individual self is a mere **reflection** or limitation of singular **Atman** in a multitude of apparent individual bodies.

- He Established **four Mathas** in the four corners of India at **Sringeri, Puri, Dwaraka** and **Badrinath**– for **propagation of Sanathana Dharma**.

### Literary works:

- He wrote **Brahma sutra bhasya**.
- He has also written **commentaries** on ten **principal Upanishads**.
- **Bhajagovinda Stotra**.

## 1.6 Teej festival

### Why in the news?

- Recently, the 9 day **Teej festival** was **started in Telangana**.



### Key details:

- Teej festival is one of the socio-cultural showcases by celebrating the **nine day monsoon period**.
- Teej festival is celebrated in the state of **Telangana**.
- **Lambada tribes** of Telangana celebrate this festival **annually**.
- This festival is celebrated in the **month of sravanam (September)** of the Indian calendar.
- **Young girls and women** pray for a bountiful harvest and prosperity in their lives

- **Songs and dance** are integral to the festival.
- They worship god **Bathukamma** and **Sevalal Maharaj**, a saint by carrying wheat seedlings in twig baskets and immersing them in local streams.
- Lambada community is a **nomadic tribe** and a part of **Banjara community** of Rajasthan.

## 1.7 Toto Shabda Sangraha

### Why in the news?

Recently, a professor at University of Kolkata has developed a dictionary for the Toto language.

### About Toto:

- Toto is a **Sino-Tibetan language** spoken by the tribal Toto people and is written in the **Bengali script**.
- It is spoken by only 1500 people in west Bengal and Bhutan border areas.

### Toto Shabd Sangraha:

- It is a **dictionary** of Toto language.
- Toto words, to be **translated into Bengali and English**, will be composed in the Bengali script.
- Because the **Toto script is still in a nascent stage** and members of the tribe are more familiar with the Bengali script.

## 2. GEOGRAPHY

### 2.1 Monsoon rainfall

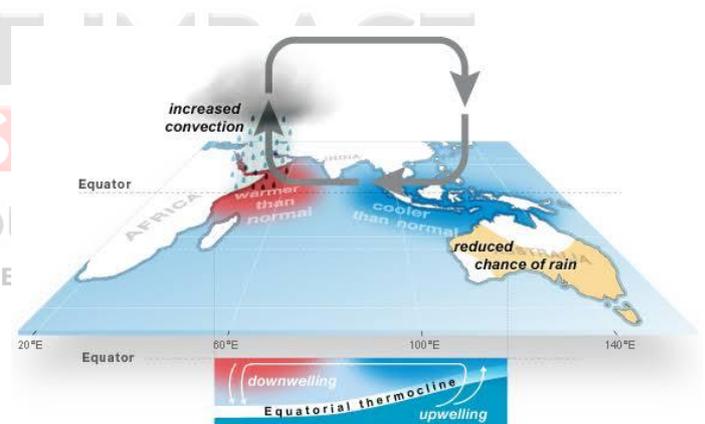
### Why in the news?

Recently, the Indian meteorological department said that the monsoon rainfall in the august month is 36% lower than the average rainfall.

### Key takeaways:

- The temperature of the country also increased 1% higher than the average temperature.
- Increasing trend in monsoon break days.
- **Region wise deficit level:**
  - 17% - Eastern, North Eastern and Southern india
  - 10% - Central india
- **Reasons for the lower rainfall:**
  - Neutral phase of **Indian Ocean dipole**
  - Weak phase of the **Madden julian oscillation**

- **El Nino** phase in the central Pacific Ocean.



Indian Ocean Dipole (IOD): **Positive phase**

© Commonwealth of Australia 2013.

### Indian Ocean Dipole:

- It is also called **Indian El Nino**.
- The system is much weaker than the El nino Southern Oscillation system.
- Positive phase of the IOD can moderate the effects of the El nino.
- The IOD happens between Indonesia and the South Africa coast.

### Positive phase:

- Western side of the Indian Ocean is warmer than the eastern side of the Indian Ocean.
- It brings rainfall to India.

### Negative phase:

- Western side of the Indian Ocean is cooler than the eastern side.
- It reduced the rainfall level in India.

**Madden-Julian Oscillation (MJO):** It is like a large-scale weather pattern that travels across the equator, affecting rainfall in different parts of the world. Imagine it as a cycle that lasts about 30 to 60 days.

- **Wet phase:** In this phase, there is increased rainfall and thunderstorm activity in certain areas, starting over the western Indian Ocean.
  - As it moves eastward over warm tropical waters, it brings heavy rain to the Pacific Ocean. However, as it reaches cooler waters in the eastern Pacific, the rain lessens. Later on, it reappears over the tropical Atlantic and Indian Ocean.
- **Dry phase:** After the rainy period comes the "dry phase," where thunderstorm activity is suppressed, and there's less rainfall.
  - This entire cycle repeats every 30 to 60 days, hence the names "30-60 day oscillation" or "intra-seasonal oscillation."

**Impacts:** This phenomenon has a significant impact on weather patterns, especially in regions like the Indian Ocean and Pacific, and it can influence things like the monsoon in India or even the development of tropical cyclones.

**El Nino:** It is a climate pattern that describes the unusual warming of surface waters in the eastern tropical Pacific Ocean. El Nino is the "warm phase" of a larger phenomenon called the El Niño-Southern Oscillation (ENSO).

## 2.2 Atlantification

### Why in the news?

Recently, studies show that Atlantification has disturbed ocean stratification in the Arctic and caused heat fluxes that help melt sea ice.

### Key details:

- Arctic dipole associated with anti-cyclonic winds over North America and cyclonic winds over Eurasia, affects the inflow of water from the North Atlantic through the farm strait.

### Atlantification:

- Warm waters from the Atlantic Ocean have been diverted into the Arctic Ocean.

### Arctic dipole anomaly:

- The Arctic dipole anomaly is a pressure pattern characterized by high pressure on the arctic regions of North America and low pressure on those of Eurasia.

## 3. POLITY AND GOVERNANCE

### 3.1 Article 371 D

### Why in the news?

Recently, the student community in Andhra

Pradesh fear the prospect of losing 'local quota' in educational institutions.

### Key points from news:

- The students fear that the Andhra Pradesh Reorganisation Act, which came into force in May 2014, is valid only for 10 years.
- The students also fear that the rules and regulations formulated prior to the bifurcation of Andhra Pradesh will not hold good after May 2024.

#### About Article 371 D:

- It was promulgated to safeguard the rights of local students in education and employment, especially in Andhra Pradesh, as both the Andhra and Telangana regions had witnessed a spate of agitations in the early 1970s.
- It was introduced in the constitution by the 32nd amendment act in 1973.
- The President must ensure "equitable opportunities and facilities" in "public employment and education to people from different parts of the state".
- Under this article, 85% of the seats are reserved for the local people in the educational institutions and jobs.

#### Purpose:

- To ensure development of backward areas in Andhra Pradesh.
- Provide equitable chances to diverse sections of people in employment and educational opportunities.

### 3.2 India as Bharat

#### Why in the news?

Recently, the opposition leaders opposed the term "**President of Bharat**" which has been used for the first time in an official invite for a banquet hosted by the President for the dignitaries attending the G20 summit, replacing the traditional "**President of India**".

#### About India and Bharat:

- **Article 1 says that India, that is Bharat, is a Union of states.**
- Legal experts said that **both India and Bharath can be used interchangeably.**
- In **2016, the Supreme Court said that anyone can use both India and Bharath interchangeably, because both names are mentioned in the constitution.**
- The name Bharatha appears in the **Rig Veda.**
- It is the name of the tribune of Sudan who defeated an enemy coalition in the Battle of ten kings.
- **Vishnu Purana (400 BC)** says , the country north of the ocean and south of snowy mountains is called Bharatha.
- **Hathigumpha inscription ( 2nd BC)** - Jain king Kharavela sent an expedition to conquer Bharatavarsha.

### 3.3 Budget preparation

#### Why in the news?

Recently, the finance ministry started to prepare the 2024 interim budget as 2024 is a due year for general election.

#### About interim budget:

- An Interim Budget is presented during the transition period when a new government is due to take over but the ruling government needs Parliament's go-ahead to take out money from the Consolidated Fund of India.

#### Difference between vote on account and interim budget:

- The 'Vote on Account' is the process by which an incumbent government obtains votes from Parliament to draw money from

the Consolidated Fund of India to meet its expenses until the elections are done.

- It is just the **estimate of expenses** the outgoing government requires before the General Election's period.
- The 'Vote on Account' only deals with the **government's expenditures**.
- On the contrary, an **Interim Budget gives full details of the government's accounts, including both receipts and expenditures**.

### 3.4 Special session of the parliament

#### Why in the news?

- Recently, the Parliamentary affairs minister said that the government followed all the rules with regards to the call of a special session of the parliament.

#### What is a Special session?

- A special session in the Indian Parliament is a period when the legislature body of MPs gather to conduct the House business outside of their usual legislative sessions.
- Cabinet Committee on Parliamentary Affairs in an official capacity decides on calling for the session.
- Although there is no specific provision in the Constitution that deals with special sessions, a few such sessions have been convened in the past.
- The term 'special session' is not explicitly mentioned in the Constitution or in the rulebooks of the two Houses of Parliament. There are no specific guidelines on how or when such a session can be convened.
- However, Article 352, which deals with the proclamation of Emergency, refers to a 'special sitting' of the House. This clause was added through the 44th Amendment

Act in 1978, which included safeguards against the Emergency.

- Several special sessions including midnight sessions have been called for a special purpose or agenda, or to mark occasions of national significance.

#### Previous special sessions:

- **1947:** Special session held on the eve of Independence to mark the transfer of power from the British to India.
- **1962:** Special session during the Indo-China war. The Winter Session was advanced to discuss the Chinese aggression, and the Question Hour was suspended.
- **1972:** Special session in August to mark 25 years of Independence.
- **1992:** Midnight session called to mark the 50th anniversary of the Quit India Movement.
- **1997:** A six-day special session called in August to commemorate 50 years of Independence.
- **1977:** Special session in Rajya Sabha for the extension of President's Rule in Tamil Nadu and Nagaland.
- **1991:** Special session in Rajya Sabha for the approval of President's Rule in Haryana.
- **2008:** Special session in Lok Sabha for a trust vote after the Left withdrew support to the United Progressive Alliance government led by Manmohan Singh.
- **2017:** The first joint midnight session called by the NDA led government to roll out the Goods and Services Tax (GST).
- **2023:** The second special session convened by the NDA led government, scheduled from September 18 to 22, conducted

without Question Hour, Zero Hour, or private members' business.

- Discussion on 'Parliamentary Journey of 75 years starting from Samvidhan Sabha - Achievements, Experiences, Memories and Learnings'
- Some important bills were passed including the Women's Reservation Bill, officially the 128th Constitution (Amendment) Bill, with an overwhelming majority in both Houses.

**About Parliament session:**

- India **does not have a fixed parliamentary calendar.**
- By convention, **Parliament meets for three sessions in a year.**
  - Budget session
  - Monsoon session
  - Winter session
- The power to convene a session of Parliament **rests with the government.**
- The decision is taken by the Cabinet Committee on Parliamentary Affairs, and formalized by the **President, in whose name MPs are summoned to meet for a session.**
- A **general scheme of sittings** was recommended in 1955 by the General Purpose Committee of the Lok Sabha was accepted by the government but not implemented.
- **Article 85** of the constitution deals with the summoning of parliament.
  - **The houses are summoned to meet at least twice a year.**
- This provision was taken from the **Government of India act 1935.**

**3.5 CBI and consent of government**

**Why in the news?**

Recently, the Constitution Bench held that a Supreme Court judgment of 2014 which declared invalid a legal provision mandating the Central Bureau of Investigation (CBI) to take prior permission before investigating corruption cases against senior government officials has a retrospective effect.

**Key details:**

- The 2014 Supreme Court judgment which declared invalid a legal provision of Section 6A of the Delhi Special Police Establishment Act has retrospective effect.
- The court also said that Article 20(1) also wouldn't apply in this case.
  - Article 20(1) says that a person can only be convicted under a law which was in force at the time of the crime.

Retrospective effect of order	Prospective effect of order
<ul style="list-style-type: none"> <li>• It means past</li> <li>• The provision of the section 6A would not be operational since 2003.</li> </ul>	<ul style="list-style-type: none"> <li>• It means future</li> <li>• The section 6A would not be operational only from the day of judgment, not from the day of insertion.</li> </ul>

**Section 6A:**

- It was inserted into the DSPE act 1946 in 2003.
- It said that the CBI should take consent of the central government even before starting the preliminary inquiry of the Joint secretary and above officers.

### About Central Bureau of Investigation:

- Central Bureau of Investigation (CBI) is the premier investigating police agency in India.
- **Nodal ministry:** Ministry of Personnel, Pension and Public grievances.
- It is also the nodal police agency in India which coordinates investigations on behalf of Interpol Member countries.
- **Statutory power:** The CBI is **not a statutory body** but derives its power to investigate from the Delhi Special Police Establishment Act, 1946.
- **Committee:** It was established by the **Santhanam Committee** on Prevention of Corruption.

### 3.6 National Judicial Data Grid

#### Why in the news?

Recently, the Chief Justice of India launched the National Judicial Data Grid.

#### About the National Judicial Data Grid:

- This portal is a national repository of data relating to cases pending, disposed of by the courts.
- It was developed by the **National Informatic center**.
- All the three tiers of the judiciary system **Supreme Court, High courts and District Courts** are integrated into this data grid.
  - Around 18,000 courts were added under this initiative.
- It was a part of **phase III of the e-court project**.

#### Benefits:

- Transparency and accountability
- Informed decision making

- Increased coordination
- Data for high quality research

### 3.7 Ayushman Bhava campaign

#### Why in the news?

Recently, the President of India launched the Ayushman bhava campaign portal.

#### Ayushman bhava campaign:

**Aim:** Deliver healthcare facilities to all the people in the last mile.

**Objective:** Consolidation of accessibility and affordability of the healthcare services particularly for underprivileged sections.

**Nodal ministry:** Ministry of Health and Family welfare

#### Key features:

- Under this scheme **health melas and medical camps** will be set up once a week in all health and wellness centers.
- Gram panchayats who successfully achieved their goal would be declared as **Ayushman gram panchayats**.
- Ensure access to Ayushman cards, generate ABHA ID to the underprivileged people.
- Awareness promotion campaigns on healthcare schemes and disease conditions such as TB, sickle cell disease.
- The campaign, which will be implemented during the **'Seva Pakhwada'** from September 17th to October 2nd, 2023, embodies a whole-of-nation and whole-of-society approach.
- This synergistic approach aims to saturate coverage of health services through its three components :

- **Ayushman apke dwar:** Provide Ayushman cards to the remaining enrolled people under the PMJAY.
- **Ayushman mela:** Facilitation of easy registration of Ayushman cards.
- **Ayushman sabhas:** In every gram panchayat, awareness about the PM Jan Arogya Yojana scheme and non communicable diseases will be organized.

### 3.8 Constitution bench

#### Why in the news?

Recently, the Chief justice of India referred the validity of the 104th constitutional amendment act to the constitution bench.

#### About constitution benches of the Supreme Court:

- **Definition:** Whenever a matter of law arises that requires a provision or provision of the Constitution to be interpreted, or there is a "significant legal question", it is required to be decided by a Bench involving a minimum of five judges of the Supreme Court, Such a Bench is called the Constitution Bench.
- **Article 145(3)** says a minimum of five judges need to sit for deciding a case involving a "**substantial question of law as to the interpretation of the Constitution**", or for hearing any reference under **Article 143**, which deals with the power of the President to consult the SC.
- **Other scenarios:**
  - If two or three-judge Benches of the Supreme Court have delivered **conflicting judgments** on the same point of law.
  - If a later three-judge Bench of the SC doubts the correctness of a judgment

delivered by a former Bench with as much strength and decides to refer the matter to a larger bench for reconsideration of the previous judgment.

- As per the legal provisions, a Constitution Bench consists of a minimum of five judges and the number can go up to an odd number of seven, nine and so on.
- The **Chief Justice of India**, who is also the **master of the roster**, decides which cases will be heard by a **Constitution Bench**, the number of judges on the bench and even its composition.
- To date, the largest-ever Constitution Bench was that of **13 judges in the case Kesavananda Bharati v. State of Kerala**.

### 3.9 Food Safety and Standards Authority of India

#### Why in the news?

Recently, the Food Safety and Standards Authority of India (FSSAI) has directed manufacturers of sweetmeats **not to cook outdoors** as it can expose food and its ingredients to environmental contaminants and pose a risk to food safety.

- (FSSAI) also recommended the **use of quick response (QR) codes on food products** for accessibility by persons with visual disabilities.
  - These QR codes should **encompass comprehensive details about the product**, including, but not limited to, ingredients, nutritional information, allergens, manufacturing date, best before/expiry/use by date, allergen warning, and contact information for customer inquiries.

### About Food Safety and Standards Authority of India:

- It was established to **protect and promote public health** through the regulation and supervision of food safety.
- **Year:** It was established in **2006** under the **Food Safety and Standards Authority of India Act 2006**.
- **Nodal Ministry:** Ministry of Health and Family Welfare
- **Headquarters:** **New Delhi** and Six regional offices in Delhi, Mumbai, Kolkata, Chennai, Gauhati.
- **Composition:** It consists of a chairperson with 22 other members.

### Functions under the act:

- Framing **rules and regulations** to ensure food safety.
- Laying down **regulations for food testing**
- Provide **scientific advice** and technical support

- **Collection and dissemination of data** related to food safety
- **Promote awareness** about health and nutrition.

### Report:

- It releases annually the **State Food Safety Index (SFSI)** to measure the performance of states on five significant parameters of Food Safety.

### Food Safety and Standards (Labelling and Display) Regulations, 2020

- It has comprehensively outlined the **information to be included on the labels of food products**.
- This includes product name, shelf life, nutrition facts, vegetarian/non-vegetarian logos, ingredient lists, allergen warnings, and other product-specific labelling requirements.
- The information is aimed at empowering consumers **to make informed choices when selecting food products**.

## 4. INTERNATIONAL RELATIONS

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### 4.1 International Criminal Court (ICC)

#### Why in the news?

Recently, the Brazilian president said that the country will review its ratification of the Rome statute.

#### About International Criminal Court:

- It was established based on the **Rome statute** to try individuals charged with the gravest crimes of concern to the international community.
- **Crimes covered under the jurisdiction:**
  - Genocide

- War crimes
- Crimes against humanity
- Crime of aggression.
- **Year:** It was established in 2002.
- **Headquarters:** The Hague, Netherlands.
- **Individuals and current Head of states can be tried and convicted.**
  - Eg: Russian president Putin was convicted and issued an arrest warrant in 2022.
- It **doesn't have a special enforcement agency** to enforce its orders.

- As a court of last resort, it seeks to complement, not replace, national Courts.
- **Members:** 123 members. India is not a member.

## 4.2 G20 satellite

### Why in the news?

Recently, India proposed the launch of the G-20 satellite for climate observation.

### Key details:

- India announced this project in the latest (18th) G-20 Delhi summit.
- The main aim of the project is to help global south countries on climate and environment observation.
- India in 2017 launched a **SAARC satellite** as part of its '**neighborhood first policy**' to provide information on telemedicine, tele education, banking to its south Asian neighbors.

## 4.3 France abaya issue

### Why in the news?

Recently, France banned the wearing of abaya in schools.

### Key details:

- **France banned the abaya to be worn in schools** because it is against the rules of secularism.

### French secularism (Principle of laicite):

- It involves the **complete removal of religious values from the public sphere** and their replacement with secular values such as liberty, equality, and fraternity.
- French secularism is also called **negative secularism**.

- There is a **complete separation between state and religion**.

### Indian secularism:

- Indian secularism means **providing equal support and recognition to all the religions in the country**.
- It is also called **positive secularism**.
- In India, there is **no complete separation between religion and state**.

## 4.4 United Nations Human Rights Council

### Why in the news?

Recently, the council of session of the United Nations Human Rights Council was held in Geneva.

### Key details:

- The chief of the human rights council raised the issue of Manipur and nuh violence in the forum.

### About United Nations Human Rights Council:

- It is an intergovernmental body within the United Nations system responsible for strengthening the promotion and protection of human rights around the globe.
- It is one of the **specialized agencies** of the United Nations.
- It was created by the UN general assembly in 2006.
- **Headquarters:** Geneva, Switzerland.
- **Members:** 47 members are elected by the UN general assembly.
  - They are elected for **three year terms**.
  - They are **not eligible for immediate re-election** after two consecutive terms.

- Council of session is the **highest decision making body** which convenes **three times in a year**.

#### Procedures:

- **Advisory committee:** It acts as the think tank of the human rights council.
- **Universal Periodic review:** It is used to assess the human rights issues of the member countries.
- **UN special procedures:** These are made up of special rapporteurs, special representatives that monitor, examine, advise and publicly report on thematic issues or human rights situations in specific countries.

### 4.5 United Nations General Assembly

#### Why in the news?

Recently, the United Nations General Assembly annual meeting was held in New York.

#### About United Nations General Assembly:

- It is one of the **six principal organs** of the United Nations.
- The UN General Assembly (UNGA) is the **main policy-making organ** of the Organization.
- Comprising all Member States, it provides a unique **forum for multilateral discussion** of the full spectrum of international issues covered by the Charter of the United Nations.
- **Members:** It has **193** member states and **India is a founding member** of the United Nations.
- It **meets every year** in September and **It can meet anytime if needed**.
- **Vote power:** Each of the **193** Member States of the United Nations has an **equal**

**vote** and **it is the only UN organ** where all member states have equal representation.

#### Major functions:

- **Appointing the Secretary-General** on the recommendation of the Security Council.
- **Electing the non-permanent members** of the Security Council
- **Approving the UN budget**

### 4.6 Five eyes alliance

#### Why in the news?

Recently, the US shared the intelligence details about the killing of Hardeep Singh Nijjar to Five Eyes alliance.

#### About Five Eyes Alliance:



- It is a forum of five countries to share a broad range of **intelligence** with one another in one of the world's most unified multilateral arrangements.
- **Members: USA, UK, Canada, Australia and New Zealand.**
  - The UK and USA are the founding members of this forum.
  - **Note: India is not a member of this forum.**
- These nations have accepted the international **UKUSA Agreement**, which promotes cooperation in the field of signals intelligence.

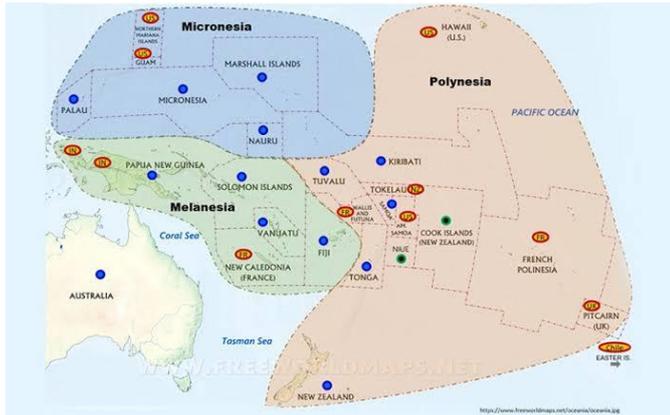
- **Year:** It was established in **1946** through the Atlantic charter.

## 4.7 Pacific Island Forum

### Why in the news?

Recently, the USA hosted the Pacific Island Forum annual meeting.

### About Pacific Islands Forum:



- The Pacific Islands Forum (PIF) is an **intergovernmental organization** that aims to enhance cooperation between countries and territories of Oceania.
- **Year of formation: 1971.**
- **Headquarters:** Fiji
- **Members:** This forum consists of **18 members.**
  - Australia, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.
  - **Australia and New Zealand are prominent members.**
- It is a **United Nations General Assembly observer.**
- India is one of the **dialogue partners** of this forum.

- India actively participated with this region through the **India- Pacific Islands cooperation.**

### Key thematic areas:

- Political leadership and regionalism
- People centered development
- Peace and security
- Resources and economic development
- Climate change and disasters
- Ocean and natural environment
- Technology and connectivity

## 4.8 INTERPOL

### Why in the news?

Recently, the Interpol issued a Red Notice against alleged Babbar Khalsa International (BKI) terrorist Karanvir Singh on the request of Indian enforcement agencies.

### About INTERPOL and mandate:

- International Criminal Police Organization
- Formed: 1923
- It is an intergovernmental organization
- 195 Member countries

### Mandate:

- Help police in all the member countries to work together to **make the world a safer place.**
- To do this, enable the member nations to **share and access data on crimes and criminals** and offer a range of technical and operational support.

### Structure:

- **General Secretariat:**

- Coordinates day-to-day activities to fight a range of crimes- Governing body.
- Run by the Secretary General.
- Headquarters: Lyon, France
- Brings all countries together once a year to make decisions.
- In each country, an INTERPOL **National Central Bureau (NCB)** provides the central point of contact for the General Secretariat and other NCBs.
  - An NCB is run by national police officials
  - Usually sits in the government ministry responsible for policing.
- **Communication system:**
  - Connects all member countries to contact each other and the General Secretariat.
  - Allows them to access INTERPOL's databases and services in real-time, from both central and remote locations.
- INTERPOL manages **19 police databases** with information on crimes and criminals (from names and fingerprints to stolen passports), accessible in real-time to countries.

#### Red Notice:

- A Red Notice is a **request to law enforcement worldwide** to locate and provisionally arrest a person pending extradition, surrender, or similar legal action.
- A Red Notice is **not an international arrest warrant**.
- The majority of Red Notices are restricted to law enforcement use only.

## 4.9 ISDS and UNCITRAL

### Why in the news?

Recently, discussions on creating an appellate review mechanism are ongoing at the **United Nations Commission on International Trade Law or UNCITRAL's** working group III, deliberating on **ISDS (Investor-State Dispute Settlement)** reforms.

### About Investor-State Dispute Settlement (ISDS):

- Investor-state Dispute settlement (ISDS) is a **mechanism in a free trade agreement (FTA) or investment treaty** that provides foreign investors with the **right to access an international tribunal to resolve investment disputes**.
- Very common component of Bilateral Investment Treaties (BITs).
- It is a principal means to settle international investment law disputes.
- It operated through ad hoc/ one-off arbitration tribunals without any appellate law.

### United Nations Commission on International Trade Law (UNCITRAL):

- Established: **1966**.
- **Subsidiary of the UN General Assembly**.
- **Mandate:** To further the progressive harmonization and unification of the law of international trade.
- UNCITRAL **meets once a year**, typically in summer, alternatively **in New York and in Vienna**.
- Membership: Originally 29 states, currently- **70 members**.
  - Members of the Commission are elected for **terms of six years**, the terms of **half**

**the members expiring every three years.**

- **Regional groups representation:**
  - African States;
  - Asian States;
  - Eastern European States;
  - Latin American and Caribbean States;
  - Western European and Other States.

#### **Key points from the news:**

- Need for appellate mechanisms:
  - In international investment law, hundreds of ISDS tribunals operating under different arbitral institutions have, on several occasions, offered diverging interpretations of the same treaty provision.
  - The absence of an appellate review mechanism has meant inconsistent **and incoherent decisions and legal reasoning** in the international investment law.
- This has caused **instability and improbability** for states and foreign investors.
- An appellate review mechanism will allow for **rectifying errors of law and harmonizing** diverging interpretations.
- It will have the power to **uphold, modify, or reverse the decision of a first-tier tribunal** and thus **bring coherence and consistency**, which, in turn, will infuse **predictability and certainty** into the ISDS system.
- An appellate mechanism will also be **better than** existing mechanisms such as the **annulment proceedings**.
  - Annulment proceedings **only apply to arbitrations administered by the International Centre for Settlement of Investment Disputes** of which India is not a member.
  - Annulment proceedings can **only address limited issues**, such as the improper constitution of an arbitration tribunal or corruption but cannot correct errors in legal interpretation.



## **5. ECONOMY**

### **5.1 Central Bank Digital Currency**

#### **Why in the news?**

Recently, the Reserve Bank of India governor said that the central bank digital currency can make payments across borders efficiently.

#### **Key details:**

- Challenges in the existing cross border payment system:
  - Low speed

- High cost
- Limited access
- Poor transparency

- CBDC can overcome these issues if implemented in the crossborder transactions.

#### **About Central Bank Digital Currency:**

- RBI defines the CBDC as the **digital form of currency** notes **issued by a central bank (RBI)**.
- It is a sovereign or entirely independent currency issued by the central bank in

accordance with the country's monetary policy.

