



# UNIQUE IAS ACADEMY

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## **UPSC CURRENT AFFAIRS AUGUST- 2023**



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## INDIAN HISTORY &amp; CULTURE

## 1. 81ST ANNIVERSARY OF ‘QUIT INDIA MOVEMENT’

**Context:**

On the 81st Anniversary of the **historic** ‘Quit India Movement’, the Vice-President, PM and Chairman of Rajya Sabha, paid homage to freedom fighters and highlighted the movement’s enduring relevance.

**About Quit India Movement (also known as the August Movement)**

It was a movement launched at the Bombay session of the All India Congress Committee by Mohandas Gandhi on 8<sup>th</sup> August 1942, during World War II, demanding an end to British rule in India.

**Reasons that led to the Quit India movement:**

- The Failure of the Cripps Mission
- **Wartime miseries:** There was popular discontent because of rising prices and shortage of rice, salt, etc.,
- **Weakening Empire:** News of reverses suffered by the British in Southeast Asia and an imminent British collapse. It also shattered the **notion of White prestige**

**QIM united people against British Rule:**

- **People’s movement:** By August 9, Gandhi and all other senior Congress leaders had been jailed. With no one to give directions, people took the movement into their own hands.
- **Public rampage:** Many felt Gandhi’s mantra of **Do or Die** represented the militant mood of Gandhi. The general public attacked symbols of authority and hoisted national flags forcibly on public buildings. Satyagrahis offered themselves up to arrest, **bridges were blown up, railway tracks were removed, and telegraph lines were cut.**
- **Parallel governments:** Parallel governments were established in many places:
  - **Ballia** (for a week)—under Chittu Pandey.
  - **Tamluk —Jatiya Sarkar** undertook cyclone relief work, sanctioned grants to schools, supplied paddy from the rich to the poor, **organised Vidyut Vahinis**, etc.

- **Satara (mid-1943 to 1945)**—named “Prati Sarkar”, was organised under leaders like Y.B. Chavan, Nana Patil, etc. **Village libraries and Nyayadan Mandals were organised**, prohibition campaigns were carried on, and ‘**Gandhi marriages**’ were organised.
- **Active help by all sections:** was provided. Extended Mass Participation:
  - By **businessmen** through donations, shelter, and material help, **students** (acting as couriers),
  - **Youth, especially the students** of schools and colleges, remained at the forefront.
  - **Women**, especially school and college girls, actively participated and included Aruna Asaf Ali, Sucheta Kripalani, and Usha Mehta.
  - **Workers** went on strikes and faced repression.
  - **Peasants** of all strata were at the heart of the movement. Even some **zamindars participated**.
  - These peasants concentrated their offensive on symbols of authority, and there was a complete **absence of anti zamindar violence**.
  - **Simple villagers-** by refusing information from the authority.
  - Muslims helped by giving shelter to underground activists. **There were no communal clashes during the movement.**
- **Loyalty to the government suffered considerable erosion:** This also showed how deep nationalism had reached.
- **Government officials including police participated**, passed on secret information to the activists, especially those belonging to lower levels of police and administration, resulting in an **erosion of government loyalty**.
- **Pilots and train drivers** by delivering bombs and other materials.

Although QIM was **violently suppressed by the British**, it had mobilised the masses with Unparalleled heroism and militancy, which was not seen during the Non-cooperation Movement (1920) and Civil Disobedience Movement (1930). QIM changed the **character of the Indian freedom** struggle and placed the demand for independence on the immediate agenda of the national movement.

#### Quit India Movement’s Enduring Relevance Today:

| Aspect                                     | Enduring Relevance Today                                    |
|--------------------------------------------|-------------------------------------------------------------|
| <b>Unity and Togetherness</b>              | Demonstrates the power of collective efforts for a cause    |
| <b>Determination and Dedication</b>        | Inspires perseverance and commitment to challenges          |
| <b>Upholding Sovereignty and Integrity</b> | Reinforces the importance of safeguarding national identity |
| <b>Striving for Independence</b>           | Encourages pursuit of self-reliance and autonomy            |
| <b>Overcoming Challenges and Adversity</b> | Provides lessons in resilience and overcoming obstacles     |
| <b>Social and Political</b>                | Inspires citizen participation for societal                 |

|                                 |                                                       |
|---------------------------------|-------------------------------------------------------|
| <b>Activism</b>                 | betterment                                            |
| <b>Leadership and Courage</b>   | Highlights the impact of bold leadership and courage  |
| <b>Promoting National Pride</b> | Instils a sense of patriotism and pride in the nation |

## Conclusion

As **Ram Manohar Lohia** wrote on the 25th anniversary of the Quit India Movement “**9th August was and will remain a people’s event**. 15th August was a state event... 9th August 1942 expressed the will of the people — **we want to be free, and we shall be free**. For the first time after a long period in our history, **crores of people** expressed their desire to be free...”