- It is officially recognised as a **legal tender**.
  - It can be **converted into other forms of commercial bank money**.
- **Types:**
  - **Retail e-Rupee:** It can be used by all retailers and businesses.
  - **Wholesale e-Rupee:** It is available only to restricted financial institutions.
- **No need to have a bank account** for storing CBDC, because it is a **liability on the RBI's balance sheet**.
- The CBDC will **not earn any interest**.
- Users will be able to transact with e₹- R through a **digital wallet** offered by the participating banks.

## 5.2 Crypto currency

### Why in the news?

Recently, the finance minister flags threats to the financial system from crypto and tax havens.

### About crypto currency:

- A cryptocurrency is a **digital or virtual currency** secured by cryptography, which makes it nearly impossible to counterfeit or double-spend.
  - **Eg: Bitcoin**
- In September 2021, **El Salvador became the first country in the world to introduce Bitcoin as legal tender**.
- Most cryptocurrencies exist on **decentralized networks using blockchain technology**, a distributed ledger enforced by a disparate network of computers.

- A defining feature of cryptocurrencies is that they are **generally not issued by any central authority**.

### Legality of crypto assets in India:

- 2019 - RBI banned the crypto currency in transactions.
- 2020 – Supreme court removed the ban on crypto currencies imposed by the RBI.
- 2022 - Government put 30% tax on any transfer of virtual currency or crypto currency.
- 2022 - RBI released central bank digital currency in the wholesale and retail trading system.

## 5.3 Foreign Exchange (Forex) Reserves

### Why in the news?

Recently, the Reserve Bank of India released the data about the foreign reserves of the country.

### Key details:

- Total foreign reserves are \$598 bn.
- **Key components:**
  - Foreign currency assets - \$530 bn
  - Gold stocks - \$ 45 bn
  - Reserve tranche - \$ 18 bn
  - Special drawing rights - \$ 5 bn.
- India is the fourth largest foreign reserves holder in the world after China, Japan and Switzerland.

### What are Forex Reserves?

Forex reserves are foreign currency assets held by the central banks of countries.

### Significance:

- Forex reserve helps countries overcome economic instability
- It helps maintain stability of domestic currency
- It calms investors in times of wars or unrest

### Purpose of Forex reserve:

- To make international payments
- Hedge against exchange rate risks.
  - Hedging means strategy used by individuals or businesses to protect themselves from potential losses that could arise due to fluctuations in exchange rates

## 5.4 Trade settlement system

### Why in the news?

Recently, the SEBI chairman said that a one hour trade settlement system will be launched.

### Key details:

- **India follows the T+1 trade settlement system.**
- Settlement is a two way process which involves the transfer of funds and securities on the settlement date.
- T+1 trade settlement is two way trade related settlements should be completed within **one day**.
- **India and China are the only two countries** that follow the T+1 trade settlement system.
- T+1 is being implemented despite opposition from foreign investors.
- Other countries are still following the **T+3 trade settlement system**.

### About T+1 trade settlement system:

- The T+1 settlement cycle means that trade-related settlements must be done within a day, or 24 hours, of the completion of a transaction.
  - For example, under T+1, if a customer bought shares on Wednesday, they would be credited to the customer's demat account on Thursday.
  - T+1 is different from T+2, where they will be settled on Friday.
- Until 2001, stock markets had a weekly settlement system. The markets then moved to a rolling settlement system of T+3, and then to T+2 in 2003.
- The United States, United Kingdom and Eurozone markets are yet to move to the T+1 system.

### Benefits:

- If an investor sells a share, she will get the money within a day, and the buyer will get the shares in her demat account also within a day.

## 5.5 White label ATM

### Why in the news?

- Recently, the former General Manager of Reserve Bank of India said that more White label ATMs should be established in rural areas.

### Key details:

- White label ATMs are a type of ATMs **setup, owned and managed by the private players or non bank entities**.
- Private players or non bank entities are authorized under the **Payment and settlement systems act 2007** by the RBI to set up white label ATMs.

- These types of ATMs provide various banking services such as **account information, cash deposit, pin change, request for cheque book etc.**

#### Other type of ATMs:

- **Pink label ATMs:** Women only can use these ATMs.
- **Green label ATMs:** ATMs used for **agriculture** related purposes
- **Yellow label ATMs:** ATMs used for **e-commerce** transaction.

## 5.6 Angel Tax

#### Why in the news?

Recently, the Indian government has made **changes in the angel tax provisions** introduced in the 2023 -24 budget, specifically related to **investments in startups by non-resident investors at a premium over their fair market value.**

- These changes are aimed at providing relief to prospective foreign investors in startups and simplifying the valuation process.

#### Key points from the news:

- **Five new alternative valuation methods** were introduced for valuing equity shares of the unlisted startup company.
  - Note: These five methods are **only available to non resident investors.**
  - Earlier, only two methods were used to know the value of shares.
- **10% deviance tolerance limit** was provided from the accepted share valuations.

#### What is Angel tax?

- Angel tax is levied when an unlisted company **issues shares to an investor at a price higher than its fair market value.**
- Earlier, it was imposed only on investments made by a resident investor.
- However the **Finance Act 2023** proposed to **extend angel tax** even to **non-resident investors** from April 1, 2024.
- Current value of the angel tax is **30.6%.**

#### Purpose:

- 10% deviation on preference shares will increase the inflow of foreign capitals.
- To ensure the fair value calculations are based on international standards.

**Unlisted Company:** A company not listed on any stock exchanges and owned by private investors is known as an unlisted company.

- An unlisted company cannot raise capital from the general public and usually depends on the owners for all its capital requirements.
- On the other hand, an unlisted company benefits from the ownership structure which facilitates easy decision-making.

**Fair Market Value:** Fair market value (FMV) is the price a product would sell for on the open market assuming that both buyer and seller are reasonably knowledgeable about the asset, are behaving in their own best interests, are free of undue pressure, and are given a reasonable time period for completing the transaction.

## 5.7 RoDTEP Scheme

#### Why in the news?

Recently, the government has extended support to outbound shipments by stretching the applicability of the **Remission of Duties and**

**Taxes on Exported Products (RoDTEP) scheme** for nine more months till June 30, 2024.

### Key points

- Export incentive scheme provides a mechanism to reimburse taxes, duties and levies (at the central, State and local level) that are incurred by exporters in the production and distribution process and are not refunded under any other mechanism.

### About RoDTEP:

- Introduced by the Government of India by making amendments in the **Foreign Trade Policy 2015-20** in 2021.
- The RoDTEP scheme has been made **effective for the exports from 1st January 2021**.
- Provides for **rebate of all hidden Central, State, and Local duties/taxes/levies on the goods exported** which have not been refunded under any other existing scheme.
- **WTO compliant Scheme** and follows the global principle that the taxes/duties should not be exported; they should be either exempted or remitted to exporters, to make the goods competitive in the global market.

### Purpose

- **Objective:** To **neutralize** the taxes and duties suffered on exported goods which are otherwise not credited or remitted or refunded in any manner and remain embedded in the export goods.
- The scheme intends to **compensate** the duties/taxes/levies at the Central, State and Local level borne on the exported product **including prior stage cumulative indirect taxes** on goods and services used in the production and distribution of the exported product.

## 5.8 Economic Freedom Index

### Why in the news?

India slips to 87th rank in the recently released Economic freedom index.

### Key details:

- It is published **annually** by **Canada's Fraser Institute** in conjunction with New Delhi-based think tank Centre For Civil Society.
- India's rating is **6.62 out of 10**.
- India reported a marginal **increase in the size of government (7.64 from 7.57)** and **regulation of credit, labor and business (5.98 from 5.96)**.
- India's score **fell slightly** in the **legal system and property rights (5.29 from 5.3)** and **freedom to trade internationally (6.19 from 6.27)**.
- A score closer to 10 indicates a higher level of economic freedom.
- **Top 3 countries: Singapore > Hong Kong > Switzerland.**
- **Venezuela** is the **lowest** ranked country.

## 5.9 OIML certificate

### Why in the news?

Recently, India has been given the power to issue an OIML (**International Organisation of Legal Metrology**) certificate.

### Key details:

- India is the **13th country** so far to have been given this power.
- The **Ministry Of Consumer affairs** will issue these certificates to the manufacturers.

- It is a single certificate accepted worldwide.
- **Benefits:**
  - Ease of doing in exports
  - Foreign exchange earnings
  - Employment creation

### About International Organisation of Legal Metrology:

- **About:** OIML is an international standard-setting body and develops model regulations, standards and related documents for use by legal metrology authorities and industry.
- **Year:** It was established in 1955
- **Headquarters:** Paris, France
- India is a member country.
  - It joined in 1956 and signed the metric convention

## 5.10 Indian Bureau of Mines

### Why in the news?

According to the recent report of Indian Bureau of Mines, India's index of mineral production of the mining and quarrying sector was at 111.9 and mineral production had to be increased by 10.7% in July 2023.

### About Indian Bureau of Mines:

- The Indian Bureau of Mines (IBM) established in **1948**, is a multi-disciplinary government organization under the **Department of Mines, Ministry of Mines.**
- Began as a purely advisory body and emerged into a premier national

organization involved deeply into the various aspects of the mineral industry.

### • Functions:

- Promoting conservation of mineral resources by way of inspection of mines, geological studies, scrutiny and approval of mining plans and mining schemes,
- Conducting environmental studies and environment related activities,
- Evolving technologies for upgradation of low grade ores and identifying avenues for their utilization,
- Preparation of feasibility reports for mining and beneficiation projects,
- Preparation of minerals maps and National Mineral Inventory of minerals resources;
- Providing technical consultancy services to the mineral industry
- Functioning as a data bank for mines and minerals, and preparing technical and statistical publications.

### • Head: **Controller General**

- IBM has **six technical divisions** with its **headquarters at Nagpur.**
- There is a **Modern Mineral Processing Laboratory and Pilot Plant** established with the assistance of the United Nations Development Programme at **Nagpur.**
- IBM has 4 Zonal Offices, 13 Regional Offices, 2 Regional Ore Dressing Laboratories and Pilot Plants spread over the Country.

## 6. AGRICULTURE

## 6.1 Minor irrigation census

### Why in the news?

- Recently, the minor irrigation census was released by the government.

### Key details from the census:



- 76% of the groundwater extraction uses electricity as its source.

#### • Dug wells or ponds

- Draw water from maximum 15m depth.
- Number declined from 87 lakh to 82 lakh.

#### • Shallow tube wells

- Draw water up to 35m depth.
- Number declined from 59 lakh to 55 lakh.

#### • Medium sized wells

- Draw water from up to 70m depth.
- Number grew from 31 lakh to 43 lakh.

#### • Deep wells

- Draw water beyond 70m
- Numbers rose from 26 lakh to 37 lakh.

#### • Statewise:

- Uttar Pradesh > Maharashtra > Madhya Pradesh > Tamil Nadu

## Major reasons of the electrification of groundwater:

- Subsidies to purchase tube wells
- Free electricity to farmers.

## Minor irrigation scheme:

- A minor irrigation scheme is a type of irrigation project that uses surface water or groundwater to irrigate a culturable command area (CCA) of up to 2,000 hectares.
- 96% of the minor irrigation schemes use groundwater while 4% use surface water.

## About minor irrigation census:

- It is launched by the Ministry of Jal Sakthi.
- The latest is the sixth census.

## 6.2 Cannabis cultivation

### Why in the news?

- Recently, the Himachal Pradesh government has taken steps to legalize cannabis cultivation in the state.

### Key details:



- A legal committee has recommended cannabis cultivation for **non narcotic use**.
- It is also known as **hemp** by its botanical name.

- **The Narcotic drugs and Psychotropic substances act imposes a ban on extracting the resin and flowers from the plant.**
- **But the law allows the legal cultivation of cannabis for medicinal and scientific purposes.**
- Section 10 of the act empowers **states to make rules** for the cultivation of cannabis.
- In 2017, **Uttarakhand became the first state** in the country to legalize cannabis cultivation.
- The National Policy on Narcotic Drugs and Psychotropic Substances recognises **cannabis as a source of biomass, fiber and high-value oil.**

- South India total tea exports - 37 mn kg, the tea exports declined by 2%.
- India exports almost 17% of the total production.



#### About tea production in India:

- India is the second largest tea producer
- Northern india - 83% of total production
- Southern India - 17% of total production.
- Biggest producers- **Assam > West Bengal.**
- Only 17% of the total tea production is exported , around 83% is consumed domestically.
- Assam, Nilgiri and Darjeeling tea are considered the best in the world.
- **Darjeeling tea got GI tag recognition.**

#### Climate conditions:

- It is a tropical and subtropical plant.
- It grows well in hot and humid conditions
- Temperature: Ideal temperature is between 20-30 degree Celsius.
- Rainfall: 150 - 300 mm rainfall and well distributed throughout the year.

### 6.3 Fertilizer consumption

#### Why in the news?

Recently, the Russian companies have ceased offering fertilizer such as diammonium phosphate (DAP) to India at discounted prices.

#### Key details:

- The decision was taken due to tightening global supplies of fertilizers.
- In 2022-23, **Russia became the largest Fertilizer supplier** to India followed by **China.**

### 6.4 Tea production

#### Why in the news?

- Recently, India's tea exports declined during the January - June period.

#### Key details:

- North India total tea export - 59 mn kg, the tea exports increased

### 6.5 Rubber Board

## Why in the news?

- Recently, the Rubber board decided to increase the area under cultivation of rubber in northeastern India.

## Key details:



- Total area under rubber cultivation is 8.5 lakh hectares.
  - 5 lakh ha only in Kerala and southern part of Tamil Nadu.
  - 1 lakh ha in Tripura.
- New project was started by the rubber board in 2021 to increase the rubber cultivation in the northeast.
- Except Sikkim, all the northeastern states were selected under this project.
- Coverage of 4 lakh ha in the northeast under rubber cultivation is an aim of this project.
- **Nodal ministry:** Ministry of Commerce and industries
- It is a **statutory body** established under the **Rubber act 1947**.
- The board has a chairman, appointed by the Central government.
- **Functions:**
  - Technical advice to rubber growers

- Rubber related research
- Improving the marketing of rubber
- Ensure better working conditions of rubber

## Note:

- GM rubber was first cultivated in Assam
- Rubber was introduced by the British in 1873.

## Rubber:

**Soil:** Deep and laterite soil with PH 4.5 to 6 acidic level.

- Regions prone to heavy winds should be avoided

**Rainfall:** 2500 to 4000 mm

**Temperature:** The range should be 25 to 34 degree Celsius

**Humidity:** 80% relative humidity is ideal for the cultivation

**India production:** Kerala > Tamil Nadu > Tripura.

**World production:** Thailand > Indonesia > Malaysia.

- Thailand accounts for 36% of the total rubber production.

## Statistics Consultative Panel of the Rubber Board

- India now ranked sixth in Natural Rubber(NR) production, accounting for 5.8% of the global NR production during December 2022.
- The country also remained the second largest consumer of NR, accounting for 9.3% of global consumption.
- The automobile tyre segment consumed 70.3% of the total NR consumed in the country.

## 6.6 Millet production

### Why in the news?

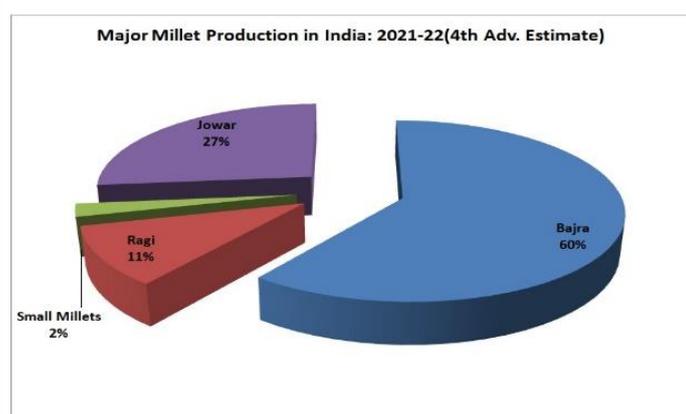
Recently, NABARD business line millet conclave was held in Hyderabad.

### Key details:

- NABARD advocated for the exemption of millets from GST.
- Exemption will boost accessibility and affordability of the millets.

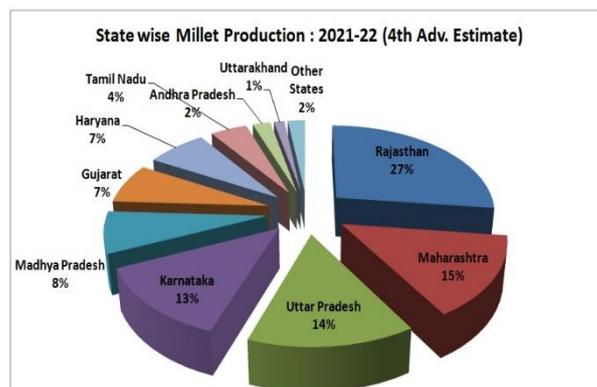
### About Millets:

**About:** Indian millets are a group of **nutritiously rich, drought tolerant** and mostly grown in the **arid and semi-arid regions** of India.



### Millet production in India:

- India is the **largest producer** of millet.
- India accounts for **41% of the global millet production**.
- India has a **target to produce 40 mn tonnes of millets by 2030**.
- Current production of the millets is **17 mn tonnes**.
- Six states namely **Rajasthan, Karnataka, Maharashtra, Uttar Pradesh, Haryana and Gujarat** account for more than 83 per cent share in total millet production.



- **Rajasthan contributes 28.61 per cent** of the total millet production in India.
- **Types of millets produced in India:**
  - Bajra, Jowar, Ragi, Foxtail, Kodo, Barnyard, little millets and pseudo millets.
- **Jowar:** Maharashtra > Karnataka > Rajasthan.
- **Bajra:** Rajasthan > Uttar Pradesh > Haryana.
- **Ragi:** Karnataka > Tamil Nadu > Uttarakhand.

### Millet exports:

- India is among the top 5 exporters of millets in world- APEDA
- As of 2023, India's millet export value is \$75 million.

### Millet production in world level:

- Millets are majorly produced in Asia and Africa.
- **Top production:** India > Niger > China

### Benefits:

- Millet cultivation produces a **low carbon footprint**.
- Millets are found to be helpful with the reduction of weight, BMI, and high blood pressure.

- They are a good source of minerals like **iron, zinc, and calcium**.
- Millets are **gluten-free** and can be consumed by celiac disease patients.
- Millet has a beneficial effect on the management and **prevention of hyperlipidemia and risk of CVD**.
- Millets have a **low Glycaemic Index (GI)** and are also associated with the prevention of diabetes.
- Millet is a **drought-tolerant crop** that can be grown in dry, arid climates.

## 6.7 Seed Rolling Plan (SRP)

### Why in the news?

Recently the Union government held an interaction with the States on the preparedness for the upcoming rabi crop season against the background of a 5% decrease in monsoon rainfall this year.

- The Union Agriculture Secretary said that 800 climate-resistant seed varieties were available in the country and the States must place these seeds in the seed chain as part of a **seed rolling plan**.

### What is Seed Rolling Plan (SRP)

- Preparation of Seed Rolling Plan is basically an exercise by which the **states assess the seed requirement** in different crops grown in and its suitable varieties (for Kharif and Rabi seasons) as per prescribed seed rate, the area under crop/variety, its seed replacement rate three years in advance.
- All states/UTs are requested to prepare a **dynamic seed rolling plan** for the concerned state or UT based on the direction given by the Ministry of Agriculture and Farmers welfare.

### Purpose

- To ensure timely availability of sufficient quality of certified seed to the farmers for ensuring food security of the country
- To maintain seed chain
- To achieve targets of production and productivity
- To achieve targeted Seed Replacement Rate (SRR)
  - To include recommended new varieties of field crops in seed chain
  - To delete old and undesirable varieties from seed chain

## 7. ENVIRONMENT

### 7.1 Green crackers

### Why in the news?

Recently, the Supreme Court said that it would examine how the green crackers regulations are enforced.

### About Green crackers:

- Green crackers are dubbed as 'eco-friendly' crackers and are known to cause **less air**

**and noise pollution as compared to traditional firecrackers.**

- It was designed by **National Environmental and Engineering Research Institute (NEERI)**.
- **Petroleum and Explosives Safety Organisation (PESO)** is tasked with **certifying that the crackers are made without arsenic, mercury, and barium**, and are not loud beyond a certain threshold.

- A **CSIR license is mandatory to produce green crackers.**

#### Features of the green crackers:

- It doesn't contain barium nitrate
- Uses Potassium and aluminum nitrates which contain less carbon content.
- Produces three times less sounds than normal crackers.

#### Types:

##### 1. SWAS - Safe Water Releaser:

- No use of sulfur nitrate
- Releases water vapor
- Reduced particulate matter emission by 30%.

##### 2. STAR – Safe Thermite Cracker:

- No use of sulfur or potassium nitrate
- Low sound level

##### 3. SAFAL – Safe Minimal Aluminum:

- Replaces aluminum content with magnesium
- Lower level of particulate matter emission.

## 7.2 Flex fuel technology

#### Why in the news?

- Recently, the Union minister of Road Transport said that the flex fuel technology would be promoted.

#### What is flex fuel technology?

- Flex fuel vehicle is a vehicle that has an internal combustion engine which works in one or more fuels.
  - **Eg: Petrol and ethanol blended petrol**
- **Advantages:**

- Reduces the carbon emissions
- Reduce the oil imports

#### Disadvantages:

- 4% - 6% fuel efficiency reduction.
- Sources of ethanol - Mostly water intensive crops.

#### Hybrid vehicle:

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

## 7.3 Heat index

#### Why in the news?

- Recently, Iran recorded a scorching heat index of 70 degree Celsius in August.

#### About Heat index:

- Heat index, also known as apparent temperature, is a measure of how the temperature feels to humans.

#### Factors determines Heat index:

- Relative humidity
- Air temperature

#### Humidity is higher during heat wave times.

- Heat index is also higher than the normal temperature deputing heat waves times.
  - Hot air can hold more moisture than the cold air.
- If humidity is high then the heat index will also be high.

- A **heat index value of 67°C or above can be extremely dangerous** for people and animals.

## 7.4 Assessment report on Invasive Alien Species (IAS)

### Why in the news?

- Recently, the Assessment report on invasive alien species and their control was released.

### INVASIVE SPECIES

- **Water hyacinth — world's most widespread invasive alien species on land**
- **Lantana, a flowering shrub, second-most widespread globally**
- **Black rat is third-most widespread alien species**
- **Brown rat and house mouse are also widespread invasive alien species**

### Key details:

- It is released by the Intergovernmental Platform on Biodiversity and Ecosystem Services.
- So far 37,000 alien species have been introduced.
- **Major drivers affect biodiversity:**
  - Introduction of invasive alien species
  - Land and sea use change
  - Climate change
  - Pollution
  - Exploitation of organisms.

### About Intergovernmental Platform on Biodiversity and Ecosystem Services:

- It was established to **improve the interface between science and policy on issues of biodiversity and ecosystem services.**
- **Year:** 2012
- **Headquarters:** Bonn, Germany.
- It is functioning under the **United Nations Environment Programme**, even though it is not a UN body.
- **Members:** 98 members, India is a founding member.

## 7.5 Amazon Rainforest

### Why in the news?

Recent report states that 5 lakh people in Amazon are to be hit by severe drought by year end and already many are struggling to access supplies such as food and water in Amazon rainforest.



### About the Amazon Rainforest and River?

- The Amazon is the **world's biggest rainforest** occupying drainage of the Amazon River Basin covering an area of around 6.9 million square km.
- The basin covers some **40 percent** of the South American continent and includes parts of **eight** South American countries: **Brazil, Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana, and Suriname, as well as French Guiana, a department of France.**
- The basin is drained by the **Amazon River**, the **world's largest river in terms of discharge**, and the second longest river in the world after the Nile.
- **Significance:**
  - Home to 10% of all the wildlife species we know about
  - Help stabilize the climate—150-200 billion tons of carbon is stored in the Amazon rainforest.
  - Useful for food, water and medicines for indigenous population.

### Reason for drought:

- **Climatic factors:** El Nino Southern Oscillation having a significant impact leading to reduced rainfall in the region.
- **Deforestation:** Felling of trees for several developmental projects and resources affects the amount of rainfall the forest receives consequently causing severe drought.
- **Loss of Resilience:** There are signs of a loss of resilience in more than 75% of the forest, with trees taking longer to recover from the effects of droughts largely driven by climate change as well as human impacts such as deforestation and fires.

- **Increased forest fire:** Reduces the tree cover in the region thereby leading to reduced rainfall.

## 7.6 Mukurthi National Park

### Why in the news?

- Recently, the first department conducted combined operations in the Mukurthi National Park.

### What is National Park?

- An area, **notified by the government**, by reason of its ecological, faunal, floral, geomorphological, or zoological association or importance, needed for the **purpose of protecting & propagating or developing wildlife therein or its environment.**
- An area, whether within a sanctuary or not, can be notified by the **state government** to be constituted as a National Park.
- **No human activity is permitted** inside the national park **except for the ones permitted by the Chief Wildlife Warden** of the state under the conditions given in CHAPTER IV, WPA 1972.
- So far **106 national parks** were notified under the Wildlife protection act 1972.
- **Madhya Pradesh has the highest number of national parks** accounting for 11.
- **Hemis national park** in Ladakh is the **largest** national park in India.

### About Mukurthi National park:

- It is located in the **western corner of the Nilgiris plateau** in Tamil Nadu.
- The park was created mainly to protect its **keystone species, the Nilgiri tahr.**

- **Nilgiri Tahr is the state animal of Tamil Nadu.**



is also home to Royal Bengal tiger and Asian elephant.

- **Forest type:** This park comprises mainly shrubland and grassland with **shola forest** in high altitude areas.
- It is a part of **Nilgiri biosphere reserve**.
- It also acts as a **border between Tamil Nadu and Kerala**.
- **Bhavani river**, a tributary of Kaveri river flows through this park.
- **Toda tribes** mainly live inside this national park

- One of its boundaries runs along the **border of Rajasthan**.
- It was notified in **1974**.
- **River Chambal** passes through theirs and cuts it in two parts.
- It mainly comprises **dry deciduous forest ecoregion**.
- Predominant species are **Chinkara, Nilgai and sambar**.



### What is a Wildlife Sanctuary?

- **Authority:** Any area excluding any reserve forest or the territorial waters can be notified by the **State Government** to constitute as a sanctuary.
- **Parameters:** Area is of adequate ecological, faunal, floral, geomorphological, natural. or zoological significance.

- In most cases, it is reserved exclusively for wildlife use, which includes animals, reptiles, insects, birds, etc. wild animals, especially those in danger of extinction and the rare ones, so that they can live in peace for a lifetime and keep their population viable.

- **Purpose:** Protect, propagate or develop wildlife or its environment.
- **Some restricted human activities** are allowed inside the Sanctuary area details of which are given in CHAPTER IV, WPA 1972.

## 7.7 Gandhi Sagar Wildlife Sanctuary

### Why in the news?

- Recently, the Cheetah expert committee recommended that the cheetahs can be relocated to Gandhi Sagar Wildlife Sanctuary.

### About Gandhi Sagar wildlife sanctuary:

- It is located in the **northern boundary of Madhya Pradesh**.
- It comprises two districts **Mandsaur and Neemuch**.

- There are **567 existing wildlife sanctuaries** in India covering an area of 125564.86 km<sup>2</sup>.

## 7.8 Segur elephant corridor

### Why in the news?

- Recently, the Supreme Court appointed expert committee ordered the removal of 12 illegal resorts in the Segur elephant corridor.



- 

### Segur elephant corridor:

- It is located in the tri junction part of Nilgiri in Tamilnadu.
- It was the **first elephant corridor notified in TamilNadu** in 2010.
- It creates a pathway for the **migration of elephants from Nilgiri biosphere reserves to Eastern ghats.**

### About Elephant corridor:

- Elephant Corridors are land strips that enable the movement of elephants between two or more viable habitat patches.

- As per the Elephant corridors in India report, there are **150 corridors in 15 states.**
- **West Bengal** has the highest number of elephant corridors (26) in India.
- **Region wise:**
  - East central region- 52
  - Northeast region - 48
  - Southern region- 32
  - Northern region - 18.
- There are **six transnational elephant corridors** between India and Nepal.
- Elephant corridors are notified under the **Environment protection act, 1986.**
- **State governments notifies the elephant corridors.**

## 7.9 Nilgiri Tahr

### Why in the News?

- Recently, Tamil Nadu, Kerala joined to count endangered Nilgiri Tahr.