## 2. SRI AUROBINDO GHOSH

### Context

Recently, the **year-long celebration of the 150th Birth Anniversary** of Sri Aurobindo concluded at **Auroville, Puducherry**.

### About Sri Aurobindo

- **20th-century Bengali poet, philosopher, spiritual leader** and revolutionary freedom fighter.
- **Early Life:**
  - Born on **15 August 1872 in Calcutta district (now Kolkata)**, West Bengal.
  - Education began in **Christian convent school** in Darjeeling.
  - At the **age of 7 years**, he was taken to England along with his brothers.
  - Studied at **St. Paul’s School London (1884) and King’s College in Cambridge in 1890**.
  - In **1893**, Aurobindo returned to India and joined the **Baroda state**, first as a **bureaucrat** and then as a **professor of French at Baroda College**.
- **Participation in the National Movement**
  - **Pioneer of the Indian extremist movement** and helped in establishing **Anushilan Samiti in 1902**.
  - Shri Aurobindo left his job and plunged into active politics after **the partition of Bengal in 1905**.
  - During the Surat session of INC in 1907, known for the Surat Split, **he joined the extremist group led by Bal Gangadhar Tilak against the moderates**.
  - Shri Aurobindo advocated **passive resistance and not violence**. He, however, did not opine that to attain freedom, it is wrong to resort to violence.
  - In May 1908, Aurobindo was arrested in connection with **the Alipore Conspiracy Case**.
- **Literary Contribution:**
  - **'New Lamps for Old'**, articles written by him in InduPrakash from 1893-94, criticising moderate politics of Congress.
  - In March 1906, in a Bengali newspaper, Yugantar, he preached **open revolt and complete independence**.

- Edited **Bande Mataram** newspapers founded by Bipin Chandra Pal.
- After his release in 1909, Aurobindo started two weeklies, namely **Karmayogin in English and Dharma in Bengali**.
- In 1914, he started publishing a **philosophical magazine, Arya**.
- **Other Books include** a compilation of poems, letters and essays such as **Essays on the Gita (1922), Collected Poems and Plays (1942), The Synthesis of Yoga (1948), The Human Cycle (1949), The Ideal of Human Unity (1949), Savitri: A Legend and a Symbol (1950)**, etc.
- **Spiritual Journey:**
  - **Played an active role in the Indian Freedom Movement till 1910**, after which he became a spiritual reformer.
  - His important works like **the Life Divine, Essays on Geeta, The Synthesis of Yoga, and the epic poem 'Savitri'** were written during this period.
  - He developed a kind of **Yoga called Integral Yoga**.
    - ✓ Through **Integral Yoga**, he believed **human beings can achieve true self-realisation**.
    - ✓ **Internal Yoga aims at spiritual realisation** that not only liberates man's consciousness but also transforms his nature.
  - He founded a **community of spiritual seekers**, which took shape as **the Sri Aurobindo Ashram** in 1926 with Mirra Alfassa.
    - ✓ **Mirra Alfassa founded the Auroville**, i.e., the city of dawn, a universal town for a peaceful, progressive, and harmonious existence.
- **Aurobindo's life philosophy**
  - It is a synthesis of **idealism, realism, naturalism, and pragmatism**.
  - According to him, **Jnana (knowledge), Bhakti (devotion), and Karma (work ethics)** can lead man to the divine path.
    - ✓ **But the synthesis** of spirituality, creativity, and intellectuality is essential for a sound personality.
  - **Sri Aurobindo did not believe in any man-made divisions** and used to consider social inequalities as a major obstacle to raise national consciousness.
  - **Influenced by the teaching of Sri Ramanujacharya**, who argued for the inclusion of outcastes into the fold of Hinduism.