### About:

- Southern India's only Mountain ungulate [herbivorous mammals adapted to living in mountain and alpine environment].
- It is the **State animal of Tamil Nadu.**
- Locally Known as **Varaiaadu.**



### Habitat:

- **Endemic** and fragmented in Western Ghats in **Tamil Nadu and Kerala**
- Nilgiris - North, Kanyakumari hills- South.

### Conservation status:

- IUCN status: Endangered.
- Schedule 1 of the Wildlife (Protection) Act, 1972

### Conservation Efforts:

- **Project Nilgiri Tahr - Tamil Nadu**
  - To be implemented from 2022 to 2027.
  - To develop a better understanding of the Nilgiri Tahr population through surveys and radio telemetry studies.

- Reintroduce the Tahrs to their historical habitat.
- Address proximate threats.
- Increase public awareness of the species.

### Threats:

- Habitat loss.
- Anthropogenic pressures- Poaching.
- Vulnerable to local extinction.
- Climate change.
- Invasive plants: Wattles, Pines, Eucalyptus in grasslands.

## 8. SCIENCE AND TECHNOLOGY

### 8.1 Aditya L1 mission

#### Why in the news?

- Recently, ISRO plans to launch the Aditya L1 mission.

#### Key details of the Aditya L1 mission:

- It is the first solar mission of India.
- Launch year: 2023
- Launch vehicle: Polar Satellite Launch Vehicle.
- It will carry seven payloads to study the sun and its surroundings.
- It will be placed in the Lagrange 1 point.
- **Mission life : 5 years**

#### Science objectives:

- To study the chromosphere and corona of the sun

#### Lagrange 1 point:

- Lagrange Point 1, often abbreviated as L1, is one of the five Lagrange points in the Earth-Sun system where the gravitational forces of the two bodies balance the centrifugal force felt by a smaller object, allowing that object to effectively "hover" in a stable position relative to the two larger bodies.
- To study the coronal mass ejection in the sun
  - A coronal mass ejection (CME) is a significant ejection of magnetic field and accompanying plasma mass from the Sun's corona into the heliosphere.

- To study coronal heating of the sun
- To study the solar winds.

#### Other solar mission:

- Parker solar probe - NASA
- Helios 2 solar probe - NASA & Germany
- Solar orbiter- ESA & NASA

## 8.2 Asteroid Sample: Osiris-Rex

#### Why in the News?

Recently NASA's first asteroid samples fetched from deep space parachuted into the Utah desert to cap a seven-year journey.

#### Key Points from the News:

- In a flyby of earth, the Osiris-Rex spacecraft released the sample capsule from one lakh kilometers out.
- Scientists estimate the capsule holds at least a cup of rubble from the **carbon-rich asteroid** known as **Bennu**.
- **Japan, the only other country to bring back asteroid samples**, gathered about a teaspoon in a pair of asteroid missions.
- Bennu Asteroid:
  - Orbits the sun (with a period of 436 days) such that it comes relatively close to the earth once every six years or so.
  - Carbonaceous asteroid.

#### About Osiris- Rex Spacecraft:

- The Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer (OSIRIS-REx).
- The first U.S. mission to collect a sample from a **near- Earth Asteroid Bennu** and bring it back to Earth.

- Launched in **2016** by Atlas V 411 launch vehicle.
- An extended mission will take the spacecraft into orbit around near-Earth asteroid Apophis in 2029.
- Third major planetary science mission for NASA's New Frontiers Program (after New Horizons launched in 2006- to explore the Kuiper belt and Juno launched in 2011- Jupiter mission).
- The spacecraft contains 6 Scientific Instruments to explore the asteroid.

#### Significance of studying Asteroid Bennu:

- Bennu could smash into the earth between 2178 and 2290, studying it could inform ways to prevent collision.
- Commercial interests: Opportunities for space-mining and impact mitigation technologies.
- To find out where life came from and what its fate could be.
  - Increased understanding of planet formation, the origin of organics and water that led to life on Earth.

## 8.3 Nour-3

#### Why in the news?

- Recently, Iran launched its imaging satellite called Nour-3.

#### About Nour- 3:

- **Country: Iran** launched its imaging satellite.
- It was placed **above 450 km** from the earth surface.
- The **third satellite in the nour series** was launched by the three stage gased or messenger carrier.

- It is mainly used for **military reconnaissance purposes**.

## 8.4 Swavlamban 2.0

### Why in the news?

The Indian Navy is about to release its **updated indigenisation roadmap**, named '**Swavlamban 2.0**', which will provide an update on what has been achieved so far and the way ahead.

### Key points from the news:

- In 2022, the Indian Navy had committed to developing at least 75 technologies as part of the Azadi ka Amrit Mahotsav.
- The promises have been fully met, and even surpassed in some cases, primarily through the **SPRINT initiative** [Supporting Pole-Vaulting in R&D through Innovation for Defence Excellence], the **Naval Innovation and Indigenisation Organisation** and the **Technology Development Acceleration Cell**.
- The Swavlamban road map aims to **collaborate, coordinate, and develop new technologies in partnership**.

### About Swavlamban 2.0

- Swavlamban is the **Naval Innovation & Indigenisation Organisation's (NIIO) annual seminar**, and the upcoming Swavlamban 2023 is the second edition in the series..
- This event aims **to engage the Indian industry and academia** in achieving '**Self-reliance in Defence Sector**.'
- An updated Indian Navy indigenisation roadmap: Swavlamban 2.0 focussing on advancing the Indian Navy is to be released.

### Purpose:

- To build world-class standard technologies and products but at much economical cost.

### NIIO:

- In **August 2020**, India embarked on a remarkable journey towards enhancing its naval capabilities by creating the NIIO.
- Headed by the Vice Chief of Naval Staff
- **Mission:** To fuse innovation and indigenisation to bring cutting-edge technology to the Indian Navy.
- **Purpose:**
  - To accelerate the integration of disruptive combat technology into the Navy, thereby enhancing its warfighting capabilities.
  - Foster seamless collaboration across the Navy, the Ministry of Defence (MoD), academia, and industry.
  - Encourages naval personnel to contribute their innovative ideas.

### SPRINT initiative:

- As India celebrated the 75th year of independence during the '**Azadi ka Amrit Mahotsav**,' the Indian Navy proposed an initiative – to develop and induct **at least 75 new indigenous technologies/products**.
- The **Defence Innovation Organisation (DIO) and NIIO** joined forces for a collaborative project named SPRINT (Supporting Pole-Vaulting in R&D through iDEX, NIIO, and TDAC).
- The SPRINT initiative was unveiled during the maiden **NIIO Seminar 'Swavlamban 2022'** held on July 18-19, 2022, in New Delhi.

Prime Minister Narendra Modi released 75 problem statements for Indian industries as part of iDEX(SPRINT),

## 8.5 DNA Nano ball strategy

### Why in the news?

- Recently, a new platform using nucleic acids-based diagnostics showcases a way to detect pathogens more quickly in the field.

### Key points from news:

- Through loop-mediated isothermal amplification technology, the approach creates nanoballs out of pathogens' DNA that can then be identified through electrical signaling.
- The design does not need laboratory techniques to support diagnosis.

### What is DNA Nanoball strategy or sequencing?

- DNA nanoball sequencing is a high throughput sequencing technology that is used to determine the entire genomic sequence of an organism.
- **DNA nanoballs.**
  - The method uses rolling circle replication to amplify small fragments of genomic DNA into DNA nanoballs.
  - Each DNA fragment is combined with complementary adapter sequences and undergoes a series of enzymatic reactions to form a spherical nanoball.
- Fluorescent nucleotides bind to complementary nucleotides and are then polymerized to anchor sequences bound to known sequences on the DNA template.
- The base order is determined via the fluorescence of the bound nucleotides.

- This DNA sequencing method allows large numbers of DNA nanoballs to be sequenced per run at lower reagent costs compared to other next generation sequencing platforms.

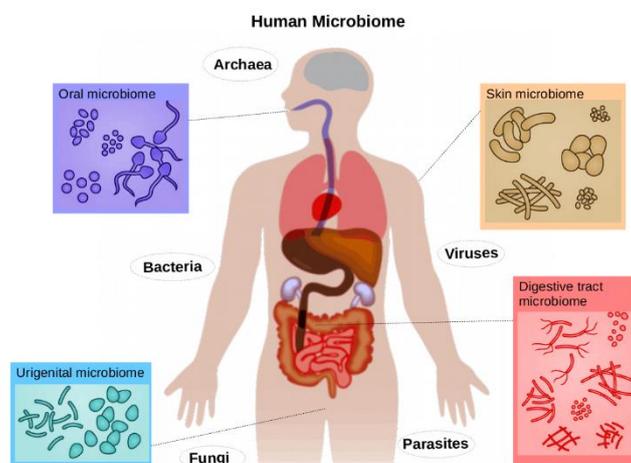
## 8.6 Microbiome research

### Why in the news?

According to the recent report, in the last two decades, microbiome research has gone from a 'niche subject area' to 'one of the hottest topics in all of science'.

### Microbiome:

- The microbiome is an assemblage of a complex community of **microbes (bacteria, archaea, fungi, algae, protists, and viruses)** and **their biomolecules** occupying a **well-defined habitat in or on a living or non-living object.**



### Human Microbiome:

- In humans, the term is often used to describe the microorganisms that **live in or on a particular part of the body**, such as the skin or gastrointestinal tract.
- These organisms play a key role in many aspects of host physiology, ranging from **metabolism** of complex indigestible carbohydrates and fats to producing

essential vitamins, **maintaining immune systems** etc.

- These groups of microorganisms are **dynamic** and change in response to a host of environmental factors, such as exercise, diet, medication and other exposures.

### What is Microbiome research?

- Microbiome research focuses on the **behavior, interactions, and function of microbial communities within a specified environment.**
- Research on the human microbiome has thrown light on various aspects:
  - How different parts of the human body are occupied by characteristic microbial communities,
  - How various factors contribute in shaping the composition of the microbiome, including the genetics, dietary habits, age, geographic location and ethnicity.

### Application of Microbiome research:

- **Human Health and Medicine:**
  - Human microbiome research aided by advances in gene-sequencing technologies and high-end bioinformatic analysis is reshaping our **understanding of the connections between human health, diseases, and microbiomes.**
  - The **gut microbiome** is believed to have a big impact on immune modulation and metabolic activities in the human body.
  - Investigations of the dynamic cross-talk between the gut microbiome and the host environment have revealed potential connections to **Autism Spectrum Disorder** symptoms.

- **Precision medicine:** Understanding an individual's unique microbiome can help tailor personalized medical treatments and predict responses to drugs.

- **Agriculture:**

- **The crop microbiome** helps plants acquire nutrients, growth, resilience against phytopathogens, and tolerance to abiotic stresses, such as heat, drought, and salinity.
- Microbes are omnipresent (soil, water, and air) and their close association with plants would help to accomplish **sustainable agriculture goals.**
- **Livestock health:** Understanding the gut microbiomes of livestock can improve animal health, growth, and the efficiency of meat and dairy production.

- **Environment:**

- Microbiome research can help identify microorganisms capable of breaking down pollutants, cleanup contaminated environments, biological treatment of wastewater- **Bioremediation.**
- Provides insight into **ecosystem functioning-** nutrient cycling, ecosystem health.

## 8.7 Monoclonal Antibodies

### Why in the news?

Recently, India reached out to Australia to procure monoclonal antibody doses to combat the Nipah virus outbreak in Kerala.

### What are Monoclonal Antibodies?

- Monoclonal antibodies are **laboratory-made proteins that mimic the behavior of antibodies produced by the immune**

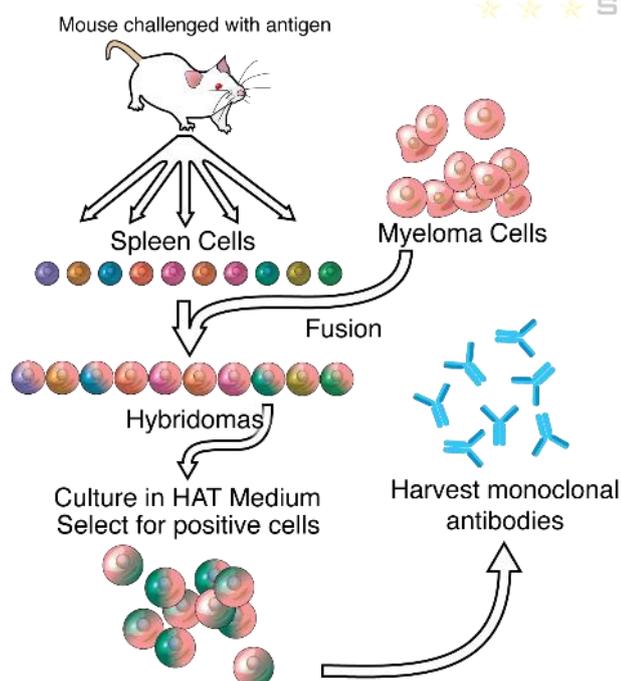
**system** to protect against diseases and foreign substances

- An antibody attaches itself to an antigen – a foreign substance, usually a disease-causing molecule – and helps the immune system eliminate it from the body.
- Monoclonal antibodies are **specifically designed to target certain antigens**.
- **Niels K. Jerne, Georges J.F. Köhler and César Milstein** were awarded the medicine Nobel Prize in 1984 for their work on “the principle for production of monoclonal antibodies”.

### Examples

- **m102.4** is a “potent, fully human” monoclonal antibody that neutralizes Hendra and Nipah viruses, both outside and inside of living organisms.
- **Rituximab** is a monoclonal antibody that binds to a protein called CD20 on B cells and some types of cancer cells, causing the immune system to kill them.

### How does it work?



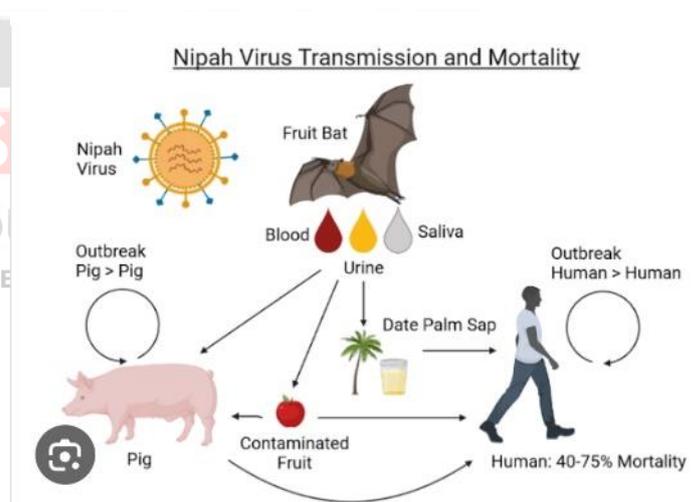
- Monoclonal antibodies are **specifically engineered and generated to target a disease**.
- They are meant to **attach themselves to the specific disease-causing antigen**.
  - An antigen is most likely to be a protein.
- The binding **prevented the protein from exercising its regular functions**, including its ability to infect other cells.
- Today, these antibodies are made using **recombinant DNA technology**.

## 8.8 Nipah virus

### Why in the news?

- Recently, 5 people died due to Nipah virus in Kerala.

### Key details:



**About:** It is a viral zoonotic disease, first identified in 1999 in Malaysia.

**Virus host:** Fruit bats of the Pteropodidae family are the natural host of Nipah virus.

**Fatality rate:** 40% to 75%.

**Transmission:** It is transmitted by following ways,

- Nipah virus can be transmitted to humans from animals (such as bats or pigs).

- So, it is a zoonotic disease.

- Contaminated foods
- Human-to-human transmission.

**Incubation period:** 4 to 14 days period.

**Infections:** Human infections range from asymptomatic infection to acute respiratory infection (mild, severe), and fatal encephalitis.

**Treatment:**

- There is no treatment or vaccine available for either people or animals.
- The primary treatment for humans is supportive care.

**Disease outbreak in India:** Kerala was the most affected state.

**Prevention:**

- Practice hand washing regularly with soap and water
- Avoid contact with sick bats or pigs
- Avoid areas where bats are known to roost
- Avoid eating or drinking products that could be contaminated by bats, such as raw date palm sap, raw fruit, or fruit that is found on the ground
- Avoid contact with the blood or body fluids of any person known to be infected with NiV

## 8.9 Dengue

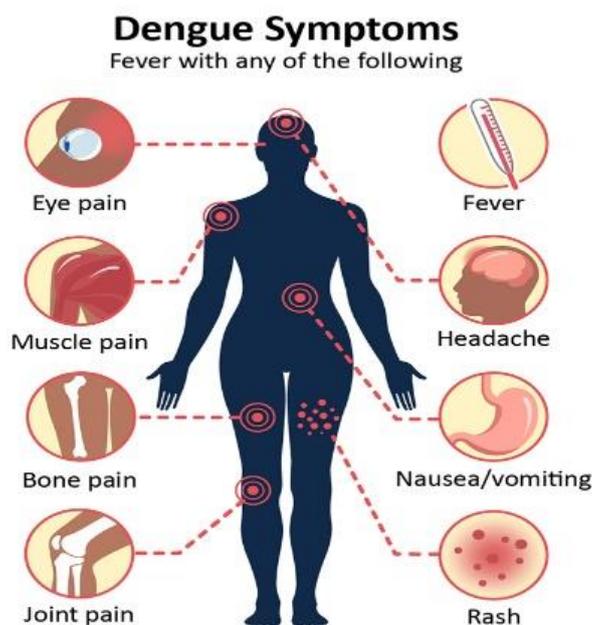
**Why in the news?**

- Recently, the **National Centre for Vector Borne Diseases Control** has issued a warning about the rising dengue cases in India.

**About Dengue:**

- Dengue is a **mosquito-borne viral disease** occurring in tropical and subtropical areas.
- In dengue, day **one to three** are called the **acute viremic phase**, while day **four to six** are the **critical phase** followed by recovery.

**Symptoms:**



**Cause:**

- Dengue fever is caused by any one of **four types of Aedes aegypti** mosquito.

**Spread:**

- You **can't get dengue fever** from being **around an infected person**.
- Instead, dengue fever is spread through **mosquito bites**.
- **Vertical transmission** (Mother to child in pregnant time) is **very low**.

**Prevention:** There is **no specific medicine** to treat dengue. Some measures to contain the spread of mosquitoes:

- Wear full-sleeved clothes,
- Use mosquito nets and repellants.

- Check for mosquito breeding sources once every week,
- Clear water stagnations
- Check the refrigerators trays.

## 8.10 Council of Scientific and Industrial Research (CSIR)

### Why in the news?

- Recently, at the Foundation Day celebrations of the **Council of Scientific and Industrial Research (CSIR)** in New Delhi, the ISRO chairman said that around **95% of the components used in the Indian rockets were made by Indian companies.**

### About Council of Scientific and Industrial Research:

- It is the **nodal research and development agency** in India.
- It was established in **1942** as an autonomous institution.
- It works under the **Ministry of Science and Technology**
- **Headquarters** : New Delhi
- **Composition:**
  - **Prime Minister of India** is the **ex officio president** of the institute.
  - The **Minister of state of science and technology** is the **vice president.**
  - Governing body is headed by the **director general.**
  - **15 member advisory committee** to provide administrative and technological support to the institution.
- Around **39 research institutes** are working under the CSIR.

### Awards:

- **Shanti Swarup Bhatnagar (SSB) Prize for Science and Technology** is named after the founder Director of the CSIR, the late Dr Shanti Swarup Bhatnagar.
- It was instituted in **1957** as the most coveted and revered prize in the field of science and technology in the country.

### Purpose:

- Technological innovations
- Commercialisation technology
- Technological support other research institutions
- Mainstreaming the technology for social development

### Functions:

- Coordination in scientific and industrial research
- Publication of scientific data and journals.
- Collection and dissemination of information on various pressing issues.
- Research support for the other institutions such as ISRO, DRDO etc.

## 8.11 Indian Council of Medical Research (ICMR)

### Why in the news?

- Recently, the ICMR called for research institutions to conduct studies on the effectiveness of immunization.

### About Indian Council of Medical Research (ICMR):

- It is India's **premier research institution** in the field of medicine.
- **Year:** It was established in **1913** as Indian Journal of Medical Research.

- In **1949**, it was renamed as Indian Council of Medical Research.
- **Headquarters:** New Delhi
- **Nodal Ministry:** Ministry of Health and Family Welfare
- **Composition:** It is headed by the **Director General**.
- **32 research institutions** function under the overall supervision of ICMR.

**Function:**

- Apex body in India for formulation, coordination and promotion of **biomedical research**.
- Conduct, **coordinate** and implement **medical research** for the benefit of the Society.
- **Translating medical innovations** into products/processes and introducing them into the public health system.

## 9. SECURITY

### 9.1 Frigate Mahendragiri

**Why in the news?**

- Recently, the seventh and last stealth frigate of Project 17A, Mahendragiri, was launched.

**About Mahendragiri:**

- It is a stealth frigate warship manufactured indigenously.
- Built by: Mazagon Dock shipbuilders Ltd.
- It is developed as part of Project 17A.

**Project 17A:**

- It was launched to construct a series of stealth guided-missile frigates.



- Year: 2019
- Nodal department: Indian Navy
- Over 75% of the equipment and systems used are sourced from indigenous firms, including Micro, Small, and Medium Enterprises (MSMEs).

• **Features:**

- Radar absorption coatings
- Undetectable capacity
- Reduction in infrared signals from the ship. ★

• **Seven ships:**

- Mahendragiri, Vindhyagiri, Nilagiri, Udayagiri, Taragiri, Himgiri and Dunagiri.

### 9.2 Aircraft Carrier

**Why in the News?**

Recently the Defence Procurement Board (DPB) discussed the Navy's proposal for acquiring a second Vikrant-like aircraft carrier. Only after the approval by DPB the proposal will be put for final approval by the Defence Acquisition Council (DAC).

## Key points from the News:

- The Project will see some modifications and upgrades to the design of the country's first Indigenous Aircraft Carrier (IAC) INS Vikrant, commissioned in September 2022.

## What is an Aircraft Carrier?

- It is a warship serving as seagoing airbase, equipped with a full-length flight deck and facilities for carrying, arming, deploying, and recovering aircraft.

## About INS Vikrant and INS Vikramaditya:



## INS Vikrant:

- Named in honor of her historic predecessor, India's first aircraft carrier, which played an important part in the war of 1971.
- Developed under **Project 71 Air Defence SHip (ADS)**
- In 2022, designation for the vessel had been changed from Air Defence Ship (ADS) to Indigenous Aircraft Carrier (IAC).
- Commissioned: September 2022.
- Specifications:
  - The 262-metre-long, 62-metre-wide displacing 44,800 tonnes, is powered by four General Electric LM2500 engines,

which give it a maximum speed of 28 knots and an endurance of 7,500 nautical miles.

- The ship uses an aircraft-operation mode known as Short Take Off But Arrested Recovery (STOBAR) equipped with a ski-jump for launching aircraft, and a set of three "arrestor wires" for their recovery onboard.

## INS Vikramaditya:

- Procured from Russia under a \$2.3-billion deal.
- Inducted: November 2013.
- It is a **modified Kiev- class aircraft carrier.**
- Specifications:
  - 44,500-tonne carrier which also employs the STOBAR mechanism
  - Aircraft components are MiG 29K, Kamov 31, Kamov 28, Seaking, ALH, Chetak.

## 9.3 Pinaka missile

## INS Vikrant:

## Why in the news?

- Recently, the army said that it wants to increase the Pinaka missile system supply from DRDO.

## About Pinaka missile system:

- It is a multi barrel rocket system, named after Lord Shiva's bow.
- It was designed by the **Defence Research and Development Organisation.**
- It can fire 12 rockets within 44 minutes.
- **Range:** Pinaka I and Pinaka II have a 40 km and 60 km range respectively.
  - Upgraded version has a range of 90 km, which is under development.

- It was used by India in the kargil war against Pakistan in 1999.
- The navigation system of the Guided Pinaka missile is also aided by the **Indian Regional Navigation Satellite System (IRNSS)**.
- **Armenia** has signed a deal with India to purchase the Pinaka missile system.

## 9.4 Dark patterns

### Why in the news?

- Recently, the Centre has sought public comments on the draft guidelines for prevention and regulation of “dark patterns” on the Internet, particularly in e-commerce platforms.

### SPOTTING DARK PATTERNS

#### ■ FALSE URGENCY

Falsely implying a sense of urgency to mislead a user into making an immediate purchase or taking an immediate action

#### ■ BASKET SNEAKING

Inclusion of additional items at the time of checkout without consent

#### ■ CONFIRM SHAMING

Creating fear, shame or guilt to nudge the user to purchase a product

#### ■ FORCED ACTION

Forcing a user into taking an action that would require them to buy additional good(s) or subscribe or sign up for an unrelated service, in order to get the the product originally intended

#### ■ SUBSCRIPTION TRAP

Making cancellation of a paid subscription impossible or complex and hiding the cancellation option, among others

#### ■ INTERFACE INTERFERENCE

Manipulating user interface in ways that highlights certain specific information and obscures others. A common example is designing a light-coloured option for selecting ‘no’ in response to a pop-up

#### ■ BAIT AND SWITCH

Advertising a particular outcome based on user action but serving an alternate outcome

#### ■ DRIP PRICING

Elements of prices are not revealed upfront or are revealed surreptitiously

#### ■ DISGUISED ADS

Masking advertisements as other types of content such as user generated content or news articles.

#### ■ NAGGING

Buyers facing overload of unrelated requests, information, options or interruptions

### What are dark patterns?

- Dark Patterns are unethical user interface/user experience interactions,

designed to mislead or trick users to make them do something they don't want to do.

## 9.5 Justice Gita Mittal Committee

### Why in the news?

Recently, facing several complaints and grievances from petitioners in the Manipur ethnic violence case, the Supreme Court said it could not run the State administration and the petitioners had to trust the Justice Gita Mittal Committee to do its job.

### Key points from the news:

- The Bench directed the Unique Identification Authority of India to provide Aadhaar cards to persons who have been displaced during the violence, provided their records were already with the authority.
- The court ordered that the necessary verification prior to issuance of Aadhaar cards should be conducted expeditiously.
- The court ordered the State to issue duplicates of disability certificates, especially to people in relief camps.
- The State Finance Department has been directed to issue appropriate orders to banks to facilitate the displaced to access their accounts.

### Justice Gita Mittal Committee and Purpose:

- **Three member committee** comprising **all retired women high court judges** constituted by the apex court
- **Purpose:** To intervene and monitor, relief and rehabilitation, restoration of homesteads, religious places of worship in Manipur.
- **Members:**

- Head: Former Jammu and Kashmir high court Chief Justice Gital Mittal
- Justices: Shalini Phansalkar Joshi, Asha Menon.
- The committee has **submitted three reports** to the supreme court.
- **First report:**
  - Highlights the **loss of essential documentation** of the residents of Manipur who have been dishoused.
  - Committee suggested a nodal officer be appointed to head the process of reconstructing these documents.
- **Second report:**
  - Compensation scheme (**MVCS**) for victims in Manipur **needs to be improved** and updated with the NALSA scheme in mind.
  - The Manipur compensation scheme keeps victims who have benefitted from other schemes out of the ambit of the scheme.
- **Third report:**
  - Proposed the appointment of **domain experts** for administrative direction.

## 10. SCHEMES

### 10.1 PM Kisan Samman Nidhi scheme

#### Why in the news?

- Recently, the Ministry of Agriculture and Farmers Welfare launched an **AI chatbot under the PM Kisan scheme** ☆☆☆ SINCE 2000
- Year: It was launched in **2018**.
- It is a **central sector scheme** with 100% funding from Government of India.
- Under the scheme an **income support of 6,000/- per year** in three equal installments will be provided to **all land holding farmer families**.

#### Key details:

- The new chatbot will provide necessary details such as **agriculture schemes, eligibility status, payment details** to the farmers.
- It is integrated with **bashini**, which will provide **all the details in all the 22 official languages** of the country.
- **State Government** and UT administration will **identify** the farmer families which are eligible under the scheme.
- The **fund will be directly transferred to the bank accounts** of the beneficiaries.
- **Nodal Ministry:** Ministry of Agriculture and Farmers welfare

#### About PM Kisan Samman India scheme:

- It was launched to provide **income support to the farmers**.

# 11. PLACES IN NEWS

## 11.1 Coup in Gabon

### Why in the news?

- Recently, the military seized power in Gabon.

### Key details:

- It is the seventh coup in the African continent since 2020.