Sri Aurobindo Ghosh



### Principle of Education

Aurobindo was a distinguished philosopher and educationist who formulated rich educational thoughts to enrich our educational system comprehensively. The following thoughts are relevant to today

- **Child-centric education** with full freedom for the child to express her latent potential.
- **Introduction of moral and religious education** as an integral part of general education and by practice of religious life.
- **Training of the senses** as senses are the gateways of knowledge.
- **International education based** on universal love, sympathy, fellow feeling, peace & international understanding
- **Emphasis on Psychological methods** i.e. self – learning, practical experiences, learning by doing, teaching according to age, abilities & aptitude of the child.

### Concept of Nation and Theory of Spiritual Nationalism

- He believed that the nation is not **just a piece of land or a mass of human beings**.
- The 'nation' is a mighty 'shakti' composed of all the shaktis of all the millions of units that make up the nation. **It is thus a living entity.**
- Nationalism in his opinion is not merely **a political movement**
- In his opinion, nationalism is akin to religion. **It is a faith and a creed that one has to live.**
- **Nationalism is immortal** because it is not a creation of human beings but is created by God.
- If one wants to be a nationalist, **one must work for his nation.**

## 3. CHESS WORLD CUP 2023

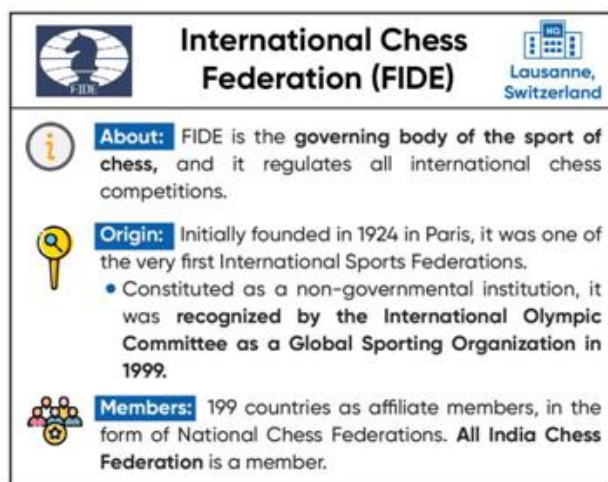
### Context:

Indian Grandmaster Rameshbabu Praggnanandhaa secured a second-place finish in the final of the International Chess Federation (FIDE) World Cup 2023.

### About FIDE World Cup

- **FIDE World Cup 2023:** The World Cup is a major chess event organised by FIDE, the international governing body.
  - Players who finish 1st, 2nd and 3rd in the FIDE World Cup qualify to take part in FIDE Candidates Tournament 2024.
- **FIDE Candidates Tournament 2024:** This tournament is between **8 players**, selected through different criteria and tournaments in the following manner
  - 3 spots – FIDE World Cup 2023, three players who finish 1st, 2nd (Praggnanandhaa) and 3rd.
  - 2 spots – FIDE Grand Swiss Tournament 2023, two players who finish 1st and 2nd.
  - 1 spot – FIDE World Championship Match 2023, Runner-up.
  - 1 spot – High-Level International Tournaments (HIT), the player with the best results during one year (2023).
  - 1 spot – The highest-rated player by standard rating in the January 2024 rating list provided that the player has played at least four standard-eligible tournaments.

- **FIDE World Chess Championship:** It is held between the **Reigning Champion** and the **Winner of the Candidates Tournament (the Challenger)**. This match determines the actual **World Chess Champion**.
  - Ding Liren (China) is the current Champion, and he will be challenged by the Winner of the Candidates Tournament to be held in 2024.



### About Chess Titles

- Based on ratings earned by players, **FIDE awards the most prestigious chess titles**. Once earned, these titles are held for life.
  - Chess titles indicate the strength of the best players.
  - Chess titles are also awarded by some national federations.
- **Viswanathan Anand** is a five-time world champion and **India's first grandmaster**.
- India has **around 80 grandmasters now**. Two of them are women, including **Koneru Humpy** and **Harika Dronavalli**.