### Timelines of the coup:

- Gabon - August 2023
- Niger - July 2023
- Burkina Faso - September 2022
- Guinea - September 2021
- Chad - April 2021
- Mali - May 2021

### About Gabon:

#### Bordering countries of Gabon:

- Congo
- Cameroon

- Equatorial Guinea.



## 11.2 Sudan issue

### Why in the news?

- Recently, Air strikes in Sudan killed 20 people.



### What is the root cause of this conflict?

- Since **2021**, Sudan has been ruled by a **council of military generals**.
- Recent conflict is the direct result of the **power struggle between Army and paramilitary forces**.

- Both the leaders of the army and paramilitary forces refused to hold elections.
- But the People advocate for the rule of an elected government.

**Sudan:**

- It borders the Red Sea.

**Neighboring countries:**

- Ethiopia
- Eritrea
- South Sudan
- Egypt
- Libya
- Chad
- Central African Republic

**11.3 Morocco earthquake**

**Why in the news?**

- Recently, around 2400 people died due to an earthquake in Morocco.

**Key details:**



- The earthquake was measured as 6.8 magnitude.
- Marrakesh, the largest city of the country, was the most affected place.

**About Morocco:**

- It is located in the northwest of the African continent.
- The Gibraltar strait, which connects the Atlantic Ocean and Mediterranean Sea is located between Spain and Morocco.
- **Border countries:**
  - Algeria
  - Western Sahara

**11.4 Lebanon**

**Why in the news?**

- Recently, a large -scale clash happened in the refugee camp in Lebanon.
- **Ain-al Hewleh camp is the largest refugee camp in Lebanon.**

**About Lebanon:**

- It is a West Asian country.



- **Border countries:**
  - Syria

- Israel
- It has a border with the **Mediterranean sea.**
- It is a part of the **Levant region.**

## 11.5 Sahel region

### Why in the news?

Recently, three African countries in the Sahel region signed a mutual defense pact.

### Three countries signed Mutual defense pact:

- Niger
- Burkina Faso
- Mali



### Sahel region:

- It is located in the northern side of the African continent.
- The Sahel is the ecoclimatic and biogeographic realm of transition in Africa between the Sahara to the north and the Sudanian savanna to the south.
- It stretches between the Atlantic Ocean and the Red sea.
- It comprises **13 countries.**
  - Niger, Mali, Burkina Faso, Nigeria, South of Algeria, Senegal, Mauritania, Cameroon,

Central African Republic, Eritrea, Ethiopia, South Sudan , Sudan.

## 11.6 Scarborough Shoal

### Why in the news?

Recently, the Philippine coast guard complied with the order of President Ferdinand Marcos Jr to remove a floating barrier placed by China's coast guard to prevent Filipino fishing boats from entering a lagoon in a disputed shoal in the South China Sea.

### Key points:

- Philippine officials condemned the installation of the 300-metre-long barrier at the entrance to the lagoon at Scarborough Shoal as a violation of international law and their Southeast Asian nation's sovereignty.
- China said the shoal and its adjacent waters are "China's inherent territory," where Beijing "has indisputable sovereignty."
- The Philippines, Vietnam, Malaysia, Brunei and Taiwan are involved with China in the South China Sea Conflicts.

### Scarborough Shoal in South China Sea:



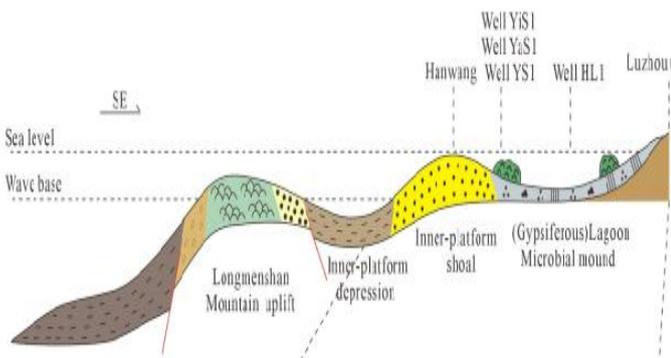
- Claimed by the **Philippines, China and Taiwan.**

- Located inside the **Exclusive Economic zone of the Philippines**.
- Referred as '**Huangyan Island**' by China, '**Kulumpol Ng Panatag**' in Filipino.
- **Significance:**
  - Rich in oil, Natural gas, Minerals and Fish.

### Difference between Lagoon and Shoal

#### Shoals:

- Shoals appear as **long and narrow ridges**.
- **Formation:**
  - The landform occurs when an ocean current, stream, or river facilitates the deposition of granular material and sediment leading to **localized shallowing of the water**.
  - The **occasional sea rise** may result in the in-place submerging of barrier islands leading to the formation of shoals
- Shoals are also known as **sandbanks, sandbars, or gravel bars**.
- A shoal–sandbar may seasonally separate a smaller body of water from the sea, such as:
  - Marine lagoons



- Brackish water estuaries
- Freshwater seasonal stream and river mouths and deltas.

#### Lagoon:

- A lagoon is a **shallow body of water separated from a larger body of water** (usually the ocean) by sandbars, barrier islands, or coral reefs. Lagoons are often called estuaries, sounds, bays, or even lakes.

### 11.7 Gurez and Mushkoh valley

#### Why in the news?

- Recently, the 130 km road connecting high altitude passes of the **Gurez valley** in **North Kashmir** with the **Mushkoh valley** in **Kargil's Drass sector** has been opened up for tourists.

#### Key points from news:

- **Kaobal Gali**, the highest pass at a height of 4,166.9 meters in Gurez, connects the two valleys.
- The road connecting the two valleys is being maintained under Beacon-by the Border Roads Organisation.

#### • Gurez valley:

- One of few habitations in Kashmir where villages with only log houses exist, with no intervention of urban concrete materials.
- Home to **Ibex, Musk deer and Marmots**.

#### • Mushkoh Valley:

- Home to endangered **Himalayan Yew**.

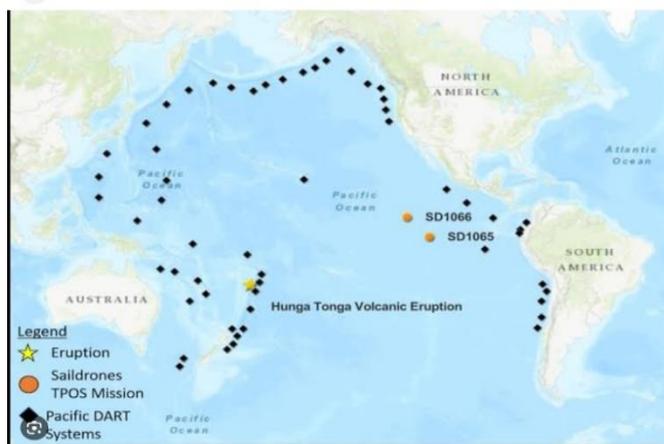
#### • Tulail Valley:

- Formed by the east to west flowing **Kishanganga River** originating from Kishanser Lake.

#### • Significance of this move:

- It will improve the economic prosperity of the region
- At the time of rising militancy it ensures peace in the region by building trust towards the government.
- The administration sees huge tourist potential in opening the Gurez-Drass road to tourists.
- Development in this area also serves India's strategic interest.

- Majority of volcanoes have cooling effects, but this volcano is an exception.



## 11.8 Hunga Tonga Hunga Ha'apai

### Why in the news?

- Recently, Environmental scientists said that the eruption of **Hunga Tonga Hunga Ha'apai** volcano might be a reason for unusual temperature increase.

### Key details:

- The **Hunga tonga Hunga ha'apai** volcano erupted in 2022 January.
- It blew the equivalent of 60,000 Olympic swimming pools of water into the stratosphere.
- **Water vapor is a natural greenhouse gas, trapping heat as it swirls around the globe.**

### About Hunga Tonga Hunga Ha'apai volcano:

- It is an **underwater volcano** situated on the northeastern side of Australia in the **Pacific Ocean**.
- It consists of two islands of Hunga - Tonga and Hunga Ha'apai.
- It erupted in January 2022 and caused some minor changes in the world climate.
- The US Geological Survey estimated the eruption caused the equivalent of a magnitude 5.8 earthquake.

## 12. PERSONALITIES

### 12.1 Mangri Orang

### Why in the news?

Recently, the Indira Gandhi National Centre for the Arts (IGNCA) staged Malati Mem, a multilingual play based on the life and the revolutionary zeal of Mangri Orang, an Adivasi with roots in central India.

### About Mangri Orang:

- Mangri Orange also known as Malati mem is an unsung hero of India's struggle for freedom from British rule.
- **Place:** Assam
- She participated in the **anti liquor campaign in 1921** in the tea garden of Assam.

- Anti liquor or opium campaign held during the **Non cooperation movement period**.
- She was gunned down in 1921 for leading a fight against foreign liquor and opium pushed during the colonial period.
- She was the **first female martyr of India's freedom movement**.

## 12.2 Bhagat Singh

### Why in the news?

- Recently, a Pakistan court raised an objection to a plea to reopen the case of Independence war hero Bhagat Singh's sentencing in 1931.

### About Bhagat Singh:



- Bhagat Singh born in Punjab in 1907.
- He participated in the **non cooperation movement** and burnt a foreign clothes and books.
- In **1922**, he joined the **Young revolutionary movement** advocating violent overthrow of the British empire.
- He **did not favor Mahatma Gandhi's philosophy of non violence** and was

disillusioned after Gandhiji called off the non cooperation movement.

- He became one of the members in **Hindustan Republican Association** and in **1928** changed the organization's name to **Hindustan Socialist Republican Association**.
- He joined the **national college**, which was setup in alternative to English government schools.
- In **1925** , he started **Naujawan bharat sabha** with his friends.
- **Lahore conspiracy case(1929): Bhagat Singh, Rajguru and Sukhdev** killed **Saunders** in revenge for the death of Lala Lajpat rai.
- **Bhagat Singh and B.K. Dutt** threw a bomb in **1929** in the Central Legislative Assembly, in protest against the passing of two repressive bills, the **Public Safety Bill and the Trade Dispute Bill**.
- He was arrested along with Rajdev, sukhdev in the Lahore conspiracy case and bomb manufacturing case.
  - He was awarded the death penalty and hanged on March 23 1931.
  - **March 23 is celebrated as Martyrs day**.
- In 1931, Gandhi advocated for the remission of Bhagat Singh from death penalty to life imprisonment.
- Irwin didn't accept the release of Bhagat singh.
- **Books:**
  - Why I Am an Atheist: An Autobiographical Discourse
  - The Jail Notebook and Other Writings.

## 12.3 Rabindranath Tagore

### Why in the news?

- Recently, the Shantiniketan was added into the World Heritage Site list.
  - Rabindranath Tagore established the **Santiniketan** in West Bengal.

### About Rabindranath Tagore:

- He was born in 1861 in Kolkata.
- He was a poet, painter and novelist.
- Other names: **Kabiguru and Gurudev**.

- 1921- He established the **Vishwabharathi university**.
- He **renounced his knighthood** title to condemn the **Jallianwala bagh incident in 1919**.
- He won the **nobel prize in 1913** for his work **Gitanjali**.
- **India and Bangladesh national anthems were written by Rabindranath Tagore.**
  - **Jana Ganga mana** and **Amar Sonar Bangla** are national anthems of India and Bangladesh respectively.
- He gave the **Mahatma title to Gandhi**.



# BUREAUCREATE

Nurturing Dreams Empowering Minds



# MAINSTORIES

## 1. POLITY AND GOVERNANCE

### 1.1 Simultaneous elections

#### Why in the news?

- Recently, the Union government formed a committee under the headship of former President of India Ram Nath Kovind, to look into the feasibility of simultaneous elections to State Assemblies and the Lok Sabha.

#### Why does India need simultaneous election (Advantages)?

- **Cost reduction:** Simultaneous elections will reduce the election expenditures of both the election commission and political parties.
  - ECI said that only 4500 cr would be required to hold simultaneous elections.
- **Development programmes:** Model code of conduct will be operational only during the simultaneous election time and will help to implement development activities.
  - Frequent imposition of the Model Code of Conduct during polls, which stalled all development work for months at a time.
- **Improve governance:** Simultaneous elections will help ruling parties focus on governance instead of being constantly in "election mode".
- **Reduced public disruption:** Simultaneous elections will also reduce disruption of normal public life as political rallies will be kept to a minimum.
- **Impact on social fabric:** Frequent elections perpetuate caste, religion, and communal issues across the country as elections are polarizing events that have accentuated casteism, communalism, and corruption.

#### Issues in simultaneous election:

- **Affects regional parties:** Simultaneous elections will be a disadvantage to the regional political parties as national issues are bound to make a deeper impact.
- **Synchronization:** Simultaneous elections would require arbitrary curtailing or extending the terms of existing legislatures to bring their election dates in line with the due date for the rest of the country.
- **Complex legislative process:** Implementing the simultaneous elections will require multiple constitutional amendments and amendments to the Representation of People Act.
- **Accountability erosion:** Simultaneous elections can reduce the accountability of the political parties as they don't have to meet the people separately for Lok Sabha and state elections.
- **Logistical issues:** There are a lot of logistical requirements such as EVMs and VVPATs are required.

- Large scale deployment of Civilian and armed forces also required to smoothly conduct the elections.
- **Confuse voters:** Most of the voters don't have election literacy. Conducting simultaneous elections will confuse the voters with whom to vote in lok sabha and state assembly elections.
- **Affects federalism:** The desired outcome entails the conduction of elections within a unified and comprehensive framework, thereby superseding any localized concerns or ambitions.
  - This affects the federal nature of the country.

### How to overcome the issues?

- **Promote consensus among parties:** All the stakeholders such as central and all the state governments and election commission can bring consensus through dialogues.
  - Consensus among all the political parties also will ensure amendment in the constitution.
- **Awareness:** Election commission should promote election literacy to the people. Awareness of one nation and one election also have to be promoted.
- **Two phase approach:** Parliamentary standing committee in its 79th report has also recommended an alternative and more practical method of holding simultaneous elections in a two-phase approach. This can also be considered.

### Reports, recommendations, judgements related to Simultaneous elections:

- **21st report of law commission:** Simultaneous elections are often considered a potential solution to address the issue of the country being in a perpetual state of election mode.
- **Parliamentary standing committee on Personnel, Public Grievances, Law and Justices 2015:** Simultaneous election provides advantages
  - Reduction in the significant costs associated with conducting separate elections.
  - The avoidance of policy paralysis caused by the Model Code of Conduct during election periods.
  - Minimize disruption to the delivery of essential services. ★ ★
  - A decrease in the strain on manpower resources during election time.
- **Law commission 1999 report:** An amendment of this rule on the lines of the German Constitution, which provides that the leader of the party who wants to replace the chancellor has to move the no-confidence motion along with the confidence motion.
  - If the motions succeed, the president appoints him as the chancellor.
  - This will avoid the premature release of the assemblies.
- **Law commission 2018:** It recommended replacing the "no-confidence motion" with a "constructive vote of no-confidence" through appropriate amendments;
  - A government may only be removed if there is confidence in an alternative government.

## 1.2 Women Reservation Bill

### Why in the news?

- Recently, the 128th constitutional amendment bill which provides 33% reservation to women in parliament and state legislative assemblies was introduced in the parliament.

### Need for Women's reservation bill:

- **Low representation:** To politically empower the underrepresented women in politics.
  - **Eg: Only 14.5% of the parliament members** are women and **9% of the state assembly members are women.**
- **Efficiency:** Women representation in legislative bodies can enrich the efficiency of the administration in hard times as half of the population is women.
  - Countries with women leaders such as **Germany, New Zealand** successfully contained the Covid-19 effect.
- **Women-centric approach:** Women centric policies and programmes will be designed and executed by more representation of women in the legislature.
- **Equal representation:** Women have the same voting rights as men, although currently there is very less representation of women in the parliament.
- **To break the vicious cycle:** Reduced political participation options for women as a result of socioeconomic disadvantages result in weaker representation, which in turn slows down efforts to overcome socio economic disadvantages.
- **Recording effect:** An improvement in the official's receptivity to the requests of underprivileged groups. For instance, increased police response to crimes against women in areas where women held political leadership positions.
- **Choice to voters:** It can provide more democratic choice to voters to elect their representatives in elections.

### Chronology of the Bill:

- Bills amending the Constitution to reserve seats for women in Parliament and state legislative assemblies have been introduced in 1996, 1998, 1999, and 2008.
- The first three Bills lapsed with dissolution of their respective Lok Sabhas.
- The 2008 Bill was introduced in and passed by Rajya Sabha but it also lapsed with the dissolution of the 14th Lok Sabha.
- The Constitution (One Hundred and Twenty-Eighth Amendment) Bill, 2023 was introduced in Lok Sabha.

### Major provisions of the bill:

- **Reservation:** The bill inserts one clause in Article 330A and Article 332A to provide 33% reservation to women in parliament and all state legislative assemblies.

- **Coverage:** This will also apply to the seats reserved for SCs and STs in Lok Sabha and states legislatures.
- **Commencement:** New clause in Article 334 provides that the reservation will be effective after the census conducted after the commencement of this Bill has been published. Based on the census, delimitation will be undertaken to reserve seats for women.
- **Duration of reservation:** The reservation will be provided for a period of 15 years. However, it shall continue till such date as determined by a law made by Parliament.
- **Rotation of seats:** Seats reserved for women will be rotated after each delimitation, as determined by a law made by Parliament.

### How does the women's reservation bill ensure Women empowerment in India?

- **Political representation:** This provision will politically empower women by providing a place to them in policy making.
- **Women centric policies:** More women in legislative bodies will be a platform to effectively discuss and enact women centric policies.
- **Ripple effect:** Women political empowerment can make a ripple effect of women empowerment in other fields.
  - **Eg: Judiciary and government educational institutions and jobs.**
- **Socio economic improvement:** Women empowerment in the political system will lead to holistic socio economic empowerment of women.
- **Success in local body reservation:** Elected women representatives have over time asserted their presence in spite of interference from male family members.

### Criticism in the bill:

- **OBCs not included:** The Bill has no provision for reservations in the Rajya Sabha, in the Legislative Councils and no reservation for OBC women.
- **Low time duration:** In Indian society with male domination, 15 years of reservation will not empower women effectively.
  - **Eg: Reservation to SC/ST did not effectively empower them in India.**
- **Non inclusion of Rajya Sabha and Legislative Councils:** The bill didn't provide the reservation in Rajya Sabha and state legislative councils even though women representation is 12% compared to Lok Sabha 14%.
- **Late implementation:** The commencement of the provision will be after the next census. So the implementation of the provisions may be delayed.
- **Unequal seat sharing mechanism:** Loss of number of lok sabha seats to the southern states and higher seats to the northern and central states after fresh census and delimitation.

### Way forward:

- **Extensive coverage:** Parliament should take efforts to extend the reservation to Rajya Sabha and legislative councils.
  - It can extend the same to the OBC section also.

- **Faster implementation:** Political parties and ruling governments should take measures to implement the provisions without any delay such as administrative hurdles and delimitation exercises.
- **Pilot implementation:** These reservation provisions can be implemented in the upcoming Lok Sabha elections as a pilot project.
  - So, the issues in the implementation can be effectively identified and resolved.
- **Capacity building:** First time representatives should be given proper capacity building programmes.
- **Adoption of better ideas:** Better ideas on women empowerment in politics should be taken.
  - **Eg: EMILY list** in the USA gives women election and campaign mentorship.
- **Strengthening the role of women organizations:** The role of the **National Commission for Women** and the **Parliamentary Committee on Empowerment of Women** need to be significantly revised to ensure that the women reservation law does not stay a symbolic gesture.

### 1.3 Digital Data Protection Act (DBDBA) 2023

#### Why in the news?

- Recently, the Digital Personal Data Protection bill got the president 's assent.

#### What are the key provisions of the Data protection act?

- **Applicability:** The act will apply to the processing of digital personal data within India where such data is collected online, or collected offline and is digitized.
  - It will also apply to such processing outside India.
- **Individual consent:** Personal data may be processed only for a lawful purpose for which an individual has given consent and consent may be deemed in certain cases.
  - For individuals below 18 years of age, consent will be provided by the legal guardian.
- **Role of data fiduciary:** Data fiduciaries will be obligated to maintain the accuracy of data, keep data secure, and delete data once its purpose has been met.
  - Data fiduciaries are who are maintaining, processing, and storing any personal data.
- **Rights to data principals:** The act grants certain rights to individuals including the right to obtain information, seek correction and erasure, and grievance redressal.
- **Duties of data principals:** They must not: (i) register a false or frivolous complaint, (ii) furnish any false particulars, suppress information, or impersonate another person in specified cases. Violation of duties will be punishable with a penalty of up to Rs.10,000.
- **Transfer of personal data outside India:** The central government will notify countries where a data fiduciary may transfer personal data. Transfers will be subject to prescribed terms and conditions.
- **Exemptions:** The central government may exempt government agencies from the application of provisions of the act in the interest of specified grounds such as security of the state, public order, and prevention of offenses.
- **Data protection board:** The central government will establish the Data Protection Board of India to adjudicate non-compliance with the provisions of the act.
  - The central government will prescribe:

- Composition of the Board,
  - Selection process,
  - Terms and conditions of appointment and service,
  - Manner of removal.
- Key functions of the Board include:
- Monitoring compliance and imposing penalties,
  - Directing data fiduciaries to take necessary measures in the event of a data breach,
  - Hearing grievances made by affected persons.
- **Penalties:** Up to Rs.150 crore for non-fulfilment of obligations for children and up to Rs 250 crore for failure to take security measures to prevent data breaches.
  - **Prevailing of the act:** In case of a conflict between the proposed Digital Personal Data Protection law and any other law, the data protection law will prevail.
  - **Obligations of the state:** Appointment of data protection officer, data auditor and data protection impact assessment.
  - **Blocking of platforms:** The act also states that if an entity is penalized on more than two instances, the central government after hearing the entity can decide to block their platform in the country.

#### Significance:

- **Right to forget:** The act provides that once the motive of the personal data was met, it must be erased.
- **Grievance redressal:** Establishment of a Data protection board will expedite the grievance redressal of the common people.
- **Children Data privacy:** Data fiduciaries are forbidden to engage in any processing of children's data that is likely to cause any detrimental effect on the well-being of the child.
- **Data for startups:** It provides legitimate use of personal data for startups. This can improve their business reach and market.
- **Balance on data usage:** The Act has simplified most of the obstacles in this space, thereby seeking to strike a balance between strict data localisation and free flow of data.

#### Issues in the act:

- **No timeline:** At present, no timeline has been prescribed for implementing the grievance redressal and data principal rights.
- **Exclusion of offline data:** Offline personal data was excluded from the act.
- **Exemptions:** Exemption of government entities is a concern that it could be used by the ruling government for its political purposes.
- **Lack of provision of purpose of use:** There is no provision that regulates the purpose for which the data can be collected and how it can be used, as long as the purpose is legitimate.

- **Compliance burden on startups:** There could be an additional compliance burden on startups from this law.
- **No coverage of emergent technologies:** The act doesn't address issues of facial recognition, AI etc.
- **Dilution of RTI act:** There is also concern that the law could dilute the RTI Act, as personal data of government functionaries is likely to be protected under it, making it difficult to be shared with an RTI applicant.
- **Lack of Digital Literacy:** Most of the people have no digital knowledge about the act and its provisions.
  - They can be exploited by the illegal data fiduciaries.

#### Way forward:

- **Digital literacy:** Government should promote awareness about the act and also should take measures to increase digital literacy.
- **Widening coverage:** Act should cover emergent technologies such as AI, big data etc.
- **List of data usage purposes:** Government should provide a list of purposes for which personal data can be used.
  - This can prevent illegal data usage.
- **Timeline of grievance redressal:** Proper timeline should be prescribed within which the grievance should be addressed by the data protection board.

## 2. INTERNATIONAL RELATIONS

### 2.1 Act East policy

#### Why in the news?

- Recently, Prime Minister Modi said that the Association of Southeast Asian Nations (ASEAN) is an "important pillar" of India's Act East policy.

#### What is Act East Policy?

- India's Act East Policy is a foreign policy initiative launched in 2014 with an aim to strengthen India's economic and strategic ties with countries in Southeast Asia and East Asia.

#### Main objective:

- Promote economic cooperation, cultural ties and develop strategic relationships with countries in the Indo-Pacific region through continuous engagement at bilateral, regional and multilateral levels, thereby providing enhanced connectivity in its broadest sense, including political, economic, cultural and people to people relations.

### Significance:

- **Development of Northeast:** Act East policy provides an interface between North East India including the state of Arunachal Pradesh and the ASEAN region.
- **Maritime security:** Active cooperation with the eastern countries will help India to ensure a free and rules based Indo Pacific area.
- **Integration with global trade value chain:** As per world bank, South East Asia will be a new manufacturing power house.
  - Better relations with this region is necessary for India's integration with the global trade value chain.
- **Reducing China factor:** Better relationship with the eastern countries will help India to suppress China's dominance in the region.
- **Economic development:** After the European Union, greater economic relations with ASEAN will be useful for India to achieve its \$5 trillion economy.
- **Food security:** India imports 60% of the total palm oil from three ASEAN member countries.

### How is it different from the Look East policy?

Act East policy	Look East policy
Launched in 2014	Launched in 1991
Political , economical and cultural integration of India with eastern countries.	Economic Relationship development was the only motto.
Geographical range is eastern countries such as Japan , South Korea and southeastern countries.	Main focus was only the Southeastern region.
India's engagement has increased with more multilateral organizations such as BIMSTEC, Indian Ocean Rim association etc.	Better relationship with only ASEAN was the main motto.
India's Act East policy has a strong synergy with Japan's Free and Open Indo-Pacific and South Korea's New Southern Policy. <ul style="list-style-type: none"><li>• All three recognise the centrality of the ASEAN region</li></ul>	
The Act East lays great emphasis on the connectivity programmes that link India's Northeast region with ASEAN countries.	

## How are regional organizations helpful in implementing this policy particularly ASEAN?

- **Persuasion of countries:** Multilateral organizations are an easy way to persuade the member countries and develop consensus quickly on a particular matter.
- **Common platform:** It provides a common platform to deliberate on issues of importance to the region such as climate change etc.
- **Economic development:** It provides a platform to increase the trade relationship between the two regions.
  - **Eg: India - ASEAN free trade agreement.**
- **Reducing China domination:** Act as a platform to effectively reduce the Chinese influence in the region.

## Challenges in fulfilling India's Act East policy:

- **China's dominance:** Political alignment of certain South eastern countries to China is a concern for India.
  - Cambodia, Myanmar are openly supporting China.
- **Big brother attitude:** Many South eastern countries accused India for its big brother attitude.
- **Poor connectivity:** India's connectivity with the South eastern parts are very poor. It affects people to people contact and trade.
- **Economic underperformance:** India and ASEAN bilateral trade value is not in the expected level.
  - **India's bilateral trade with ASEAN is \$110 bn but China's trade value is \$978 bn, nine times more than India.**
- **Concern on minorities:** Many ASEAN countries have expressed concern on recent violences against religious minorities in india.
  - **Eg: Citizenship amendment act, violence against Muslims etc.**

## Steps taken to address these challenges:

- **Connectivity projects:** Some of the major connectivity projects such as **Kaladan Multi-modal Transit Transport** Project were started to improve the connectivity between two regions.
- **Reducing China domination:** India's active participation with BIMSTEC and QUAD has reduced China's domination in the Indo Pacific region.
- **Maritime security:** India has actively cooperated with BIMSTEC, IORA to effectively ensure the free and open Indian Ocean region.
- **Cultural ties development:** On the Civilizational front, Buddhist and Hindu links could be energized to develop new contacts and connectivity between people.

## Way forward:

- **Improve trade ties:** India should actively negotiate with eastern countries to increase the bilateral trade relations.
- **Soft power diplomacy:** Cultural and civilizational linkages are India's niche soft power advantages while pursuing Act East Policy.

- **International cooperation:** India should actively stand with ASEAN countries to resolve the South China sea issue.
- **Review RCEP decision:** Given the global economic scenario in present times and the near future, it would be in India's interest to dispassionately review its position on RCEP and carry out structural reforms.

## 2.2 India West Asia Relationship

### Why in the news?

- Recently, Prince Mohammed visited New Delhi for the **G20 Leaders' Summit**, where he, along with Prime Minister Narendra Modi and President Joe Biden, announced the India-Middle East-Europe Economic Corridor.
  - A massive infrastructure project that would connect India to Europe via **West Asia**, and could rival China's Belt and Road Initiative.

### Significance of West Asia for India:

- **Energy source:** India meets **60% of its crude oil** and **85% of natural gas** from West Asia.
- **Employment opportunities:** West Asia provides large scale employment opportunities to **around 9 million Indian people**.
- **Remittances:** Around **55% of the total remittances of India** come from West Asia. In 2022 **around \$40 bn remittances came from West Asia**.
- **Largest trade partner:** West Asian region is the largest trading partner of India **accounting for 15% of India's total trade value**.
- **Potential market for exports:** The region is today a key market for several Indian commodities ranging from tea and basmati rice to electrical equipment, apparel, and machinery.
- **Investment:** West Asian countries UAE and Saudi Arabia are the largest investment countries in India.
  - **Eg: Cumulative investment of the two countries in India is around \$130 bn.**

### Challenges for India to fulfil its objectives in West Asia:

- **China factor:** China has emerged as the biggest trading partner of West Asian countries and also ensured its strategic importance through the negotiation of the Iran - Saudi reconciliation agreement.
- **Conflict in Saudi - Israeli relationship:** Normalization of relationship between Israel and Saudi Arabia is a key prioritization of India.
- **Iran factor:** Recent close relationship of Iran with China in strategic matters is a key concern of India.
  - This also delayed India's chabahar port development in Iran.
- **Trust Deficit with Pakistan:** India's "trust deficit" with Pakistan has hindered its ability to advance regional projects, such as the Iran-Pakistan-India (IPI) and Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline initiatives.

- **Lack of Effective Media Strategy:** India lacks an effective media strategy to counter Pakistan's narrative on key issues, leaving India with limited alternatives to engage with Pakistan constructively for regional outreach.
- **Religious issues:** Gulf countries, specifically Saudi Arabia criticize India for its stance against religious minorities particularly Muslims.
- **Bureaucratic Inefficiencies:** Chronic understaffing, and multiple centers of decision-making have often led to inefficient or inadequate implementation of bilateral and international treaties and agreements.
- **Lack of Policy Framework:** The Indian government has yet to develop a comprehensive policy framework to deal with potential future economic contingencies affecting Indian expatriates in the Gulf.

#### Way forward:

- **Independent West Asian foreign policy:** India should approach its relationship with West Asian countries independent of USAs goals.
  - If India follows USs West Asian policy it would become a backfire for India.
- **Multi engagement:** India should maintain its legacy of non-partisanship foreign policy between the US and Russia.
  - Better way is to expedite the development of the International North South Transport Corridor that connects India and Russia.
- **Improve trade relationship:** India should increase its trade and investment relationship with all the West Asian countries.
  - Eg: Free trade agreement with Saudi Arabia will be a major economic development for India.
- **Promoting secularism:** India should always stand for the secular nature of the country and the government should take steps to ensure the religious freedom of the muslims.

#### Groupings and institutions:

- **I2U2 forum:** It is a forum established in 2012 consisting of India, Israel , USA and UAE to economically integrate West Asia and South Asia and also to provide technology solutions to the problems faced by the global south.
- **India - Middle East - Europe corridor (2023):** This project was started to provide multimodal connectivity between India and Europe through West Asia.
- **Abraham accords:** The Abraham Accords are a series of agreements to normalize relations between Israel and several Arab countries, including the UAE, Bahrain, Morocco, and Sudan, mediated by the United States.
- **BRICS:** Iran, Saudi Arabia and UAE all the three West Asian countries have joined the BRICS forum in 2023. This will increase India's closeness in the West Asian region.

## 2.3 Delhi declaration of G-20

### Why in the news?

- Recently, the G-20 leaders adopted the Delhi Declaration.

### Significant provisions of the Delhi declaration:

- **Sustainable development:** Timely implementation of the G20 2023 Action Plan to Accelerate Progress on the SDGs.
- **Territorial integrity:** It seeks that all states must refrain from the threat or use of force to seek territorial acquisition against the territorial integrity and sovereignty or political independence of any state.
  - The use or threat of use of nuclear weapons is inadmissible
  - All states uphold the principles of international law including territorial integrity and sovereignty, international humanitarian law, and the multilateral system that safeguards peace and stability.
- **Economic importance to G-20:** Reaffirming that the G20 is the premier forum for international economic cooperation, and recognizing that while the G20 is not the platform to resolve geopolitical and security issues.
- **Black sea grain deal:** It calls for effective and full implementation of the Black Sea Grain Deal.
- **Startups:** Startup 2.0 engagement group to promote investments, inclusive growth of startups.
- **Trade:** It reaffirms the fully functional WTO dispute settlement system.
  - It adopted the G20 Generic Framework for Mapping Global Value Chains (GVC) to help members identify risks and build resilience.
  - Effective implementation of WTO's 'Aid for Trade' initiative to enable developing countries, notably LDCs to effectively participate in global trade.☆☆☆
- **MSME: Jaipur Call for Action** for enhancing MSMEs' access to information to promote the integration of MSMEs into international trade.
- **Workers:** Ensure adequate social protection and decent working conditions for gig and platform workers.
  - Will increase our efforts for the elimination of child labour and forced labour along global value chains.
- **Financial inclusion:** It reaffirms financial inclusion through digital public infrastructure.
  - Timely launch of Data for Development Capacity Building Initiative to reduce digital divide.
- **Corruption:** Strengthening law enforcement agencies against corruption.
  - Better enforcement of the OECD anti corruption convention.
  - Criminalisation of foreign bribery in line with the Article 16 of the United Nations Convention against Corruption.
- **Hunger and malnutrition:** To enhance global food security and nutrition for all in line with the G20 Deccan High-Level Principles on Food Security and Nutrition 2023.

- Strengthen research cooperation on climate-resilient and nutritious grains such as millets, quinoa, sorghum, and other traditional crops including rice, wheat and maize.
- Strengthening the **Agricultural Market Information System (AMIS)** and the **Group on Earth Observations Global Agricultural Monitoring (GEOGLAM)**, for greater transparency to avoid food price volatility.
- **Health:** Promote the **One Health-based approach** driven by the Quadripartite's One Health Joint Plan of Action (2022-2026).
  - Support the work of the **WHO-led Alliance for Transformative Action on Climate and Health (ATACH)**.
  - Strengthen existing infectious diseases surveillance systems.
  - Focus on strengthening primary health care and health workforce and improving essential health services and health systems to better than pre-pandemic levels, ideally within the next 2-3 years.
  - Ensure progress towards polio eradication and ending ongoing epidemics including AIDS, tuberculosis, malaria, hepatitis and water-borne and other communicable diseases, also recognising the importance of research on long COVID.
  - Recognize the potential role of **evidence-based Traditional and Complementary Medicine in health**.
- **Education:** High importance to foundational learning for better education and employment.
  - Digital technologies usage to reduce educational gap.
  - Use and study of emerging technologies in education.
- **Culture:** Strengthening fight against illicit trafficking of cultural property at national, regional or international levels.
- **Climate change:** Strengthening the full and effective implementation of the Paris Agreement and its temperature goal.
  - Timeframes for achieving net-zero may be shaped by sustainable development, poverty eradication needs, equity, and in line with different national circumstances.
  - Urge all countries to align their NDCs with the temperature goal of the Paris Agreement by the end of 2023.
  - Ensure the assurance of **\$100bn financial assistance** from developed countries.
  - Setting up of **New Collective Quantified Goal** to provide funding support to developing countries.
- **Recognition to human rights:** Promote respect for religious and cultural diversity, dialogue and tolerance.
  - Freedom of opinion or expression,
  - Right to peaceful assembly
  - Right to freedom of association
  - More support for migrants, including migrant workers and refugees.
- **African union:** The African Union was officially included into the G-20 forum.
- **Terrorism:** It condemns terrorism in all its forms and manifestations, including those on the basis of xenophobia, racism and other forms of intolerance, or in the name of religion or belief.

- Measures should be taken to stop illicit trafficking and diversion of small arms and light weapons.
- **Gender digital divide:** Address gender norms and barriers to accessibility, affordability, adoption, and usage of digital technologies.
  - Active participation of women in the digital related frameworks.
  - Identify and eliminate all potential risks that women and girls encounter from increased digitalization.
- **Gender inclusion:** Implement the G20 Roadmap Towards and Beyond the **Brisbane Goal '25 by 25'** and ask the ILO and OECD to report progress annually.
  - Promote women's inclusion into the formal financial system by strengthening their access to economic resources, particularly through digital finance and microfinance.
  - Address the unequal distribution in paid and unpaid care and domestic work and to promote the continued participation of women in education and employment.
- **Taxation:** Effective implementation of the **Global Anti-Base Erosion (GloBE) Rules**.
- **Promotion of digital ecosystems:** Promote responsible, sustainable and inclusive use of digital technology by farmers and an ecosystem of **Agri-Tech start-ups and MSMEs**.
  - Welcome the establishment of the **Global Initiative on Digital Health (GIDH)** within a WHO-managed framework to build a comprehensive digital health ecosystem.
  - Build and maintain a **Global Digital Public Infrastructure Repository (GDPR)**, a virtual repository of DPI, voluntarily shared by G20 members and beyond.
  - Establishment of **One Future Alliance (OFA)**, a voluntary initiative aimed to build capacity, and provide technical assistance and adequate funding support for implementing DPI in Low and Middle Income Countries (LMICs).
- **Artificial intelligence:** Unlock the full potential of AI, equitably share its benefits and mitigate risks.
  - Promote international cooperation and further discussions on international governance for AI.
- **Clean energy:** Ensure low cost financing to the least developed countries for their clean energy transition.
  - Establishment of a **green hydrogen innovation center** for the transparent global market for hydrogen and ammonia.
  - Emerging clean energy technologies transfer to the developing countries.
  - Efforts to **triple renewable energy capacity by 2030**.
  - Recognize the importance of sustainable biofuels in our zero and low- emission development strategies, and note the setting up of a **Global Biofuels Alliance**.
  - Countries that opt to use civil nuclear energy, will collaborate on voluntary and mutually agreed terms, in research, innovation, development & deployment of civil nuclear technologies including advanced and **Small Modular Reactors (SMRs)**.
  - Reduce inefficient fossil fuel subsidies, encourage phase out of carbon fuel based on the national circumstances.
- **Biodiversity:** Commit to restoring by 2030 at least 30% of all degraded ecosystems and scaling up efforts to achieve land degradation neutrality.

- Effective implementation of the **Kunming-Montreal Global Biodiversity Framework (GBF)**.
- Support the G20 ambition to **reduce land degradation by 50% by 2040** on a voluntary basis, as committed under the G20 Global Land Initiative (GLI).
- Support the **Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)**, within the Antarctic Treaty system, to establish a representative system of Marine Protected Areas (MPA).
- Countries should take steps to end illegal, unreported, and unregulated (IUU) fishing.
- Establishment of an **Intergovernmental Negotiating Committee (INC)** to develop an international legally binding instrument on plastic pollution.
- **Disaster management:** Accelerating progress on **Early Warning and Early Action** through strengthening national and local capacities.
  - Countries should share data and best knowledge under the Sendai Framework on disaster risk reduction.
- **Multilateralism:** It called for reforms in the international organizations such as the **UN** based on the current global world order.
  - Reforms for better, bigger and more effective **Multilateral Development Banks (MDBs)** to address global challenges to maximize developmental impact.

## 2.4 India - Middle East - Europe Economic Corridor (IMEC)

### Why in the news?

- Recently, the India - Middle East - Europe Economic Corridor was announced on the sidelines of the G-20 summit.

### About India - Middle East - Europe corridor:

- This corridor is a part of Partnership for global infrastructure investment.
- It connects India with Middle East Asia and Europe.
- It has a target to invest \$600 bn in infrastructure development.
- The IMEC comprises two distinct routes;
  - **The East Corridor** connecting India to the Middle-East
  - **Northern Corridor** connecting the Middle-East to Europe.



- This extensive network integrates a railway corridor, a hydrogen pipeline, and high-density optical fiber cables.

### Reasons for establishing IMEC:

- **Alternative to Belt and road initiative:** It is considered as an alternative infrastructure project to China's BRI project.
- **No debt trap:** Investments will come from all the developed countries. So there is no threat of debt trap unlike China's BRI.
  - **Eg:** Pakistan, Sri Lanka were debt trapped by the unsustainable debt of China.
- **Collective project:** It is not a single country's project, instead it is a collective project of developed countries and International organizations like World Bank etc.
- **Sustainable credit:** Partnership of global financial institutions such as World Bank , Asian Development Bank will provide sustainable funding facilities.

### Significance for India:

- **Improved connectivity:** India's connectivity will be improved with Middle East Asia and Europe.
- **Trade improvement:** Better connectivity can lead to improvement in bilateral and regional trade with Europe and the Middle East.
  - **India - Gulf Cooperation Council bilateral trade value is \$157 bn.**
- **Energy security:** IMEC proposed a dedicated hydrogen pipeline along with tapping the other sources of renewable energy such as solar and wind to reinforce the region's energy security.
- **Pakistan veto:** It breaks Pakistan's veto over India's connectivity to the west and Eastern Europe.
- **Reach North Africa:** It also helps India to reach mineral rich North Africa and its markets.
- **Time and cost reduction:** This corridor will reduce the time and cost of transporting Indian goods to Europe by 40 percent and 30 per cent, respectively.
- **Market access:** This corridor will provide greater market access of Middle East, North Africa and Europe to India.

### Issues:

- **Funding issues:** The source of funding remains unclear, as most of the investments are planned to gather from the private sector.
- **Russia factor:** Strategic relationship with Russia can be reduced due to this western dominated project.
- **Cold War situation:** Least developed countries may drag into the Cold War situation between US and China by involving in this project.

### Way forward:

- **Gas pipeline:** India should also consider a proposal of laying a dedicated gas pipeline from the Middle-East to India.
- **Neutral relationship:** India must remain committed and engaged with other transport and energy corridors; NSTC, Suez Canal, Arctic Route via Vladivostok to remain neutral in geopolitics.
- **Extension to North Africa:** India can play an active role to extend this project to North Africa.

- This can increase India's strategic partnership in Africa and economic and social development of the poor region.

## 2.5 IBSA group

### Why in the News?

Recently, External Affairs Minister S. Jaishankar while visiting New York to address the 78th session of the United Nations General Assembly (UNGA) met with his Brazilian and South African counterparts as part of the IBSA group to further strengthen South-South Cooperation.

### Key points from the news:

- **IBSA's joint communique** was released:
  - A stand-alone meeting of Foreign Ministers would be held in the first quarter of 2024.
  - Statement reaffirmed the "strategic significance" in advancing and protecting the interests of the Global South.
  - The Ministers reaffirmed their commitment to principles of the UN Charter: **Equal Sovereignty and Non-Interference in other countries' Internal affairs, Greater Democracy and the Rule of Law in International relations.**
  - The document reaffirmed: International humanitarian law, Respect for Human Rights, Territorial integrity and Reformed Multilateralism.
  - Called for Text-based negotiations, with fixed timelines and in a formal setting, to be held during the 78th UNGA session.
  - Called for increasing permanent and non-permanent membership of the UNSC, to include wider representation from Africa, Asia and Latin America.
  - Agreed to push for the adoption of the **Comprehensive Convention on International Terrorism** at the UN reaffirming the sole authority of the UN security council for imposing sanctions.
  - Also called for urgent reform of the UNSC sanctions committees, to increase effectiveness while avoiding politicization and double standards.

### What is IBSA?

- IBSA is a unique Forum which brings together **India, Brazil and South Africa**, three large democracies and major economies from three different continents, facing similar challenges.
- All three countries are developing, pluralistic, multicultural, multi-ethnic, multilingual and multi-religious nations.

## About:

- Formalized and named the IBSA Dialogue Forum when the Foreign Ministers of the three countries met in Brasilia on 6 June 2003 and issued the **Brasilia Declaration**.
- **Five** IBSA Leadership Summits have been held so far.
- The 5th IBSA Summit was held in Pretoria on 18 October 2011.
- In 2023, Brazil assumed the rotating presidency of IBSA Dialogue Forum.

### **Cooperation Mechanism:** On three fronts

- As a forum for consultation and coordination on global and regional political issues.
  - The reform of the global institutions of political and economic governance,
  - WTO/Doha Development Agenda
  - Climate change
  - Terrorism etc.
- Trilateral collaboration on concrete areas/projects:
  - Through fourteen working groups and Six People-to-People Forums, for the common benefit of three countries
- Assisting other developing countries by taking up projects in the latter through IBSA Fund.
- **The IBSA facility for poverty and hunger alleviation (IBSA Fund):**
  - Established jointly by India, Brazil and South Africa in March 2004 and became operational in 2006.
  - The fund is managed by the UN office for South-South Cooperation (UNOSSC).
  - Each IBSA member country is required to contribute \$1 million per annum to the fund.
- **IBSA Trilateral defense cooperation:**
  - IBSAMAR- is a Maritime Exercise is an important part of it.
- **IBSA Fellowship programme:**
  - It focuses on multilateral institutional frameworks to coordinate, support and enable sustainable development globally
  - Joint research for cooperation and exchange of information in the fields of macro-economy, trade and development; and any other area as may be found of interest within the IBSA framework.

## Significance of IBSA

- **Promotion of South- South Cooperation:**

- To forge a better understanding of development cooperation as a common endeavour between the countries of the Global south.

- **Human development projects:**

- The fund has contributed \$39 million and partnered in 19 countries from global South to implement 26 projects.
  - Received UN South-South Partnership award 2006, UN MDG award 2010, and the South-South and Triangular Cooperation Champions award in 2012.
- Together in partnership with the UN, it works to assist other developing countries, particularly **Least Developed Countries (LDCs)** and **Post Conflict Reconstruction and Development (PCRD)** countries around the world with 62.4 percent of IBSA funds being devoted to the LDCs.

- **Coordination on Global issues:**

- Effective grouping of like minded democracies cooperating together in diverse sectors such as global governance, disarmament, non-proliferation, health, climate change, trade and development, intellectual property, education, human rights and tourism.

- **People Centric approach:**

- It is set apart from other partnership models due its primacy for people centric approach, and is reflected in the 2011 **Tshwane declaration**.

- **Advocacy for Global Governance reform:**

- It will help in accelerating the restructuring of international financial architecture and reforming institutions of global governance.

## How would IBSA be helpful in fulfilling India's interest?

- **Preserving democratic values:** The IBSA remained the first choice for India because it is based on democratic values and similar causes of three countries.
- **Support for India's demand:** IBSA through summits and communiqués provides support for India's demand for multilateralism, complete end of racism, protection of human rights etc.
- **UNSC Membership:** IBSA is a suitable forum to garner support for the UN reform and claim for a permanent seat in UNSC for India.
- **Reforming Global governance institutions:** It will help in making the UN relevant through expanding permanent and non-permanent membership in the 21st century.

- **Economic cooperation:** To increase trade and investment opportunities with Brazil and South Africa, leading to economic growth and diversification of markets for Indian goods and services.
- **Energy Security:** Brazil and South Africa have valuable energy resources, such as oil and natural gas. India, as an energy-hungry nation, can explore energy-related cooperation and partnerships within the IBSA framework to enhance its energy security.
- **Soft Power:** By participating in IBSA initiatives and promoting shared values and interests, India can strengthen its soft power and global influence, projecting itself as a responsible and cooperative global player.

#### Challenges:

- **Relevance:** To maintain its relevance in the wake of the emergence of similar groupings such as BRICS.
- **China's factor:** Growing China's assertiveness undermines the significance of the groupings where China is not a member.
- **Lack of regular communication:** So far only 5 IBSA summits have taken place.
- **Regional Issues:** The forum faces severe challenges and competition from other countries of their respective regions for the leadership role.
  - For instance, India faces challenges from Pakistan, Indonesia and Malaysia; South Africa from Nigeria and Egypt; and Brazil from Argentina and Mexico.
- **Coordination with other multilateral entities:** The agreements individual members have signed with other international organizations/entities can have an impact on the coordination and functioning of the forum.
- **Internal issues:** There are several internal issues that haunt the three member countries – corruption, increasing crime rates, political violence, economic inequality, etc.,

#### Way forward:

- **Regular meetings:** IBSA member states must ensure regular meetings both at the level of Heads of State and Government, as well at the Ministerial level.
- **Economic partnership:** Working collectively towards ensuring the MERCOSUR-Southern African Customs Union (SACU) -India Trilateral Preferential Trade Agreement (PTA) first, and eventually a Free Trade Area (FTA), will go a long way in ensuring the groupings' relevance.
  - MERCOSUR is a trading bloc in the South America region comprising Argentina, Brazil, Paraguay and Uruguay. It was formed in 1991 with the objective of free movement of goods, services, capital and people and became a customs union in January 1995.
- **Work in tandem with other groups:** The grouping must work together as a joint lobby in other groupings of which they are members of, such as BRICS and G20.

- **Extra governmental cooperation:** The involvement of civil society and business enterprises should be strengthened to make the dialogue forum more successful.

## 2.6 Indian Diaspora in Canada

### Why in the news?

- Recently, the Canadian Prime Minister Justin Trudeau alleged that agents of the Indian government were involved in the killing of Hardeep Singh Nijjar, a Canadian citizen.
- Concerns are raised about the situation for a large number of Indian diasporas living in Canada, especially Indian students.

### Significance of Indian diaspora in Canada:

- **Educational opportunities:** Around **8.7 lakh Indian students** are studying higher educational courses in Canada.
- **Foreign Direct Investment:** Around **\$3.3 bn foreign investment** were infused into India from Canada.
- **Remittances:** Indian diaspora in Canada sent around **\$800 mn remittances to** India 2022.
- **Investment:** Canadian pension funds, by the end of 2022, had invested over **\$45 billion** in India, making it the fourth-largest recipient of Canadian FDI in the world.
- **Entry point to North America:** Cordial relationship between India and Canada through Indian diaspora will provide a better access to North American market.
- **Soft power diplomacy:** String India's diaspora presence in the political and business arena in Canada provides India better lobbying power.

### Challenges in exploiting the complete potential of Indian Diaspora in Canada:

- **Sikh separatist movement:** 30% of Indian origin in Canada are from Punjab. Sikh separatist movement in Canada is a main security concern of India.
- **Brain drains:** Most of the people are migrating to Canada for a better job and standard of life.
- **Reactionary policies:** Reactionary policies and actions of both the governments affects the opportunities of India to explore the advantages of the Indian community.

### Measures taken by government to address these challenges:

- **Track 1.5 dialogue:** This dialogue mechanism was established to explore the areas of future cooperation and resolve any bilateral concerns.
- **India - Canada Strategic dialogue:** The strategic dialogue on external affairs ministers provides a better platform to resolve any bilateral issues.

### Reason for recent frictions and its outcome:

- Canada has made allegations that officials in the Indian government were involved in the killing of **Sikh separatist movement activist Hardeep Singh Nijjar**.
- It made this allegation against India based on the intelligence report of the **Five Eyes Alliance**.
- India completely ignored Canada's allegation.

**Outcome:**

- **Free trade agreement:** It hampers the free trade agreement development between India and Canada.
- **India - US relations:** US's pushing India to cooperate in the investigation. India has some concern for the US about its support of Canada.

**Way forward:**

- **Contain separatist movement:** Canada should actively control the Sikh separatist movement inside their countries.
- **Intelligence cooperation:** Active cooperation between intelligence agencies of both countries should be encouraged.
- **Bilateral dialogue:** Effective bilateral dialogue mechanism over the issues should be promoted.
- **Sustainable economic relations:** Bilateral issues on any matters should not disturb the economic relationships between the two countries.

## 3. ECONOMY

### 3.1 Goods and Service Tax (GST) Reforms

**Why in the news?**

- Recently, the Ministry of finance reconstituted the Group of Ministers of GST reforms.

**Issues in the Goods and Services Tax:**

- **Complex tax structures:** GST has four rate structures, this makes it difficult for the businesses to understand and comply with the tax structure.
- **GST rate on essential goods:** The Main issue of GST is that many essential commodities come under the high tax rate. This directly affects the common man.
  - **Eg: Millets are brought under the 12% tax rate, which is one of the stable foods of the people.**
- **Exclusion of crucial items:** Exclusion of items such as electricity, petroleum and real estate have restricted the reach of the impacts of the GST.
- **Poor voice to the states:** States role or power in the GST system is very low unlike center , which has veto power on gst matters.

- **Voting power of the GST council to the states is only 2/3rd, but the center has 1/3rd value, it gives ultimate veto power to the center to block any state support reforms.**
- **Reduced state revenues:** A large burden of the slowdown has been passed on to the states as the Centre has been steadily increasing cesses and surcharges to earn revenue.
- **Reduced parliamentary sovereignty:** GST council decisions are binding the parliament. This has reduced parliamentary sovereignty on the gst matters.
- **Fake firms:** Fake firms are registered with an aim to evade GST dues.
  - **The Central board of customs duties said that around 12,000 fake firms were registered and evaded around 22,000 cr worth of taxes.**

#### **Government measures GST reforms:**

- **GST compensation:** GST Compensation cess levies have been extended till at least March 2026, instead of the initial five-year tenure, due to the transitory shock of COVID-19 lockdowns on revenues.
- **GST network:** With the introduction of GST networks, the ease of payments has improved over time with the technical glitches having been slowly sorted out, leading to a record number of GST registrants – increasing from 1.08 crore in April 2018 to 1.36 crore in 2022.

**Dispute resolution:** The Finance Ministry notified the constitution of 31 Appellate Tribunals across 28 States and eight Union Territories for the Goods and Services Tax (GST) to resolve a growing number of taxpayer disputes with the Revenue Department.

- **Anti-Profitteering Measures:** To ensure that the benefits of GST are passed on to the consumers, the government established the **National Anti-Profitteering Authority (NAA)**.
  - NAA monitored and ensured that businesses do not engage in unfair pricing practices and profiteering due to the implementation of GST.
  - All GST anti-profitteering complaints are **now dealt with by the Competition Commission of India (CCI) from 1st December, 2022.** ★ ★ ★ SINCE 2006 ★ ★ ★
- **Sharing of data:** This new provision enables the sharing of information or details provided by taxpayers (such as particulars in their registration application, returns, e-invoice, e-Waybill, or any other prescribed documents) on the GST Common portal with other systems, subject to the taxpayer's consent.
- **Automated return scrutiny module:** This will enable the officers to **scrutinize GST returns of center-administered taxpayers** selected on the basis of data analytics and risks identified by the system
- **Lowering threshold for e-invoicing:** The government has also lowered the threshold for businesses to generate e-invoice for business-to-business (B2B) transactions **to Rs 5 crore from Rs 10 crore under GST.** The changes will come into effect from August 1.

#### **Way forward:**

- **Incentives to MSME:** Granting MSMEs an opportunity to avail of input tax credits on invoice receipts and relaxing corresponding requirements to further reduce the cost and compliance burden.

- **Reform in the vote power:** Instead of giving equal voting power to all the states, different voting powers based on the previous GST collection of the states can be a better reform to give greater role to big states.
- **Formation of sectoral committees:** Sectoral committees can be formed to discuss and address the sector specific concerns specifically the new age segments such as e-commerce, crypto currencies.
- **Weed out fake firms:** Tightening the registration process for entities in the Goods and Services Tax (GST) regime in order to keep out “fake” firms.

## 3.2 National Logistics Policy

### Why in the news?

- In September 2022, Prime Minister Narendra Modi unveiled the National Logistics Policy that seeks to address challenges facing the transport sector and bring down the logistics cost for businesses from 13-14% to a single digit.

### Major provisions of the policy

- **Objectives:**
  - To ensure **quick last mile delivery, end transport-related challenges, save time and money of the manufacturers, prevent wastage of the agro-products.**
  - Aims to **promote seamless movement of goods and enhance the competitiveness of Indian industries.**
- **Vision:**
  - The vision of NLP is **to drive economic growth and business competitiveness** of the country through an **integrated, seamless, efficient, reliable, green, sustainable and cost-effective logistics network** by **leveraging best in class technology, processes and skilled manpower.**
  - This will **reduce logistics cost and improve performance.**
- **Targets:**
  - (I) Reduce cost of logistics in India;
  - (II) Improve the Logistics Performance Index ranking – endeavor is to be among top 25 countries by 2030, and
  - (III) Create data driven decision support mechanism for an efficient logistics ecosystem.
- **Comprehensive Logistics Action Plan (CLAP):**
  - To achieve these targets, a Comprehensive Logistics Action Plan (CLAP) as **part of the NLP** was launched covering eight action areas including
    - (I) Integrated Digital Logistics Systems;

- (II) Standardization of Physical Assets and Benchmarking of Service Quality Standards;
- (III) Logistics Human Resource Development and Capacity Building;
- (IV) State engagement;
- (V) EXIM Logistics;
- (VI) Services Improvement Framework;
- (VII) Sectoral Plans for Efficient Logistics (SPEL); and
- (VIII) Facilitation of Development of Logistics Parks.