### Conclusion

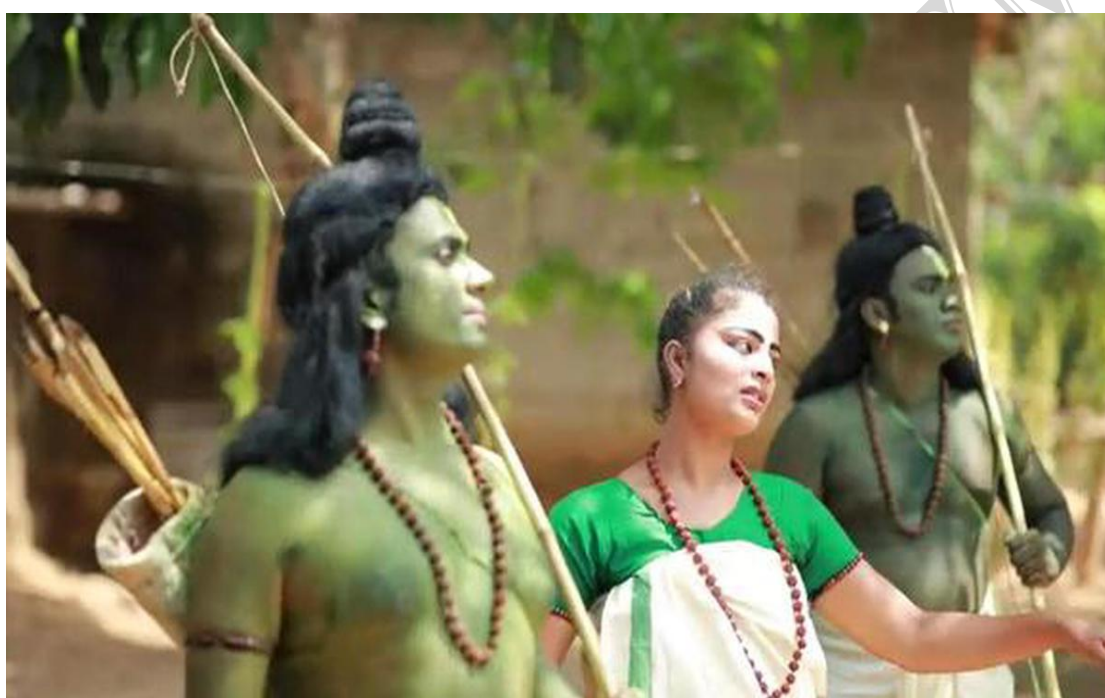
With younger players like **Rameshbabu Pragganandhaa**, **D Gukesh**, **Arjun Erigaisi**, and **Nihal Sarin** making a mark, it also **signals a generational shift in the game** itself, and that shift is likely to favour India heavily.

**Different Chess Titles**

| Titles                           | Ratings required |
|----------------------------------|------------------|
| Grandmaster (GM)                 | 2300             |
| International Master (IM)        | 2200             |
| FIDE Master (FM)                 | 2100             |
| Candidate Master (CM)            | 2000             |
| Woman Grandmaster (WGM)          | 2100             |
| Woman International Master (WIM) | 2000             |
| Woman FIDE Master (WFM)          | 1900             |
| Woman Candidate Master (WCM)     | 1800             |

#### 4. SEETHAKALI FOLK ART

- Seethakali is a **centuries-old folk art form** that is believed to have **originated at Perinad in Kollam district Kerala**.
- It is **performed as part of the harvest festival Onam**.
- It is **based on certain episodes taken from the epic Ramayana** and portrays characters such as Rama, Seetha, Ravana and Hanuman.
  - It's a **blend of songs, storytelling and fast movements**.
  - **Props and instruments** used during performances are all **made of natural materials** like bamboo and palm leaves.
  - **Vibrant coloured costumes and makeup** is used.



#### 5. GI TAGS IN NEWS

##### Context:

The Geographical Indications Registry granted the GI tag to **three famous products from Tamil Nadu**.

| Product                           | Description                                                                                                                                                                   | Place/Origin                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Jaderi namakatti</b>           | Clay sticks with <b>white colour, finger-like shape, and smooth texture</b> . Made by <b>Jaderi Tiruman (Namakatti)</b> Producers Society in Jaderi, Tiruvannamalai district. | Village of Jaderi, Tamil Nadu      |
| <b>Kanniyakumari Matti banana</b> | Traditional <b>table banana with medicinal value, highly fragrant, sweet with a sub-acid flavour, and powdery nature</b> .                                                    | Kanniyakumari district, Tamil Nadu |
| <b>Chedibutta saree</b>           | Handloom saree made <b>from art silk and cotton</b>                                                                                                                           | Veeravanallur town, Tirunelveli,   |

|  |                                                                                                                                                   |            |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|  | <b>mix fabric</b> , featuring the iconic “ <b>plant and flower</b> ” motif on the border and pallu. Woven by skilled <b>Sowrashttra weavers</b> . | Tamil Nadu |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------|------------|

In addition to these, **seven other products** from different regions of India also received GI tags, including

- **Agra leather footwear**
- **Rajasthan’s Nathdwara Pichhwai Painting**
- **Kashmir’s Mushqbudji rice**
- **Bihar’s Marcha Rice**
- **Jammu Kashmir’s Rajouri Chikri Wood Craft**
- **Agsechi Vayingim (Agassaim Brinjal) of Goa**
- **Sat Shiro Bheno (Sat Shirancho Bhendo) also known as Okra, is a vegetable crop of Goa.**

## 6. PAHARIS AND PADDARIS

**Context:**

- The government has introduced the **Constitution (Jammu and Kashmir) Scheduled Tribes Order (Amendment) Bill, 2023 in Lok Sabha** to include four communities in the list of Scheduled Tribes (STs) in Jammu and Kashmir.
- The **four communities proposed for ST status** are “**Gadda Brahmin,**” “**Koli,**” “**Paddari Tribe,**” and “**Pahari Ethnic Group.**”
- Currently, the dominant ST communities in **J&K are the Gujjars and Bakerwals**, who were given **ST status in 1991 along with the smaller groups of Gaddis and Sippis**. The proposed expansion of the ST list has caused unrest among the **Gujjar-Bakerwal community, who fear a reduction in their share of the quota benefits.**
- The Pahari Ethnic Group **includes Hindus, Muslims, and Sikhs with some Kashmiri settlers in Rajouri and Poonch districts.**
- The **paddari Tribe, residing in the remote paddar area of Kishtwar district, is also proposed for ST status.**
- The Bill seeks to include these four communities in the ST list, **potentially granting them reservation benefits in government jobs and educational institutions, despite existing apprehensions and disputes among different communities**

## 7. KIRTI CHAKRAS AND SHAURYA CHAKRAS

**Context:**

President **Droupadi Murmu** has sanctioned **76 gallantry awards for armed forces and Central Armed Police Forces personnel** on the eve of **India’s 77th Independence Day.**

- Among these, the Kirti Chakra, **the second-highest peacetime gallantry award, will be presented to four Central Reserve Police Force (CRPF) members who lost their lives during an anti-Naxal operation in Chhattisgarh in April 2021.**

- Additionally, **eleven individuals will receive the Shaurya Chakra, the third-highest peacetime gallantry award**, including personnel from the **Army, Jammu and Kashmir Police, and CRPF**.
- Five of these awardees will be posthumously honoured.
- The approved awards consist of **54 Sena Medals (Gallantry), three Nao Sena Medals (Gallantry), and four Vayu Sena Medals (Gallantry)**. The President has also granted **30 Mention- in-Despatches to the Army and one to an Air Force personnel**, acknowledging their significant contributions in various military operations.

## 8. KARNAIL SINGH ISRU

### Context:

On India's Independence Day, Punjab Chief Minister paid homage to **activist Karnail Singh Isru**, who died on the same day **in 1955 while participating in the Goa Liberation Movement**.

- Karnail Singh Isru was born in 1930 in what **is now Pakistan and was inspired by the freedom movement against colonial rule**. He joined the Communist Party of India (CPI) and became part of the **Goa Liberation Movement**, which aimed to hoist the Indian flag in Goa.
- Isru left his home to join the movement without informing his family and was part of a group of **Satyagarhis led by Sahodrabai Rai**.
- However, upon entering Patradevi village in Goa, Portuguese forces opened fire, and Isru was fatally shot in the chest at the age of 25.

**Goa was eventually annexed by India in 1961 through Operation Vijay.**

In Goa, **a bronze bust of Isru was installed in a primary school in Patradevi village**. The legacy of Karnail Singh Isru serves as **a reminder of the sacrifice made for India's freedom struggle and the Goa Liberation Movement**.