- **Goals:**

- To reduce the logistics cost from 16 percent of Gross Domestic Product (GDP) to **a global average of 8 percent by 2030.**
- It thus **aims to be among the top 25 countries by 2030** in the **Logistics Performance Index (LPI)**
  - According to the World Bank Logistics Index of 2018, India is ranked 44th in logistics cost.

- **The four significant steps to be undertaken for NLP include:**

- **Integration of Digital System (IDS):** There will be digital integration of different systems of seven various departments (like road transport, railways, aviation, commerce ministries and foreign trade)
- **Unified Logistics Interface Platform (ULIP):** This ensures shorter and smoother cargo movement and enables the exchange of information confidentially on a real-time basis. This National Industrial Corridor Development Corporation (NICDC) Logistics Data Bank Project has been leveraged.
- **Ease of Logistics (ELOG):** It will enable and ensure the ease of logistics business through transparency and accessibility.
- **System Improvement Group:** It will monitor all logistics-related projects regularly

**Merits:**

- **Help save time and money:** The policy aims to expedite the last-mile delivery, helping businesses save time and money.
  - Moreover, the reduced cost will also **increase efficiency efforts cutting across all sectors** of the economy, which **encourages value addition and enterprise.**
- **Capture world markets:** For Indian products to capture world markets, the country has to strengthen its support system. "National Logistics Policy helps in making the support system modern."
  - The **reduced cost** will increase the competitiveness of Indian products in both the Indian home market and the international market.

- **Combined effort:** The NLP's **transformational capacities further increase when combined with previous connectivity and infrastructure improvement programs** like:
  - The **Gati Shakti** Programme's goal is to implement **infrastructure connectivity, including roadways and railways projects** across the nation, in a coordinated manner.
  - **The Sagarmala** - envisions **using the potential of the coastline and waterways** to reduce the amount of infrastructure needed to reach their targets.
  - **The Bharatmala** - focuses on reducing critical infrastructure gaps to **increase the effectiveness of road traffic circulation** across the nation.
- **Knowledge hub:** The above core initiatives will help create a **single window e-marketplace** as a one-stop shop for relevant knowledge and information exchange that can ease logistics facilitation matters in the country.
- **Transformative approach:** The industry observers' are further sure that NLP will bring a brand-new transformative approach to the country's logistics ecosystem, **increasing the efficiency across supply chains.**
  - The new programme will enable a **modal shift in logistics away from the current over-reliance on roads** (over 60 per cent share currently versus 25 per cent globally) and toward railways (30 per cent currently versus around 60 per cent globally) and waterways, which presently have a 5 per cent share in the modal mix.
- **Unified regulatory environment:** NLP will promote the facilitation of a **unified regulatory environment and institutional framework governing the sector** that will **set up multi-modal logistics parks (MMLPs)** as key markets.
  - This will **ensure faster first and last-mile connectivity**, and as logistics improve, the export-import, manufacturing, cold storage, and industries will also grow.

#### **Criticisms:**

- **Rigidity in adopting digitization:**
  - Several platforms will be integrated into the ULIP, which will be a **cumbersome task.**
- **Execution:**
  - All these goals will not serve the purpose **if implementational challenges are not overcome.**
  - These challenges could be in terms of:
    - On-time completion of infrastructural projects,
    - Enabling a secured database of data when the entire process chain is made digital,
    - Absence of adequate complementing services such as storage facilities, warehouses, and so on.

- **Sustainability and Greening of the Logistics industry:**

- The Indian logistics industry is heavily dependent on roads, and the transportation sector is one of the **leading contributors to global carbon emissions**.
- It is necessary to examine the existing supply chain networks and undertake sustainable actions such as consolidation of freight, balancing different modes of transportation, warehouse space optimisation, and data-enabled decision-making.

- **Working model of the logistics industry:**

- There are **no uniform acceptable standards of pricing** in the industry, with different operators charging different prices.
- There is a **need to explore benchmark pricing policies** while giving enough flexibility.
- Further, the **fleet of most logistics transportation is old** and caters only to certain specific types of goods.
- It is adopting newer fleet models that are greener, cost-efficient and can carry any type of goods. Government subsidies & incentives to adopt such a fleet can go a long way.

**Way forward:**

- **Smart warehouses:**

- Environment-friendly warehouses use efficient energy management systems (EMSs) for the conservation of energy.
- With the combination of timers, thermostats, and gauges for all forms of fuels and power consumption, modern EMSs plan best practices of consumption, control wastage, and manage fuel costs.

- **Alternative fuels:**

- The government is pushing the **adoption of LNG and EVs fast in the sector**.
- It is said that sustainable fuels such as **biodiesel, electric fuel, ethanol, hydrogen, methanol, natural gas**.

- **Green or eco-friendly logistics:** NITI Aayog's report 'Transforming Trucking in India' projects that the **adoption of zero-emission trucks can avoid 838 billion litres of diesel consumption cumulatively by 2050**, resulting in upward of **\$1.5 trillion of reduced oil expenditures**.

- **Reverse logistics:**

- All elements of reverse logistics can have green implications.
- Globally the phenomenon is catching up and hopefully soon in India too.

- Reverse logistics by definition is a **process by which companies can recycle, refurbish and reuse, thereby guaranteeing a certain level of green in their supply chain management.**

- **Digitisation:**

- **Digital tools and platforms** help in conserving resources.
- Transporters can have an **access to emissions, resources, and costs**, thereby giving them the opportunity to achieve carbon neutrality.
- **Intelligent transportation, route planning, and demand planning** are a result that can help in increasing operational efficiencies.
- Fast adoption of digitization and adoption in warehouses **help in scaling inventory management.**

**About India's logistics status:**

- As per the estimates, the **worth of the Indian logistics market will be around \$ 215 Bn in the next two years** compared to \$ 160 Bn.
- Investment Information and Credit Rating Agency of India Limited (ICRA) estimates that the sector **will develop at a Compound Annual Growth Rate (CAGR) of 10.5 percent through 2025** after growing at a CAGR of 7.8 per cent over the past five years.
- This sector **employs more than 22 million people** in India, which **through skill development** is expected to **grow at the rate of 5 per cent in 5 years.**

### 3.3 Digital Public Infrastructure

**Why in the news?**

Recently in the New Delhi Leaders' Declaration stated the G20 countries recognised that safe and trusted deployment of digital public infrastructure (DPI) can "enable service delivery and innovation".

**What is Digital Public Infrastructure?**

- DPI is a combination of:
  - Networked **open technology standards built for public interest,**
  - **Enabling governance,**
  - A community of **innovative and competitive market players** working to drive innovation, especially across public programmes.

**Significance of Digital Public Infrastructure in India:**

- **Identification:** The ability for people and businesses to securely verify their identity, as well as complementary trust services such as electronic signatures and decentralized, verifiable credentials (e.g., academic qualifications, passports, and driver's licenses).
  - **Eg: Aadhar, Parivar Pehchan Patra (Family ID) in Haryana, Jan Aadhaar Resident Data Repository and the Jan Aadhaar Card in Rajasthan, and State Family Database and the Makkal ID in Tamil Nadu**
- **Payments:** Easily transferring money between people, businesses, and governments.
  - **Eg: UPI payment**
- **Data exchange:** Seamless flows of data across government and the private sector, with safeguards for personal data protection like consent.
  - **Eg: IUDX- Indian Urban data exchange, ADEX- Agricultural data exchange.**
- **Financial Inclusion:** Through initiatives like the **Aadhaar-enabled Payment System (AePS) and Direct Benefit Transfer (DBT)**, DPI plays a pivotal role in financial inclusion, ensuring that welfare benefits, subsidies, and financial services reach the intended beneficiaries directly and securely.
- **E-governance and Transparency:** It enables transparency and accountability in government operations.
  - **Eg: DBT, Linking Aadhar with PDS cards.**
- **Education and Skill development:** DPI is being used to avail advanced education and skill development through various platforms.
  - **Eg: SWAYAM- Online courses.**
- **Healthcare:** It is important for promoting health at individual, community and national level.
  - **Eg: CoWin platform, Unified Health Interface (UHI), eSanjeevani**

#### How does it help in financial inclusion?

- Financial inclusion is the **availability and equality of opportunities to access financial services**. It refers to a process by which individuals and businesses can access appropriate, affordable, and timely financial products and services which include banking, loan, equity, and insurance products.
- **Digital Identity:** Digital identity makes **access to financial service easier** for individuals.
  - In India over 10 years after launching its digital identity system, the number of **adults with bank accounts more than doubled, to 78%**, and women's account ownership grew even faster, from 26% to 78%.
- **Digital payment platforms:** DPI plays a crucial role in creation of digital payment platforms like **UPI, mobile wallets, payment apps**.

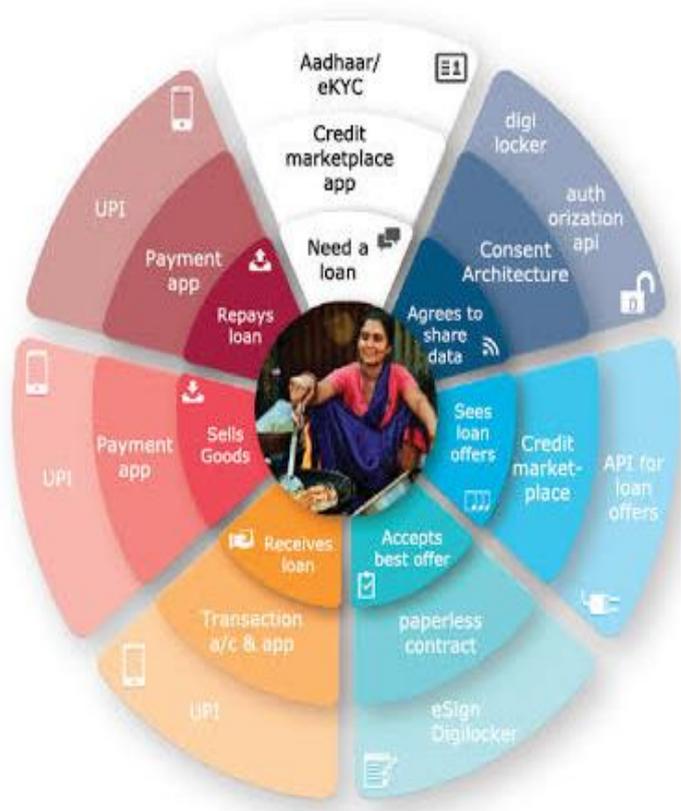
- These platforms enable the payment digitally at the fingertip without visiting the physical bank.
- **Direct Benefit Transfer:** Government subsidies, welfare benefits and other payments are directly credited into the beneficiary bank accounts.
  - These measures **ensure transparency and help to avoid leakages** in the system.
- **Aadhar enabled Payment System (AePS):** It helps in the mission of **Cashless India**.
  - It is a bank led model which allows **online interoperable financial transactions at PoS (Point of Sale / Micro ATM)** through the Business Correspondent (BC)/Bank Mitra of any bank using the Aadhaar authentication.

### Challenges in developing such infrastructure:

- **Monopoly and colonization:** Like in the case of physical infrastructure, it is **important that DPIs not succumb to monopolization, authoritarianism and digital colonization**.
  - This can only happen through a partnership of public policy and public technology, i.e., through a techno-legal framework.
- **Incidental exclusion:** Eligible citizens could be excluded at any stage of welfare delivery.
  - It could arise from **data mismatches, transaction failures, or citizens' inability to access delivery channels**.
- **Unintended issues:** DPI systems could create unintended but **significant inefficiencies of time, cost, and effort for marginalized citizens**.
  - Digitisation could create rigidity in the delivery mechanisms, reducing the scope for human discretion.
  - Combined with digital illiteracy, **lack of awareness and resource constraints, this could further cause exclusion**.

### Government measures:

- India, through **India Stack**, became the **first country to develop all three foundational DPIs**:
  - Digital identity- Aadhar,



- Real-time fast payment- UPI
- Platform to safely share personal data without compromising privacy- Account Aggregator built on the Data Empowerment Protection Architecture or DEPA.
- State and central governments developed infrastructure projects like
  - **State-wide area networks,**
  - **Common Service Centres (CSCs),**
  - **State Data Centres (SDCs),**
  - **Several Mission Mode Projects (MMPs).**
  - The objective was to create the necessary infrastructure and software development in various domains.
- **Aadhaar:**
  - Aadhaar was developed as a **next-generation digital ID, offering authentication as a service.**
  - Being a **bonafide proof of identity** residing on the cloud, it could be plugged into any service delivery transaction to verify an individual's identity.
  - It soon began to be **used for multiple service deliveries, like opening bank accounts, obtaining mobile SIMs, or receiving ration.**
- **Direct Benefit Transfer:**
  - A massive programme of Direct Benefit Transfers (DBT) also began, resulting in huge savings for the government.
  - **Payment of subsidies directly into bank accounts eliminated the black marketing of commodities,** with LPG cylinders being the best example.
- **Other measures:**
  - Products like the **Digital Locker, electronic KYC (eKYC) and digital signature on demand (e-Sign)** were developed in addition to Aadhaar.

#### Way forward:

- **Addressing incidental exclusion:** Instituting multiple, deep, offline access infrastructures to support the online access points and designing for the differently abled could help address incidental exclusion.
- **Need to be responsible with citizens data:** The DPI systems must be developed **within a legislative framework.**
  - Provisions should be laid down for **protecting data and preserving privacy.**

- For instance, privacy-by-design provisions such as **privacy impact assessment, informed consent, purpose and collection limitation, data encryption and breach notifications** must guide the operations of citizen databases.
- **Tackling inefficiency:** Simple procedures with well-established exception-handling mechanisms, intuitive citizen interfaces, and availability of trained staff at physical touch points could overcome these potential sources of inefficiency.
- **Building trust:** Building trust among the public could go a long way in reaping the benefits of DPI systems.
  - Building trust in the context of DPI has many dimensions—from **data security and privacy to institutional accountability and grievance redressal, to proactive communication and change management.**
- **Principles to be incorporated:** ‘Security-by-design’ and ‘privacy-by-design’ principles, which include both technological and policy choices, can be incorporated at all stages of the development of the DPI.
- **Effective implementation:** Effective implementation of DPI will result in **significant changes in the roles of last-mile government functionaries**, as well as the processes through which citizens interface with the state.
- **Enabling collaboration through open technologies:** The adaptability of open technologies will be useful in **creating customized solutions tailored to local contexts.**

### 3.4 Fertilizer self sufficiency

#### Why in the news?

- Recently, Russia declined to give a discount to India for its fertilizer’s imports.

#### Fertilizer production in india:

World’s 2 <sup>nd</sup> largest consumer	32.55 MMT (N+P <sub>2</sub> O <sub>5</sub> + K <sub>2</sub> O)
World’s 3 <sup>rd</sup> largest producer	18.48 MMT (N+P <sub>2</sub> O <sub>5</sub> )
World’s largest importer	10.90 MMT (N+P <sub>2</sub> O <sub>5</sub> + K <sub>2</sub> O)

Nutrient	Production	Import	Consumption* (MMT)
N	13.74	5.66	20.41
P <sub>2</sub> O <sub>5</sub>	4.74	2.55	8.98
K <sub>2</sub> O	-	2.69	3.16
Total	18.48	10.90	32.55

### Main issues:

- **Russia**, largest Fertilizer exporter to India refused to give a discount to its Fertilizers export to India.
- **China**, which is the second largest Fertilizer exporter, imposed curbs on fertilizer exports to manage its domestic price rise.
- **High subsidy**: In recent years, the government was forced to increase the Fertilizer subsidy.
  - **Eg: Fertilizer subsidy in 2017 was 66,000 cr, but in 2022 it was around 2.2 lakh cr.**

### Consequences:

- **High import cost**: India which imports around 60% of its Fertilizer consumption has to pay more cost.
  - It can widen the current account deficit and high outflow of foreign reserves.
- **Unsustainable supply**: Fertilizer exports can be disrupted due to political and economic issues in export countries.
  - **Eg: War in Ukraine and domestic price rise in China disrupted the fertilizer export to India.**
- **Food inflation**: Disruption of Fertilizer supply will heavily impact crop production and will increase food inflation.
- **Food insecurity**: Food security can be compromised due to the high price of fertilizer and subsequent lower crop production.
  - **80% of the people in India are covered under the national food security scheme.**
- **High input cost**: Increase in production cost of farmers along with already low output due to climate related impacts (El-nino condition in India).
- **Subsidy burden**: High international prices will increase the subsidy burden of the government.
  - **Eg: Fertilizer subsidy for the government is around 2.2 lakh crore in FY2023.**
- **Ripple effect**: Consequences of high price and food inflation can hurt macroeconomic stability of the country.

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### Government measures to increase domestic production of fertilizers:

- **One nation one Fertilizer**: It was launched in 2022. This scheme was started to increase the cross country availability of the fertilizers In hassle free manner.
  - This can increase the fertilizer manufacturing ecosystem of the country.
- **Neem coated urea**: It was launched in 2015 to promote the production of neem coated urea to increase the efficiency of the urea.
- **Nutrient based subsidy scheme**: It was launched in 2010 to provide subsidies to the Fertilizer manufacturers to increase the production of non urea fertilizers..
  - It ensures availability of fertilizers to farmers at an affordable price.
  - It mainly covers Nitrogen, Phosphorous, Potash and Sulphur.
- **Liquid nano urea**: Liquid nano urea was launched to increase the efficiency of the Fertilizer usage and also reduce the import dependency.
- **National urea policy (2015)**: This policy advocates increasing urea production, efficient urea consumption and rationalizing the fertilizer subsidy burden.

### **Urea subsidy:**

- The Centre pays a subsidy on urea to fertilizer manufacturers on the basis of cost of production at each plant and the units are required to sell the fertilizer at the government-set Maximum Retail Price (MRP).

### **Urea gold:**

- It was launched in 2023 by infusing urea with sulfur.
- It is a composite fertilizer with 37% urea and 17% sulfur.

### **Way forward:**

- **Reduce fertilizer consumption:** Government should promote awareness on judicious usage of fertilizers among farmers.
- **Promote bio Fertilizer:** Farmers should be encouraged to use natural and bio fertilizers.
  - **The PM PRANAM scheme should be used effectively to ensure the use of bio fertilizer.**
- **Organic farming:** Organic farming such as natural farming should be encouraged among the farmers.
  - This can reduce input cost and increase the profit to the farmers.
- **Reduce subsidy burden:** Integration of direct benefit transfer scheme with the fertilizer subsidy to reduce subsidy leakage and subsequent reduction in the subsidy burden.
- **Incentive schemes:** Incentive schemes like PLI can be introduced to the Fertilizer sector to increase the domestic production.

### **Fertilizer consumption:**

#### **Urea:**

- India consumes 36 mt urea annually
- It imports 7 mt of urea or 20% of total consumption.
- India is the largest importer of urea.
- India consumes urea as 50% of its total fertilizer consumption.

#### **Di ammonium phosphate:**

- India consumes 12 mt DAP annually
- It imports 7 mt or 65% of DAP.
- All india use of NPK ratio is around **7:3:1**.
- Annual government subsidy to Fertilizer is ₹1.6 lakh cr.

## 4. ENVIRONMENT

### 4.1 Carrying capacity of Himalayan states

#### Why in the news?

- Recently, the Centre has proposed forming a 13-member technical committee to evaluate the "carrying capacity" of 13 Himalayan States.

#### What is carrying Capacity?

- The carrying capacity is the maximum population size that an ecosystem can sustain without getting degraded.

#### What are the major threats to the carrying capacity of Himalayan states?

- **Heavy constructions:** Heavy construction activities in violation of ecological norms and recommendations of expert geologists and environmental scientists.
- **Overcrowding:** Population in many hill states has exceeded their carrying capacity.
- **Unplanned growth:** Major allegation is unplanned development of the Himalayan region without considering the ecological potential of the region.
- **Unregulated tourism:** According to the National disaster management authority, Himalayan states are being burdened beyond their capacity by unregulated tourism.
- **Number of tourists per month in Uttarakhand is 16 lakh against the NDMA recommendation of 1 lakh.**

#### Consequences:

- **Loss of human lives:** Due to disasters such as landslide, cloud bursts, around 102 people died in 2023 in the Himalayan states.
- **Increasing the disaster intensity:** Unregulated developments in the Himalayan areas pave the way for the disasters like flash floods, glacial retreat, etc.
- **Frequent landslides:** Most of the current landslides coincide with the areas where the roads are widened almost to four lanes.
- **Land use change:** High inflow of people into the region alters the land use pattern like shift in agriculture pattern and road developments in the Himalayan states.
- **Biodiversity loss:** Rare medicinal plants are facing a serious extinction threat.
- **Local ecosystem change:** An attendant problem of higher footfall is the generation of huge amounts of waste including plastics have serious implications for the local ecosystems.
- **Unplanned development:** High inflow of people into the region also requires unsafe infrastructure development in the region.

#### How does understanding of carrying capacity is vital in planning for sustainable development of a region?

- **Restricted development:** Assessing the carrying capacity of the ecosystem can be used for the planned and restricted development in the Himalayan states.
- **Settle out people and relocate people:** The study can be useful to relocate people in the safer areas.
- **Realign tourism plan:** Tourism sector will be realigned based on the new study of the ecological sustainability of the region.
- **Restructure mining and industrial plan:** Economic activities such as mining and industrial activities will be restructured based on the carrying capacity of the region.
- **Better disaster management:** Creation of buffer zones and eco sensitive zones can be used for better disaster management.
- **Adopt growing climate risks:** Proper assessment and planning will be used for the states to adopt for the growing climate risks.

#### **Steps taken by government to address this issue:**

- **The National Mission for Sustaining the Himalayan Ecosystem:** It is one of the eight missions under the National Action Plan on Climate Change.
  - This scheme ensures the sustainable development in the Himalayan regions.
- **Secure Himalayan region:** This scheme was started to promote the ecosystem based land use pattern and conservation of local biodiversity and ecosystem.
- **State specific action plans:** State level committee headed by chief secretary to make state specific plans to conserve Himalayan ecosystem.
- **Technical committee to assess Himalayan region carrying capacity:** Committee headed by the Director of the G.B. Pant National Institute of Himalayan Environment would be the lead in assessing carrying capacity and the carrying capacity of all 13 Himalayan States.
- **Indian Himalayan Climate Adaptation Programme:** The Indian Himalayas Climate Adaptation Programme (IHCAP) aims to enhance the resilience of vulnerable communities in the Indian Himalayas through strengthening the capacities of Indian institutions in climate science, with a specific focus on glaciology and related areas,

#### **Way forward:**

- **Himalayan commission:** The government should establish an independent Himalayan Commission that can permit, regulate and prohibit various shapes and forms of development.
- **Regional developmental plan:** The cities should have a master plan, area development plan, or a zonal development plan to ensure planned growth.
- **Tourism regulation:** Fix a cap on the inflow of tourists and vehicles and take corrective measures to preserve the ecological balance around these places.
- **Assessment of ecological capacity:** Proper assessment of carrying capacity of all ecologically fragile areas, hill stations, high-altitude areas, highly visited areas and tourist destinations in all the 12 states/UTs in the Himalayan region.
- **Supporting infrastructure:** Halting construction projects in areas where the carrying capacity is exceeded and creating supporting infrastructure to mitigate the adverse effects of the disasters.

- **Awareness generation:** Building awareness on climate change and its impacts among the population and communities in general.
- **Eco sensitive zones:** State governments should assess the region and declare eco sensitive zones with the creation of buffer zones.
- **People centric assessment:** The assessment committee should include social and environmental activists also.
  - Local people should also be included into the committee to evaluate the social carrying capacity of the himalayan region.
- **Local area specific assessment plan:** Panchayat samitis can be asked to assess the carrying capacity of the local area. This local area specific assessment can be useful to evaluate the social and economic carrying capacity of the himalayan region.

## 4.2 Death of Big cats

### Why in the news?

- Recently a total of 10 tigers (six cubs and four adults) have died in the Nilgiris. The six tiger cubs died in two separate incidents, while the four adult tigers died in four separate events, with at least one suspected to have been poisoned.

### Role of Tiger and Cheetah in forest ecosystem:

- **Regulating prey population:**
  - By preying on herbivores, tigers help to keep the balance between the prey animals and the forest vegetation which they feed upon.
  - Cheetahs by preying on Herbivores control their population and prevent overgrazing and habitat destruction in certain areas.
- **Scavengers:** Tigers also serve as scavengers consuming dead animals. This behavior helps prevent the spread of disease by removing dead from the ecosystem.
- Tigers and Cheetah are **Umbrella species**- protecting these species indirectly protects many other species that make up the ecological community of its habitat.
  - Tigers conservation helps in reviving forest ecosystems and the species found in them.
  - Cheetah conservation will revive grassland ecosystems and their biomes and habitat.

### What are the reasons for tiger death in Nilgiris?

- Cubs died due to **starvation or umbilical infection.**
- **High density of tigers** in the Mudumalai-Bandipur-Nagarhole complex of the Nilgiri Biosphere Reserve is pushing populations into the surrounding habitats in the Mukurthi National Park, Nilgiris

and Gudalur forest divisions leading to increased competition between animals and more fighting, resulting in more deaths.

- Due to **poisoning** of a cow that had been preyed upon.

#### **Are the reasons similar to the death of Cheetahs under Project cheetah?**

- No, the reasons for death are different for both the species.

#### **Project Cheetah:**

- A total of 20 radio collared Cheetahs were brought **from Namibia (8 cheetahs) and South Africa (12 cheetahs) to Kuno National Park, Madhya Pradesh**, in a first ever transcontinental wild to wild translocation on September 17, 2022.

#### **Reasons for death of Cheetahs under Project Cheetah plan:**

- Experts claimed that deaths were **due to Maggot infection caused by the radio collar** on the animal's neck.
- While preliminary analysis by NTCA concluded that all mortalities are due to **natural causes**.
- It is believed that cheetah fatalities were due to their natural process of **developing thick coats of fur** in anticipation of African winter.

#### **Measures taken to avoid the loss in both cases:**

- Steps are being undertaken by the Forest department to **keep a check** on the tiger mortality in the core reserve areas in Nilgiris.
- **Routine patrolling and special combing operations** are being done for constant monitoring of the species.
- **Preventive measures** are to be undertaken to prevent human interference.
- Experts suggested to the government, the measures like **shaving off the winter fur** to be able to deal with any kind of infection to prevent further Cheetah deaths,

#### **Way forward**

- **Reducing the density of tigers:** From the area where the population has exceeded the carrying capacity of the region is crucial.
- **Avoiding Human-Animal conflict:** Ensuring healthy and adequate prey populations to avoid the incidents of animals venturing into the area of human settlements can prevent the death of tigers and cheetahs as well as livestock and human life.
- **Conducting proper investigation:** Regarding the cause of death of the species can help in preventing similar incidents in the future.
- **Expert suggestions:** Given priority to carrying out intercontinental translocation projects to understand the possible implication of relocating the species to a different climatic region.

- **Stringent measures** to prevent poaching of animals are to be undertaken.

### 4.3 Ecocide

#### Why in the news?

- Recently, some environmental activists described that the Maya train project of Mexico as a "megaproject of death" because it imperils the Yucatán peninsula and its rich wilderness, ancient cave systems, and Indigenous communities.
  - The Tribunal for the Rights of Nature in August said the project caused "crimes of ecocide and ethnocide".

#### What is ecocide?

- It is an unlawful act committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.

#### What are the issues in incorporating ecocide in the legal framework?

- **No global consensus:** There is no global consensus on the definition of the ecocide.
- **Investment disruption:** Governments fear that the ecocide legislation could hamper the investments.
- **Wide definition:** Definitions such as long term damage and wide area damage are very wide and calculation of the long term damage is also an issue.
- **Jurisdictional issues:** Experts have noted that most environmental 'crimes' are transnational in nature and it will lead to jurisdictional issues.
  - **Eg: Many countries dump their plastic and e wastes into the ocean, which affects the livelihood of other countries' people.**
- **Issues in regulating corporations:** Corporations have private or State-owned corporations in other countries which are not members of the **Rome Statute** that are responsible for polluting activities.
  - **Eg: Coca Cola has polluted ground water in India, but India is not a member of the Rome statute.**
- **False allegations:** It can be used as a tool in the war.
  - **Eg: Ukraine made allegations against Russia on the Kakhovka dam Collapse.**
- **Multiple of stakeholders:** It involves a variety of stakeholders and can't punish one company or a government body.