## 9. VAST MEGALITHIC SITE IN KERALA

### Context:

- A **recent archaeological excavation conducted by the State Archaeology Department in Kerala**, uncovered a significant number of megalithic **"hat stones," also known as Thoppikkallu in Malayalam**.
- Hat stones are **hemispherical laterite stones that were used as lids on burial urns during the megalithic period**.
- This discovery is notable as **it could potentially be the largest collection of hat stones found at an unprotected site in the state**.

### Key Findings:

- The team found **numerous megalithic burial sites and relics**, including a **unique rock-cut laterite burial chamber**, during the pipeline work that prompted the excavation.
- This site yielded **a large number of earthen urns and distinctive iron implements**, shedding light on **the culture and life of people who inhabited the area over 2,000 years ago**.

- Ashes were discovered within the urns and beneath the hat stones, which is different from the more common occurrence of cremated bones. **This suggests unique mortuary practices at this site.**



## 10. ANCIENT MAILARA CULT IN COASTAL KARNATAKA

### Context:

Recent discoveries of **two sculptures near Kundapura, Udupi district**, have confirmed the presence of the **ancient Mailara cult in the coastal region.**



- One sculpture was found in a well at Basrur and **depicts a royal hero on a horse holding a sword and a bowl in his hands.** This unique piece lacks the usual Mylaladevi figure on the horse's back. **The sitting posture of the horse is unusual and dates it to the 15th century A.D.**
- The second discovery is a **small stone tablet depicting Mailara and Mylaladevi both mounted on an ornate horse while holding swords in their right hands.** This relief, found in a tank during dredging, is in **side profile and appears to be from the 17<sup>th</sup> century.**
- Basrur was a **significant trading city during the Medieval period**, with trading **guilds like Uhayadesi and Nanadesi playing active roles.** This environment fostered various cults, including the popular **Mylara cult that was widespread in the Deccan region.**

#### About Mailara Cult:

- The Mailara cult is a religious tradition centred around the **worship of a folk deity named Mailara, who is believed to be a manifestation of Lord Shiva**. This cult is prevalent in parts of southern India, **particularly in the Deccan region**, including Karnataka, Maharashtra, Andhra Pradesh, and Tamil Nadu. The cult has its own **unique rituals, practices, and beliefs that have developed over time**.
- Mailara is often associated with other regional deities like **Mallanna in Andhra Pradesh and Khandoba in Maharashtra**. The cult has a diverse following that **includes people from various castes and occupations, ranging from agricultural and pastoral communities to martial groups**.

## GEOGRAPHY

### 1. INCREASED RAIN AND REDUCED SNOWFALL IN THE HIMALAYAN REGION

#### Context:

A new study has found that mountains across the globe, **including the Himalayas**, are now seeing more rainfall at elevations where it has mostly snowed in the past.

#### Status of Rainfall and Snowfall in the Himalayan Region:

- IPCC Special Report on the Ocean and Cryosphere in a Changing Climate **(2019)**: The IPCC reported that **snowfall had decreased in mountain regions**, including the Himalayas, due to higher temperatures, particularly **at lower elevations**.
- **Changing Precipitation Patterns**: Scientific studies have indicated shifts in precipitation patterns in the Himalayan region, with **more instances of extreme precipitation** occurring as rainfall rather than snowfall, even at higher altitudes.

#### Why Himalayan region is having Increased rain and reduced snowfall?

- **Changing Weather Patterns**: Alterations in atmospheric circulation, jet streams, and other weather systems can result in shifts in precipitation patterns.
- **Global Warming and Temperature Rise**: As global temperatures increase, the atmosphere can hold more moisture, leading to increased evaporation and subsequent precipitation.
- **Elevated Freezing Levels**: The freezing level, also known as the **zero-degree isotherm**, is the altitude at which falling precipitation transitions from snow to rain.
  - Rising temperatures **associated with global warming have caused the freezing level to rise**, leading to more rain at higher altitudes that used to receive snowfall.
- **Snowfall Reduction**: Warmer temperatures cause more precipitation to fall as rain rather than snow
- **Feedback Loops**: Less snow cover means there is less reflective surface to bounce sunlight back into space (albedo effect), causing further warming and contributing to the shift from snow to rain.
- **Warming-Induced Atmospheric Changes**: This can lead to a greater intensity of storms, causing heavy rainfall events in areas where snowfall was historically dominant.