#### India's stance:

- **Environmental protection laws:** India already has laws and regulations regarding the protection of the environment.
  - **Eg: Environmental protection act, Air act, wildlife protection act and water act are examples.**

- **Legal right to nature:** Some Indian judgments have affirmed the legal personhood of nature by recognising rivers as legal entities with the right to maintain their spirit, identity, and integrity. It

**Way forward:**

- **Consolidation of environmental acts:** The separate environmental laws have to be consolidated into a unified code and institutions have to be streamlined.
  - So the debates like the one about ecocide and rights of nature find their proper way through legal channels.
- **Eco centric approach:** Supreme Court argued that environmental justice could be achieved only if we drift away from the principle of anthropocentric to ecocentric.
- **Expansion of the present statutes:** The jurisdiction of the National Green Tribunal should be expanded to include the Wildlife (Protection) Act 1972, the Indian Forest Act 1927, and other State-enacted laws.

**About Mexico's Mega train project:**

- It is also known as Tren Maya.
- It is Pharaonic project”, with a route spanning 1,525 km, connecting tourists in the Caribbean with historic Maya sites and costing \$20 billion to build.
- It was launched in 2020.



**4.4 Global Biofuel Alliance**  
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**Why in the news?**

- Recently, the global biofuel alliance was formed by India, Brazil and the US.

**Significance of Global biofuel alliance for India:**

- **Technology transfer:** Through this alliance India can get technologies to efficiently convert biomass into fuel.
- **Financial support:** Sustainable fund support will be ensured through this alliance.
- **Supply chain:** This alliance can create a sustainable biofuel supply chain which will ensure uninterrupted supply of biofuel.
- **Net zero carbon emission:** Combined efforts of this alliance can help India to achieve its ethanol blending target and net zero emission target.
- **Private investment:** Large scale private investments can be garnered through this forum as it is a forum of governments and private industries etc.

- **Virtual market place:** It will facilitate mobilizing a virtual marketplace to assist industries, and key stakeholders in mapping demand and supply.
- **Expert hub:** It will act as an expert hub and central repository of knowledge related to biofuels.
- **Economic opportunities:** According to the biogas association, it will generate \$500 bn worth of economic opportunities.

#### **Issues in biofuel production in India:**

- **1G biofuel:** India is mostly producing first generation biofuel , which is produced mainly from food grain crops.
  - **Sugar cane and rice are mostly used to produce biofuels.**
- **Groundwater depletion:** Most of the biofuel crops such as rice, sugarcane are water intensive.
- **Food shortages:** Diversion of food grains to biofuel production can increase the food insecurity level.
- **Capital intensive:** Vehicles with internal combustion engines need to modify their engine system for biofuels.
- **Mono crop farming:** High support to first generation biofuels can lead to mono crop practice among the farmers.
- **Poor efficiency:** Energy efficiency of biofuels is lower than fossil fuel energy. This can make biofuels costlier than fossil fuels.

#### **Government measures to increase the biofuel production:**

- **Ethanol blending program:** Target of blending 20% ethanol with petrol boosts the biofuel production.
- **Global biofuel alliance:** India is the founding member of the Global Biofuel Alliance to ensure the sustainable production and supply of biofuels.
- **Pradhan Mantri JI-VAN Yojana(2019):** The scheme was launched to create an ecosystem for setting up commercial projects and to boost Research and Development in the 2G Ethanol sector.
- **GOBAR Dhan , 2018:** One of the objectives of the scheme is converting cattle dung and solid waste in farms to useful compost, biogas and bio-CNG.
- **National policy on biofuel, 2018:** This was launched in 2018 to promote the biofuel production and usage ecosystem.
  - Expand the sources of biofuel crops
  - Establishment of biofuel coordination committee

#### **Way forward:**

- **Incentive scheme:** Government should provide incentives like PLI scheme to manufacturers to produce biofuels.
- **2G biofuel:** Sustainable biofuels are produced from crop residues and other wastes, with low water and GHG footprint.
- **Decentralized biofuel production:** Decentralized construction of waste to biofuel manufacturing plants should be set up at each gram panchayat.
  - This will encourage farmers to use their crop waste to produce biofuel.

### About Global Biofuel Alliance:

- Founding members of the alliance: **India, Brazil and USA.**
- The three founding members of the alliance, **the US, India and Brazil contribute about 85% of the global production and the 81% of consumption of ethanol.**
- So far **19 countries and 12 international organizations** have joined in this initiative.
- **Membership is open** to all the countries.
- **Aim:** To help boost demand and technology transfer for the production of biofuels and enhance trade.

### About ethanol production:

- The government has advanced its target to achieve 20% ethanol blending in petrol by 2025-26 from an earlier target of 2030.
- The target of petrol supplies with 10% ethanol blending was achieved in 2022.

## 5. SCIENCE AND TECHNOLOGY

### 5.1 Nuclear Power Plants

#### Why in the News?

- Recently, amid strong backlash from the public and neighbouring countries, Japan began the release of contaminated water from the Fukushima nuclear plant into the sea.

#### Is Nuclear Power Plant Safe?

- According to IAEA, Nuclear power plants are among the safest and most secure facilities in the world.
- To minimize the likelihood of an accident, the IAEA assists member states in applying international safety standards to strengthen nuclear power plant safety.
- With stringent regulation and safety systems ensured by the government agencies, the Nuclear power plants are the safest mode of energy production.
- But some disasters do happen due to natural disasters, human error or equipment malfunction.
  - **Chernobyl disaster (1986):** The explosion and fire at the Chernobyl Nuclear Power Plant in Ukraine resulted in a significant release of radioactive materials, causing immediate deaths and long term health effects.

- **Fukushima disaster (2011):** The nuclear accident following a massive earthquake and tsunami in Japan led to multiple reactor meltdowns, releasing radioactive materials and causing widespread evacuations.

### **What is the recent issue in the Fukushima Nuclear power plant?**

- The catastrophic 2011 earthquake and tsunami disabled the Fukushima Daiichi nuclear power plant, leading to the release of radioactive materials resulting in Wastewater.
- On April 13, 2021, Japan's government announced plans to release over one million tonnes of contaminated water from the Fukushima nuclear plant into the sea over the next 30 years because they are running out of store space and allege that the water is treated and safe to release.

### **Significance of Nuclear Power Plants in India:**

- **Cost effective:** Nuclear power plants are cheaper to operate than coal or gas plants, despite the cost of managing radioactive fuel and disposal.
  - Estimates show that nuclear plants cost only 33-50% of a coal plant and 20-25% of a gas combined-cycle plant.
- **Resource availability:** Thorium availability makes nuclear power plants a viable alternative to the coal based thermal power plant.
  - India is a leading country in Thorium resources and it is found in the Monazite sands of coastal regions of South India.
- **Electricity and Energy security:** Nuclear power provides for a stable and reliable source of electricity that is less dependent on imports and fluctuating fuel prices.
  - Plays crucial role in India's electricity generation mix and to attain the target of **50% cumulative electric power installed capacity from non fossil fuel based technology by 2030.**
  - Nuclear energy is the **fifth-largest source of electricity** for India which contributes about **3% of the total electricity generation** in the country.
- **Environmental significance:** Nuclear power is a low carbon energy source and will help in reducing India's carbon footprint and achieve **INDC target of Reduction in Emission Intensity by 45%.**
- **Technology development and Job Creation:** India's nuclear program led to significant advancement in nuclear technology, research and development.
  - Helped in building expertise in nuclear science and engineering, skilled professionals and provided employment opportunities for scientists and engineers.

### **Challenges in Operating Nuclear Power Plants:**

- **Radiation Management:** The danger of radioactivity always persists in the nuclear station (in spite of utmost precautions and care).

- Working conditions in nuclear power stations are always detrimental to the health of the worker.
- **Economic Viability:** The capital cost of a nuclear power station is always high.
  - The maintenance cost is always high- due to lack of standardization and high salaries of the trained personnel in this field of specialization.
- **Technical Challenges:** These plants cannot be operated at varying load efficiently
- **Nuclear Waste Management:** Handling and storing radioactive waste generated is a long term challenge.
  - The disposal of fission products is a big problem.
- **Public perception and Acceptance:** Public skepticism and opposition due to safety concerns and the potential for accidents are high.
- **Decommissioning:** Once the power plant reaches the end of its operational life, decommissioning it safely and effectively is complex.

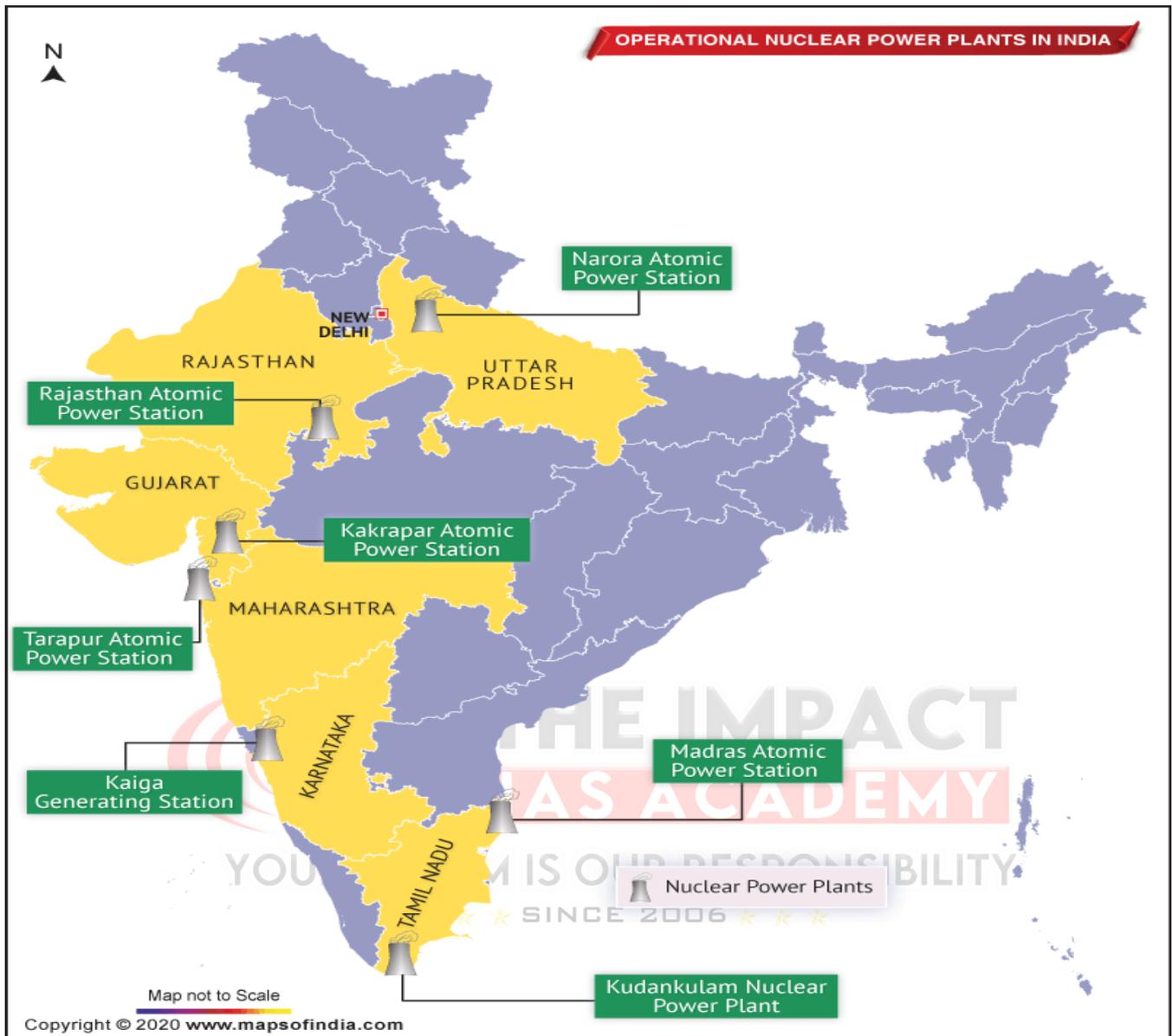
#### Way Forward:

- **Enabling policy framework:** The government should focus on creating frameworks and support mechanisms that encourage the growth of low-carbon, firm, and reliable energy sources, including nuclear.
- **Advanced reactor technologies:** Reactor designs that are safer, efficient and produce less long lived nuclear waste is important.
  - Small Modular Reactors (SMR), Thorium based reactor and Fast breeder reactors should be prioritized.
- **Waste management:** Research into advanced waste recycling techniques and establishment of permanent geological repositories can be a solution to the waste management problem.
- **Integration with renewables:** Nuclear power has to be complemented with other renewable energy like Wind, Solar to provide uninterrupted energy supply.
- **Ensure competition:** Allowing other government companies and private players into the nuclear domain would ensure competition and lead to emergence of new technologies.

#### List of Nuclear Power Plants in India:

- Presently, India has 22 nuclear power reactors operating in 7 states, with an installed capacity of 6780 MegaWatt electric (MWe).

- 18 reactors are Pressurized Heavy Water Reactors (PHWRs) and 4 are Light Water Reactors (LWRs).



## 5.2 MS Swaminathan and Green Revolution

### Why in the news?

- Recently, Mankombu Sambasivan Swaminathan, popularly known as M.S. Swaminathan, the legendary agricultural scientist and a key architect of the country's Green Revolution, passed away at his residence in Chennai on September 28, 2023 following age-related issues.

## What is the Green Revolution?

- The Green Revolution was a period that began in the **1960s** during which **agriculture in India was converted into a modern industrial system** by
  - Introducing a **new genetic strain or 'plant type'** responsive to **increased fertilizer and water application**
  - Involving the provision of **high-yielding variety seeds**, adequate irrigation facilities and fertilizers to Indian farmers in regions of Punjab, Haryana and western Uttar Pradesh primarily.
  - **Increased land area under farming.**
  - **Double- cropping:** Planting two crops rather than one, annually.

## Need for the Green Revolution:

- **Colonial factor:** Post-independence, Indian agriculture was not very productive.
  - Years of colonial rule impacted its development and the nation lacked the resources to modernize the sector.
  - As a result, crops necessary for staple foods also had to be imported from countries like the US.
- **Frequent famines:** India was leading a "ship-to-mouth existence". We had to depend on PL480 wheat from the US.
  - In 1966, a year that also saw severe drought, 10 million tonnes of PL480 wheat were imported.
- **Low Productivity:** Traditional wheat and rice varieties were tall and slender.
  - They fell flat on the ground when they grew and were heavy with well-filled grains produced due to high fertilizer doses.

## Outcomes of the Green Revolution:

- After the green revolution, the **production of cereal crops tripled** with only a 30% increase in the land area cultivated.
- Lead to an **increase in food grain production**, especially in Punjab, Haryana, and Uttar Pradesh.
- There were **significant impacts on poverty reduction and lower food prices.**
- Studies also showed that without the green revolution, caloric availability would have declined by around 11 - 13%.
  - These efforts **benefitted all consumers particularly the poor.**

- The green revolution helped India **move from a state of importing grains to a state of self-sufficiency**
- There were further **improved returns to the crop improvement research.**
- It also **prevented the conversion** of thousands of hectares of land for agriculture.

#### **Criticisms on Green Revolution:**

- **Increased regional disparities:** Green revolution spread only in irrigated and high rainfed potential areas.
  - States like Punjab, Haryana, Uttar Pradesh, etc. having good irrigation and other infrastructure facilities were able to derive the benefits of the green revolution and achieve faster economic development while other states have recorded slow growth in agriculture production.
- **Environmental damage:** Intensive cultivation of land without conservation of soil fertility leads ultimately to the **springing up of deserts.**
  - **Indiscriminate use** of pesticides, fungicides and herbicides, and unscientific tapping of underground water leading to **soil degradation, loss of biodiversity.**
  - **Increased stubble burning** in areas like Punjab and Haryana lead to severe air pollution in Delhi regions.
- **Financial problems:**
  - **Increased dependence on money lenders:** To pay for expensive pesticides and irrigation systems leading to increased borrowing to finance from money lenders and getting into the **debt trap** to change from traditional seed varieties.
  - **Benefiting the already prosperous farmers** as it was introduced in states with higher productivity.
- **Extinction of Indigenous varieties of crop:** India lost almost 1 Lakh varieties of indigenous rice.
  - There was reduced cultivation of indigenous varieties of rice, millets, lentils etc.
- **Food consumption pattern:** Traditionally, Indians consumed a lot of millets, but this became mostly fodder after the green revolution
  - The Food and Agriculture Organization (FAO) has recorded that over the years 1961 - 2017, there are a decrease in the production of millets and an increase in the production of rice
  - It **failed to provide a diverse diet** but provided increased calorie consumption.

#### **Measures taken by the government to address the challenges arising out of the green revolution**

- **Green revolution –Krishonnati yojana:** Approved coterminous with the period of the Fourteenth Finance Commission from **2017-18 to 2019-20.**

- 'Green Revolution– Krishonnati Yojana' is an Umbrella Scheme comprising both Central Sector as well as Centrally Sponsored Schemes/Missions.
- This Umbrella Scheme has the following **twelve Schemes/Missions**:
  - I. Mission for Integrated Development of Horticulture (MIDH);
  - II. National Mission on Oil Seeds and Oil Palm (NMOOP);
  - III. National Food Security Mission (NFSM)
  - IV. National Mission for Sustainable Agriculture (NMSA);
  - V. Sub-Mission on Agriculture Extension (SMAE);
  - VI. Sub-Mission on Seeds & Planting Material (SMSP);
  - VII. Sub-Mission on Agricultural Mechanisation (SMAM);
  - VIII. Sub-Mission on Plant Protection and Plant Quarantine (SMPPQ);
  - IX. Integrated Scheme on Agricultural Census, Economics and Statistics;
  - X. Integrated Scheme on Agricultural Cooperation;
  - XI. Integrated Scheme on Agricultural Marketing (ISAM);
  - XII. National e-Governance Plan in Agriculture (NeGP-A).

- **Alternative methods:**

- Other alternative farming methods such as **Subsistence farming, Organic farming, zero based natural farming** were being promoted.

- **Expansion of region:**

- A large part of India, **especially rain-fed regions of eastern states such as Assam, Bihar and Orissa remained largely untouched** by the green revolution technology.
- In view of this, the Government of India initiated **specific efforts in the agricultural development of those regions and crops which could not get the benefits of the first green revolution.**
- These efforts centered around:
  - I. Policy thrust on agricultural development of eastern states;
  - II. Development of rain-fed and un-irrigated agricultural regions to improve people's livelihood and achieve food security; and
  - III. Greater involvement of agri-business companies in R&D, storage, marketing and processing of agricultural products with a focus on high value horticulture, floriculture and livestock products through contract farming and other innovative efforts.

- **Focus on rainfed and dryland agricultural regions:**

- Focus on rain-fed and dryland agricultural regions [which comprise about 60 percent of total NSA (net sown area) accounting for nearly 40 percent of total agricultural output] **through government interventions in terms of investment in soil and water conservation and water harvesting related activities** contributed to increasing the productivity.

- **Holistic approach:**

- The policy focus in achieving the agricultural development in these regions was one of a **holistic approach for conservation, rejuvenation and management of natural resources** for sustaining the livelihoods of people by raising agricultural productivity and income.

- **Crop diversification:**

- During the post-green revolution period, agricultural development was more in the direction of diversification towards **high value horticulture crops like fruits, vegetables, flowers, etc. besides the development of allied activities like dairy, poultry, and fishery.**

**Way forward:**

- **Evergreen revolution:** To compensate for the environmental implications of the green revolution, the model of evergreen revolution should be implemented properly across the country.
- **Climate smart agriculture:** Government also can promote climate smart farming systems such as organic farming, natural farming, and precision farming among the farmers.
- **Water efficient methods:** Farmers should be taught to adopt water efficient farming practices like drip irrigation and sprinkler irrigation to reduce the overall usage of water in agriculture.
  - Around 80% of the total groundwater is used in agricultural fields alone.
- **Crop diversification:** Government can also promote crop diversification among farmers through minimum support price and promotion of drought tolerant crops.
- **Reduced fertilizer use:** Fertilizer usage should be reduced from the current 7:4:2 NPK ratio to 4:2:1 ratio. Judicious use of fertilizers will help to reduce the phase of decrease of soil fertility.

### 5.3 Organ transplantation in India

**Why in the news?**

- Recently, an independent study reveals that organ shortage in India is increasing.

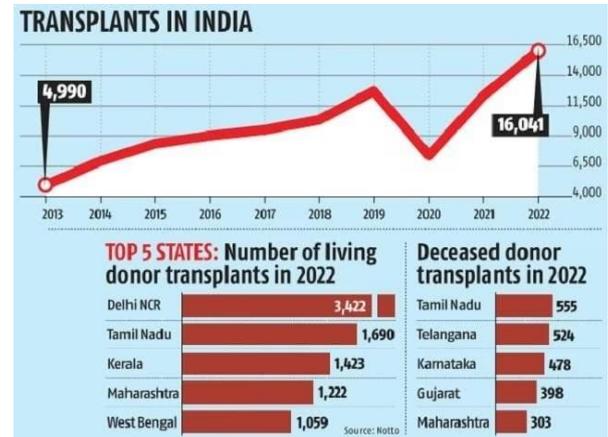
**Key points in news:**

- In 2022, over two lakh patients needed a transplant, but there were only about 7,500 transplants.
- **High prevalence of kidney diseases:** Due to the prevalence of diabetes, malnourishment, overcrowding and poor sanitation, there is a high prevalence of Chronic Kidney Disease (CKD) in India, affecting about 17% of the population.

- In contrast to India, the **United States** and other developed countries could **carry out about 20% transplants**.
- Notably, a significant portion of this gap is on account of more **stringent regulations in India than a lack of medical facilities**.

#### Achievements:

- India has achieved over **15000 organ transplants in 2022**.
- Year on year **organ transplant growth rate was 27%**.
- **Delhi and Tamil Nadu** have emerged as an organ transplant hub in India with the share of **14% and 11% respectively**.
- **Tamil Nadu** is the **largest organ donation** in India with 21% share.
- **Living donors** constitute the majority, accounting for **85% of all donors** in India.



#### Challenges:

- **Lack of donations:** Governments disallow altruistic donations leads to shortage in the overall organ transplant supply chain.
  - Eg: **Only 16,000 donated** their organs in India according to health ministry's data.
- **Poor infrastructure:** Lack of infrastructure to collect and store the organs in India.
- **Stringent regulations:** Stringent rules and regulations on the collection and storage of organs in India leads to shortage of organs.
  - Eg: Swap transplants are legally allowed in India with due permission, but only near-relatives are allowed as donor-recipient pairs.
- **Lack of monitoring mechanism:** There is no national coordinating authority to monitor and facilitate organ swaps.
- **Black market issue:** Poor facilitation by the government leads to organ black market in India.
- **High cost:** Organ transplant in government hospitals cost ₹4 lakh and the same transplant in **private hospitals will cost ₹15-₹20 lakh**.
- **Lack of Awareness:** Limited awareness among the general public about organ donation and its impact.

#### Measures taken by government to address this challenges:

- **Transplantation of Human Organs and Tissues Act 1994:** This act was enacted to regulate and facilitate organ transplantation in India.
- **National organ transplant program:** It was started to improve access to the life transforming transplantation for needy citizens of our country by promoting deceased organ donation.
- **National organ transplant guidelines:** Government's recent reforms in February 2023 allow more flexibility in age and domicile requirements while registering to obtain an organ.

- **National organ and tissue transplant organization:** It acts as an apex center for all India activities for procurement, distribution and registry of organs and tissues donation and transplantation in the country.
- **Green Corridor:** It is a special route making the route of the hospital where an organ is harvested and the hospital where it is to be transplanted, traffic-free. It is a manually operated route.

#### Way forward:

- **Allow altruistic donations:** Government should amend the Transplantation of organs act to allow non-near relatives to donate their organs in line with recent Kerala and Punjab high courts.
- **National coordinating authority:** Establishment of national coordinating authority to facilitate organ swaps, since larger and more diverse pools make it easier to find compatible swaps.
- **Adopting international ideas:** India should learn from and replicate such existing successful regulations to improve the lives of several thousands of citizens.
  - Eg: **Spain has established international organ swap agreements** with other countries.
- **Organ donation awareness:** Government should promote and educate the people about organ donation.
  - Stigma and stereotypes on organ donation should be removed.

#### Major provisions of Transplantation of Human Organs and Tissues Act 1994:

- **Definition of brain death:** Brain death is a stage when all functions of the brain-stem have permanently ceased. The same has to be verified by the board of Medical experts.
- **Advisory committee:** It was Constituted under the chairmanship of an administrative expert, who is not below the rank of the Secretary to the State Government for a period of 2 years to **aid and advise the appropriate authority.**
- **Authorization committee:** The purpose of this committee is to **accept or reject the application of donors** (other than relatives) to ensure that he/she is not being exploited for monetary consideration by making a donation. ★ ★ SINCE 2006 ★ ★ ★
  - A hospital can have its own AC if they carry out more than 25 transplants per year.
- **Appropriate authority:** Appropriate Authority's purpose is to regulate human organs such as removal, storage and transplantation.
  - The hospitals can only perform these functions after being licensed by the authorities.
- **Types of donor:** It categorized the donors into three types,
  - **Living donors:** A living donor is a person who is above the age of 18 years and has voluntarily authorized for the removal of his organ/tissue, during his lifetime.
  - **Foreign donors:** In this case, only those foreign donors are permitted who are 'near-related' to the recipient.
  - **Deceased donor:** A donation, being a source of organs, can either be made after brain stem death (brain death) or after cardiac death (when the patient's heart stops beating).
- **Some of the important amendments under this Act to promote organ donation are as follows:**
  - Provision of '**Retrieval Centres**' for retrieval of organs from deceased donors and their registration under the amended Act.

- **Swap Donation** (Donor Exchange) included.
- Mandatory '**Transplant Coordinator**' for coordinating all matters relating to removal or transplantation of human organs.
- **National Human Organs and Tissues Removal and Storage Network** at one or more places and regional network.

## 5.4 Implications of AI among Children

### Why in the news?

- India is to host the first-ever **global summit on Artificial Intelligence (AI)** in October, 2023.

### Key points from news:

- As the **Chair of the Global Partnership on Artificial Intelligence (GPAI)**, India will also be hosting the GPAI global summit in December.
- Against this backdrop, Prime Minister Narendra Modi recently called for a global framework on the ethical expansion of AI.
- AI is projected to add \$500 billion to India's economy by 2025, accounting for 10% of the country's target GDP.

### Opportunities of AI with regard to Children and Adolescents:

- **Learning:**
  - **Personalized:** AI can create personalized learning experiences, adapting educational content and allowing students to learn based on their need and speed.
  - **Inclusive:** AI powered tools like speech-to-text and text-to-speech, services like child-computer interactions such as gesture, touch, and speech can aid students with disabilities in accessing educational material and making learning more inclusive.
  - **Interactive:** AI incorporates pedagogical approaches to the child's needs - such as intelligent tutoring systems, tailored curriculum plans, and imaginative virtual reality instruction, offering rich and engaging interactive learning experiences that can improve educational outcomes.
  - **Skill building:** Children's interactions with AI-interfaced toys or robots can improve their creativity, emotion, collaborative inquiry and related literacy skills.
  - **Virtual Tutors and Assistants:** Provides additional and after schooling support to help them with their studies.

- **Parental control and content filtering:**

- A significant percentage of parents rely on the assistance of their children to navigate user interfaces and user experience (UI/UX) interfaces online.
- AI can help as a guide to parents to ensure the safe use of online contents and activities by children and adolescents.

- **Personality development:** AI Tools provides playful and creative opportunities for children, with some even promoting enhanced literacy, social skills and language development.

- **Career exploration:** AI-driven career assessment tools can help adolescents explore potential career paths based on their interests, skills, and personality traits, aiding in career decision-making.

- **Mental and Emotional well-being:** AI-powered mental health apps and chatbots can provide adolescents with a confidential and supportive outlet to discuss their emotional well-being, offering guidance and resources.

### **Challenges of AI to Children and Adolescents**

- **Not designed for the young:** Many cutting-edge AI deployments are not designed specifically for children but are nevertheless accessed by them.

- **Privacy concerns:** Children and Adolescents are vulnerable to share personal information with AI devices and applications without understanding the implications.

- **Algorithmic bias:** Data hungry AI-based digital services can readily deploy opaque algorithms and dark patterns to exploit impressionable young people.

- This can lead to tech-based distortions of ideal physical appearance(s) which can trigger body image issues.

- **Addiction and excessive screen time:** It impacts physical and mental health.

- **Over 60% urban kids spend 3 hours daily on entertainment apps.**

- **Online safety:** Deep fake capabilities can be misused to target young people wherein bad actors create morphed sexually explicit depictions and distribute them online.

- Other malicious threats emerging from AI include misinformation, radicalisation, cyberbullying, sexual grooming, and doxxing.

- **Biased information:** AI is known to transpose real world biases and inequities into the digital world. Such issues of bias and discrimination can impact children and adolescents who belong to marginalized communities.

- **Reduced human interaction:** Over reliance of AI for entertainment and communication leads to social isolation and thereby increasing the chances of emotional breakdown.

## Measures taken by the government

- India has **proposed the Digital India Act** and it is expected that the provisions regarding addressing the vulnerability of Children and Adolescents will be addressed and special provisions for ensuring safe use of AI will be incorporated.

## International best practices

- **UNICEF's guidance for policymakers on AI and children:** It identifies nine requirements for child-centered AI which draws on the UN Convention on the Rights of the Child of which India is a signatory.
  - The guidance aims to create an enabling environment which promotes children's well-being, inclusion, fairness, non-discrimination, safety, transparency, explainability and accountability.
- **California's Age Appropriate Design Code Act:** It pushes for transparency to ensure that digital services configure default privacy settings; assess whether algorithms, data collection, or targeted advertising systems harm children; and use clear, age-appropriate language for user-facing information.
- **Australia's Online Safety Youth Advisory Council:** The council comprises people between the ages of 13-24 years and assists regulation to become more responsive to the threats young people face when interacting with AI systems, while preserving the benefits that they derive from digital services.

## Way forward

- **Regulation:** Have to align incentives to reduce issues of addiction, mental health, and overall safety.
  - AI regulation must improve upon India's approach to children under India's newly minted data protection law.
  - It should have the ability to adapt to the varying developmental stages of children from different age groups.
- **Equipping the children:** While moving into adolescence young people must be equipped with tools to manage the unintended consequences.
- **Children protection compliant legislations:** The Upcoming Digital India Act (DIA) should ensure better protection to children's interests when interacting with AI.
- **Data driven research:** Indian authorities should encourage research which collects evidence on the benefits and risks of AI for India's children and adolescents. This should serve as a baseline to work towards an Indian Age Appropriate Design Code for AI.
- **Better institutions:** Will help shift regulation away from top-down safety protocols which place undue burdens on parents.
- **Regular dialogue:** Mechanisms of regular dialogue with children will help incorporate their inputs on the benefits and the threats they face when interacting with AI-based digital services.

## 5.5 Private players in space sector

### Why in the news?

- Recently, space startups said that funding shortages are the most serious issue in the Indian space industry.

### Significance of private players in space sectors:

- **Investment:** Large scale investment can be infused by the private players.
  - **Eg: Elon Musk's SpaceX's reusable Falcon 9 rockets have become a popular choice for space missions around the world.**
- **Small space activities:** Private players can be used to provide small scale space activities, while the government can focus on other large scale projects like moon, mars etc.
- **Employment creation:** Employment activities will be generated on a large scale.
  - **Eg: The Confederation of Indian Industry** said that private players can generate **1 lakh jobs.**
- **Innovation:** Large scale innovation in the space sector will be started; Private investment in space research is a major advantage.
  - **Eg: Agnikula cosmos develops small satellite launch vehicles.**
- **Economic growth:** Participation of private players will increase the GDP contribution of the space sector.
  - Current contribution of the space sector to the GDP is \$8 bn and it will be \$44 bn in the next 10 years.
- **Proliferation of technologies:** Private sector participation will increase the proliferation of benefits of space technologies to large scale populations.
  - **Eg: OneWeb and Airtel collaboration to provide high speed internet.**
- **Competitiveness:** Competition among the private players can increase the growth of the space sector.

### Issues:

- **Funding shortage:** Negligible government support and high incubation period also a major concern for private players.
  - **Only \$67 million was invested into this sector.**
- **Import dependency:** Around 95% of the space components and equipment are imported.
- **High gestation period:** Due to the high gestation period, private players are hesitant to participate in the space sector.
- **Procedural delays:** Bureaucratic delays in opening new startups is a major hurdle for private players.
- **Anti national activities:** Private sector can be used for anti-national activities.

### Government measures:

- **Indian Space Association:** It was launched in 2021 to 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.
- **Indian National Space Promotion and Authorisation Centre (IN-SPACe):** This center will act as a bridge between ISRO and private players to increase the coordination in the space sector.
- **Policy reform:** A major policy reform has been based on the initial validity of the industrial license granted under the Industries (Development & Regulation) Act. One highlight of this reform is the **extension of the licensing term from three years to 15 years.**
- **India space policy 2023:** The NGEs (this includes the private sector) are allowed to undertake end-to-end activities in the space sector through establishment and operation of space objects, ground-based assets and related services, such as communication, remote sensing, navigation, etc.
- **New space india limited:** It was launched to commercialize the space assets to the private players.
  - **Eg: Manufacture, lease components, platforms to the private players.**

### Way forward:

- **Funding support:** Incentives can be given to new startups like PLI scheme to encourage their participation.
- **Procedural reforms:** Industry friendly regulatory systems should be brought by the government.
  - **Eg: Red tapism and bureaucratic delays can be avoided.**
- **New market:** Government should play a major role in finding new market avenues for the private sectors.

## 6. SECURITY

YOUR DREAM IS OUR RESPONSIBILITY

### 6.1 Money Laundering

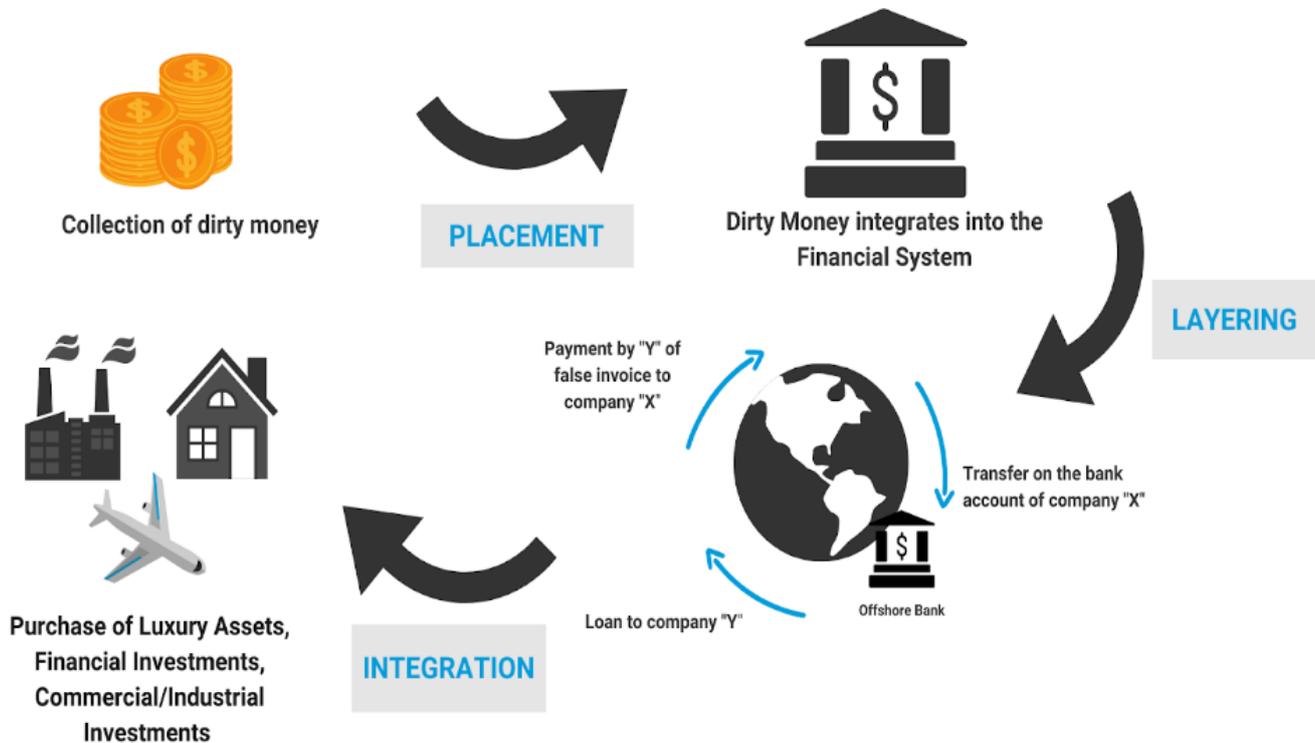
**Why in the news?** Recently, a three judge Bench is scheduled to begin hearing review petitions against a July 2022 verdict, which gave virtually unbridled powers to the Enforcement Directorate (ED) to arrest and summon individuals and search private properties under the Prevention of Money Laundering Act (PMLA).

#### What is money laundering?

- Money laundering is the process of **hiding the source of money obtained from illegal sources and converting it to a clean source**, thereby avoiding prosecution, conviction, and confiscation of the criminal funds.

- It is an illegal exercise that **converts black money into white money.**

## Money Laundering Cycle



### How emerging technologies and globalization contribute to Money laundering?

#### Emerging technologies:

- **Cryptocurrencies:** The newly inserted online transacting currency in the form of cryptos such as Bitcoin and several others has increased the chances of money laundering.
  - Increasing amounts of OTC (Over The Counter) trade might result in the heavy transfer of funds between countries.
  - The lack of strict KYC norms in some cryptocurrencies has also acted as an invitation to money laundering.
- **Smurfing/ Structuring:** Large numbers of funds are broken into small chunks of cash, making multiple transactions and spreading the amount to different accounts, thereby making it hard to detect the origin.
- **Electronic money:** There are many ways where criminals can acquire money, whether by infusing malware, phishing, account hackers, or other vectors. Stored value cards are often used to launder such illegal money by purchasing items from that money.

## Globalization:

- **Offshore accounts:** Tax haven countries like Cayman Island, Panama etc have structured their economies around assistance in tax evasion.
- **Shell companies:** Lie within the sovereign border without active business operations in the guise of legitimate transactions through fake invoices and balance sheets wherein they channel the laundered money into illegitimate businesses.
- **Global financial system:** Placement of money in the global financial system creates problems of coordination between multiple jurisdictions.
- Distribution of assets across countries prevents punitive action by authorities.

## Threats of Money laundering

### • Economic threats:

- Money laundering goes hand-in-hand with tax evasion and duty evasion (which is the non-payment of import and export duties by smuggling goods in and out of a nation). Such activities **deprive public service departments of important revenue sources**.
- Logic defying investment activities done to minimize the possibility of get caught have the ability to **destabilize the overall financial system** by weakening investor confidence due to unnecessary volatility.
- **Increase in interest rates and foreign exchange volatility** on account of irregular and unanticipated capital flows.

### • Social threats:

- **Growth of illegal business:** Criminals launder money to circulate their illicit earnings, which then provides the firepower to grow the illegal business.
- The social impact of strong illegal businesses includes increased **drug addiction and trafficking, rampant corruption**, and **criminals empowered with economic powers**.
- It makes the rich richer and thereby causing an **imbalance in society**.
- Legitimizing the proceeds of illegal activities like **terrorism funding, people smuggling**, etc., have a tremendous social and economic cost on the society.
- Money laundering and criminal activities form a vicious cycle.

### • Political threats:

- **Criminalization of politics:** Increased economic strength of the criminals help them in influencing the policies of the government.
- Initiates **political distrust** leading to the **instability** of the democratic government.

## Measures taken by government to tackle

- **Statutory framework:** Prevention of Money-Laundering Act, 2002 and Amendment act, 2012:
  - **Prevent money-laundering** and to provide for confiscation of property derived from laundered money.
  - The provisions of the act are applicable to all financial institutions, banks (including RBI), mutual funds, insurance companies and their financial intermediaries.
- **Special Courts** have been set-up in a number of States / UTs by the Central Government to conduct the trial of the offenses of Money laundering.
- In certain cases the Central Government may seek/ provide assistance from/to a contracting State for any investigation or forwarding of evidence collected during the course of such investigation.
- **Other acts:**
  - The Smugglers and Foreign Exchange Manipulators (Forfeiture of Property) Act, 1976
  - Narcotic Drugs and Psychotropic Substances Act, 1985.
  - The Conservation of Foreign Exchange and Prevention of Smuggling Activities Act, 1974 (COFEPOSA)
  - The Benami Transactions (Prohibition) Act, 1988.
- **Institutional Framework:**
  - **ED (Enforcement Directorate):** It is responsible for enforcement of the Foreign Exchange Management Act, 1999 (FEMA) and certain provisions under the Prevention of Money Laundering Act, 2002
    - To provide and seek mutual legal assistance to/from contracting states in respect of attachment/confiscation of proceeds of crime as well as in respect of transfer of accused persons under PMLA.
    - To undertake survey, search, seizure, arrest, prosecution action etc. against offenders of PMLA offense.
  - **Financial Intelligence Unit - India (FIU-IND):** Financial Intelligence Unit – India was set by the Government of India on 18th November 2004 as the central national agency responsible for receiving, processing, analyzing and disseminating information relating to suspect financial transactions.
    - It is an independent body reporting directly to the Economic Intelligence Council (EIC) headed by the Finance Minister.
- India had signed **Tax Information Exchange Agreements (TIEA)** with certain countries like Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Jersey etc. to address the use of tax evaded money for illegal purposes.

## International measures:

- **United Nations (UN) Instruments/Conventions:**

- **Vienna Convention, 1988-** UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances
- **Palermo Convention:** UN Convention Against Transnational Organized Crime, November 15, **2001**
- **Merida Convention:** UN Convention Against Corruption, December 14, **2005**

- **European Union (EU) Instruments/Conventions:**

- **Warsaw Convention:** Council of Europe Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime and on the Financing of Terrorism, May 16, **2005**
- **Strasbourg Convention:** Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime, November 8, **1990**

- **Egmont Group of Financial Intelligence Units:** Recognising the benefits inherent in the development of a financial intelligence units (FIU) network, in 1995, a group of FIUs at the Egmont Arenberg Palace in Brussels decided to establish an informal group for the stimulation of international cooperation.

- These FIUs meet regularly to find ways to cooperate, especially in the areas of information exchange, training and the sharing of expertise.

- **Financial Action Task Force (FATF):** The FATF is an inter-governmental body whose purpose is the development and promotion of national and international policies to combat money laundering and terrorist financing.

- Under UN office of Drugs and Crime: The **Global Programme against Money Laundering, Proceeds of Crime and the financing of Terrorism** (GPML) is a global programme providing in-depth assistance to countries to build and strengthen their anti-money laundering and countering financing of terrorism (AML/CFT) capacity.

- **The Asia/Pacific Group on Money Laundering:** An intergovernmental organization, consisting of 42 member jurisdictions.

- Objective: To ensure that individual members effectively implement the international standards against money laundering, terrorist financing and proliferation financing related to weapons of mass destruction.

- **The Eurasian Group on Combating Money Laundering and financing of terrorism:** An FATF-style regional body. The EAG was established in 2004 and is currently an associate member of the FATF.

- EAG brings together **nine countries** in the region (Belarus, China, India, Kazakhstan, Kyrgyz Republic, Russia, Tajikistan, Turkmenistan, Uzbekistan). Observer status has been granted to 15 countries and 24 international organizations.

## Way forward

- **Addressing the risk:** The **risk of cryptocurrency and other emerging technologies** in money laundering had to be addressed.
- **FATF recommendation: Implementing the recommendations of FATF** could lead to reducing the money laundering issues in India.
- **International cooperation:** Since it is a global phenomenon and transcends the political borders, International cooperation is crucial **to fight the menace of money laundering.**
- **Record keeping:** Financial institutions should be **equipped to keep all the necessary records on domestic and international transactions.**
- **Policy measures:** Identify the risks, **develop policies and domestic coordination** to mitigate money laundering and terrorist financing risks.

## Major provisions of Prevention of Money laundering Act (PMLA) 2002:

- **Definition of Money Laundering:** Money laundering is defined as the **process through which an illegal fund, such as black money, is obtained from illegal activities and disguised as legal money, eventually portrayed as white money.**
  - The money laundered is passed on through various channels or phases of conversions and transfers to make it legal and eventually reach a legally acceptable institution, like a bank.
- **List of offenses:** Crimes related to money laundering are classified in this act as part A, part B and part C.
  - **Part A** - Offences under various acts such as Prevention of corruption act, Indian Penal Code etc.
  - **Part B** - Offences with money value 1 crore or more.
  - **Part C** - Transborder crimes.
- **Authorities under the act:**
  - **Enforcement Directorate:** This agency is provided powers and responsibilities to enforce the provisions of this act.
  - **Financial Intelligence Unit:** It is the central national agency responsible for receiving, processing, analyzing, and disseminating the information relating to suspect financial transactions.
  - **Adjudicating authorities:** This authority appointed by the central government decides all the cases against the persons involved in the money laundering.
- **Power to attach tainted properties:** Appropriate authorities can temporarily seize property suspected of being "proceeds of crime" for 180 days, subject to appointment by the Government of India.
  - An independent adjudicating authority must also confirm such an order.
- **Obligations on the financial institutions:** Act provides some obligations on the financial institutions such as banks.
  - **Maintain record** of every transaction.

- **Inform the director general** about the susceptible transactions.
- **Burden of proof:** The burden of proof under the act is always on the **accused**.

#### **Purpose of the Act with suitable datas:**

- Prevention of money-laundering and related organized economic crimes in India. Curbing the money laundering can help to curb other organized crimes such as drug trafficking, terrorism etc...
- Combat/**prevent channelising of money** into illegal activities and economic crimes.
- Provide for **confiscating property** derived from, or involved/used in, money laundering.
  - Eg: Around 98000 cr were attached under the PMLA act.
- Penalize the offenders of money laundering offenses.
  - Eg: Around **1100 cases** were registered under the act.
- Appointing an **adjudicating authority** and appellate tribunal for taking charge of money laundering matters.
  - Eg: Conviction rate under the act is 93%.
- To **strengthen the anti money laundering activities** in alignment with the regulations of the financial action task force.

#### **Recent amendments:**

##### **Amendment 2019:**

- **Deletion** of provisions in subsections (1) of Section 17 (Search and Seizure) and Section 18 (Search of Persons), **doing away with the prerequisite of an FIR** or chargesheet by other agencies that are **authorized to probe the offenses listed in the PMLA schedule**.
- An explanation added to Section 45 clarifies that all PMLA **offenses will be cognisable and non-bailable**.
  - Therefore, ED officers are empowered to arrest an accused without warrant, subject to certain conditions.
- One part in section 72 giving power to the Centre to set up an **Inter-Ministerial Coordination Committee** for inter-departmental and inter-agency coordination for operational and policy level cooperation.

##### **Amendment 2023:**

- The financial institutions will also have to register details of their **NGO** clients on the **Darpan portal of the Niti Aayog** and **maintain the record for five years** of the transactions.
- It is mandatory for banks and financial institutions to record financial transactions of **politically exposed persons (PEP)**.
  - Politically exposed persons: Individuals who have been entrusted with prominent public functions by a foreign country.
- The expanded definitions also included **cryptocurrencies** under provisions to monitor illicit financial flows.

### Criticisms against the act:

- **Low conviction:** Only **36 cases** were adjudicated fully against the total 1100 cases under this act.
- **Political tool:** Main criticism is that the central government uses the PMLA act and its agencies such as ED to suppress the dissident voices against the government.
- **Reversal of Burden of proof:** The provision of burden of proof on the accused instead of enforcement agencies can be used by the government to target any opposition voices.
- **Lack of transparency:** Opaque selection of cases by the enforcement agencies to investigate.
- **Broad definition of offenses:** Offenses included under the act are vast.
- **Vast power to enforcement agencies:** Enforcement Directorate and other agencies are given enormous power under the act.
  - **Eg: They can seize the property without filing an FIR.**

### Way forward:

- **Autonomy to the institution:** The PMLA act and its enforcement agencies should not be used against political dissidents.
  - Political intrusion can be avoided to ensure the autonomy of the institution.
- **Burden of proof:** Amendments should be enacted to reverse the burden of proof to the enforcement agencies from accused.
- **Independent committee:** Tribunal or committee with the ruling and opposition parties in the parliament can be established to oversee the activities of the enforcement agencies under the act.
- **Faster case adjudication:** Government should provide necessary technical and financial support to the enforcement agencies to resolve the cases fastly.

## 7. SOCIETY

★ ★ ★ SINCE 2006 ★ ★ ★

### 7.1 Healthcare challenges in tribal areas

#### Why in the news?

- In a recent study published in 'The Lancet Regional Health - Southeast Asia,' researchers provide a detailed analysis of the health, nutrition, and population trends of Scheduled Tribes (STs) from 2016 to 2021.

#### Key points from the news:

Good performance of ST	Challenges faced by ST
<ul style="list-style-type: none"><li>• Gender balance,</li><li>• Gender balance at birth,</li><li>• Use of family planning methods,</li><li>• Consistent treatment during pregnancy,</li></ul>	<ul style="list-style-type: none"><li>• Women's status</li><li>• Child malnutrition,</li><li>• Anemia,</li><li>• Insufficient vaccination</li></ul>

- Adherence to recommended breastfeeding practices.
- Reduced occurrence of diabetes and hypertension
- Improvement in sanitation facilities (30% increase between 2016 and 2021)
- More births were being attended to by skilled health personnel (an increase of 13 points)
- Full vaccination coverage among children aged 12–23 months (an increase of 18.6 points).
- The civil registration of births among STs also increased from 76% in 2016 to 88% in 2021.

- coverage,
- Disparities in fertility and mortality rates.

### Reason for the ST's being a good performers in Gender balance and family planning:

- **Extension of healthcare schemes:** In the last few years, government healthcare schemes were reached upto the remote areas of ST people.
- **Promotion of awareness:** Family planning awareness reached them only in the last few years before. So the result of family planning programmes started to increase among the ST people.
- **Historical factor:** Historically, tribal people provide gender equality more often than mainland people.

### Persisting health challenges in ST:

- **High deaths in under 5 age:** The mortality rate for children under five in the ST community was alarmingly high, with 50 out of every 1,000 children not reaching their fifth birthday.
- **Malnutrition:** Child malnutrition was a pressing issue, as more than 40% of ST children under five were stunted, with a similar percentage being underweight.
- **High blood pressure level:** There was a significant rise in high blood pressure levels among Scheduled Tribe men and women aged 15 - 49, with increases of 7.5% and 8.9%, respectively.
- **High Anemia prevalence:** More than **58%** of the ST women have Anemia.
  - **Eg: Sickle cell Anemia** is the most prevalent disease among ST people.

### Reasons for the challenges:

- **Historical negligence:** Throughout history ST people have been neglected by successive governments.
- **Poor implementation of schemes:** ST people were not included in the socio economic development scheme and policies of the governments.
- **Lack of infrastructure:** Poor infrastructure facilities such as schools and hospitals in the tribal areas.
- **Poor accessibility:** Lack of accessibility of the tribal regions also affects the effective reach of government schemes to the ST people.
- **Self negligence:** Self negligence of the ST people on the healthcare schemes.
  - **Eg: Prefer home delivery over delivery in hospitals.**

- **Poor Funding Allocation:** Limited allocation of funds for healthcare in tribal areas. Insufficient investment in healthcare infrastructure, equipment, and technology.

#### Measures taken by government:

- **National Rural Health Mission (NRHM)** was launched in 2005. The States are given flexibility to propose specific interventions for SC/ST areas and beneficiaries including for women and their children and are supported under National Health Mission, based on their proposals.
- **Intensified Mission Indradhanush:** Under this scheme, basic preventive healthcare facilities were provided to remote and hilly areas.
- **Expert committee on tribal health 2018:**
  - Establish **tribal health councils** at national, state and district level to ensure the implementation of health care schemes.
  - Introduce **ST health cards** for the tribal people
  - Utilize **Aarogya Mitra**, trained local tribal youth, and **ASHA workers** for primary care in tribal communities with support from the gram sabha.
  - Implement **national health policy 2017** in tribal areas.
  - Enhance food security and strengthen **Integrated Child Development Services (ICDS)** to address malnutrition.

#### Way forward:

- **Infrastructure development:** Government should improve social infrastructure facilities in the tribal areas.
  - **Eg: Primary healthcare units, schools**
- **Implementation of expert committee recommendations:** State and central governments should take initiatives to implement the recommendations of expert committee on health.
- **Telemedicine:** Internet connectivity can be improved in tribal areas, so that will facilitate digital health schemes to the tribal people. ★ ★ SINCE 2006 ★ ★ ★
  - **Eg: TeleMedicine and mobile medical units.**
- **Targeted intervention:** Special targeted intervention through healthcare schemes can resolve the healthcare challenges.
  - **Eg: Third phase of Intensified mission indradhanush.**

## 7.2 UNFPA population report

#### Why in the news?

- Recently, the United Nations Population Fund released its **India aging report**.

#### Key points from the report:

- **Elder population share:** The share of **elderly people** in the total population will be **20% in 2050**.
- **Life expectancy:** Life expectancy of women at 60 will be **four years higher than men**.

- **Sex ratio:** Since 1991, sex ratio is **increasing barring** Union Territories and **Western India**.
- **Poverty:** More than **40%** of the elderly in India are in the **poorest wealth quintile**, with about 18.7% of them living without an income.
- **Major challenges faced by Indian elderly people: Feminisation and Ruralisation** of the older population.
- **Democratic transition across states:** Most States in the **southern region** and select northern States such as **Himachal Pradesh and Punjab** reported a higher share of the **elderly population than the national average in 2021**, a gap that is expected to widen by 2036.
  - Compared with southern and western India, central and northeastern regions have States with younger groups as indicated by the aging index.
- **Old age dependency ratio:** In the **southern region**, the **old-age dependency ratio** (elderly people per 100 people between 15 and 59 years) was higher than the national average at around **20** as is true of **western India at 17**.
  - Overall, **Union Territories (13)** and the **north-eastern region (13)** reflected lower old age dependency ratios.

#### **Advantages from the report:**

- **Elder population data:** The report provides adequate data about the elder population and their growth rate.
- **Policy making:** Adequate data can be used by the government to substantiate policies and schemes for the welfare of the older people.
- **Silver economy:** Policies and social Securities to the old age population will empower them and make them a part of the country's workforce.

#### **Challenges from the report:**

- **Low workforce:** Increasing trend of the old age population will lower the total workforce of the country.
- **Uneven democratic transition:** This uneven democratic transition will further increase the trend of uneven development of the regions.
- **Migration:** Uneven democratic transition will also increase the migration rate across the country.
- **Feminisation of older population:** Women will be the major share in the increasing old age population.
  - Adequate social security provisions need to be implemented.
- **Ruralisation of older population:** Also major share in the increasing old age population will be in the rural part of India.
- **Poverty:** The report said that around 40% of the elderly population will be below the poverty level.

#### **Measures taken by the government to deal with the challenges:**

- **Rashtriya Vayoshri Yojana:** A scheme for **providing physical Aids** and Assisted living devices to Senior Citizens.
- **Scheme of Integrated Programme for Senior Citizens :** Setting up of **Homes to improve the quality of life of the Senior Citizens**, especially indigent senior citizens by providing basic

amenities like shelter, food, medical care and entertainment opportunities and by encouraging productive and active aging.

- **State Action Plan for Senior Citizens:** Central government and state governments make separate action plans for senior citizens to provide a road map for policy making and schemes implementation etc.
- **National social assistance program:** Around 2.2 cr elder people are provided ₹1000 **monthly pension** by the government.

#### **Way forward:**

- **Old age homes:** Both the state and central governments should establish more old age homes in every taluk to take care of the destitute old age women.
- **Identification of beneficiaries:** Right beneficiaries should be identified by the authorities for old age people schemes.
- **District nodal officer:** Every district authority should be asked to submit data about the schemes of old age people implementation.
- **Skill training:** Older women should be provided adequate skill training specifically in the rural areas.
  - The skill training will be useful to the old age people especially when they are in a destitute condition.

#### **About United Nations Population Fund:**

- UNFPA is the United Nations sexual and reproductive health agency.
- **Year:** It was established in **1969** by the **UN general assembly**.
- **Three zero initiative:** In 2018, UNFPA launched efforts to achieve three transformative results, also known as the three zeros, by 2030:
  - Ending unmet need for family planning.
  - Ending preventable maternal death.
  - Ending gender-based violence and harmful practices.
- **Headquarters:** New York
- **Reports:**
  - State of World Population Report.
  - India aging report.

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