**Impact of increased rain and reduced snowfall in the Himalayan region:**

| Impact                                       | Description                                                                                             | Examples                                                          |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| <b>Increasing disasters</b>                  | Shifts from snowfall to rainfall at higher elevations, affect <b>water availability and hazards</b> .   | More instances of heavy rainfall cause flash floods.              |
| <b>Water Resource Changes</b>                | Altered snowmelt and rain patterns affect river flow, water availability, and ecosystem dynamics.       | Changes in river flow and hydrological patterns.                  |
| <b>Increased Flood and Landslide Risk</b>    | Rainwater saturates the soil, leading to landslides, debris flows, and flash floods.                    | Uttarakhand's 2013 flash floods due to excessive rainfall.        |
| <b>Impact on Ecosystems and Biodiversity</b> | Altered precipitation affects vegetation, wildlife, and fragile mountain ecosystems.                    | Changes in alpine flora and fauna due to shifting climate.        |
| <b>Socioeconomic Consequences</b>            | Reduced snowfall impacts <b>winter tourism, agriculture, and water-dependent livelihoods</b> .          | Ski resorts face challenges due to shorter snow seasons.          |
| <b>Glacial Lake Outburst Floods (GLOFs)</b>  | Faster glacial melt leads to unstable glacial lakes and potential GLOFs, posing flood risks downstream. | <b>Imja Lake in Nepal</b> is at risk of GLOF due to glacial melt. |
| <b>Infrastructure Vulnerability</b>          | Changes in rainfall patterns challenge infrastructure resilience and lead to increased disaster risks   | Damage to roads, bridges, and hydropower plants.                  |

## 2. INDIA AND THE NORTHERN SEA ROUTE

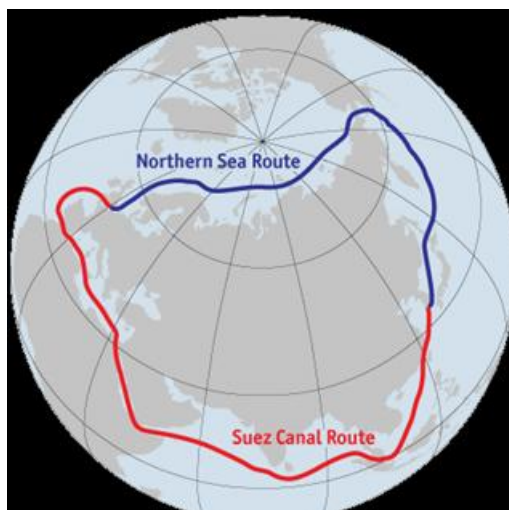
**Context:**

The Arctic region holds **significance for India** due to potential impacts on economic security, water security, and sustainability arising from climate change.

**What is the Northern Sea Route (NSR)?**

- It is the **shortest shipping route** connecting Europe and the Asia-Pacific region. Spanning 5,600 km, it passes through **four seas of the Arctic Ocean**. The route starts at the boundary between the **Barents and Kara seas (Kara Strait)** and concludes at the **Bering Strait (Provideniya Bay)**. The NSR offers potential distance **savings of up to 50% compared to existing shipping lanes via Suez or Panama**.

## Northern Sea and Suez Canal routes



### How is Russia making the NSR navigable?

- Russia ensures the navigability of the Northern Sea Route (NSR) **by using icebreaking assistance**, as the Arctic Ocean remains icebound for most of the year. Russia maintains the world's only **nuclear-powered icebreaker fleet**.
- The inaugural nuclear icebreaker, “**Lenin**,” operated from **December 1959 for thirty years**. Today, the fleet of nuclear- powered icebreakers, overseen by Rosatom’s subsidiary FSUE Atomflot, ensures secure navigation on the Northern Sea Route (NSR).

### India’s participation in NSR development is driven by:

- **Growing Cargo Traffic:** NSR cargo traffic increased by about **73% during 2018-2022**.
- **Strategic Transit Route:** India’s geographical location and reliance on sea transportation make the NSR a crucial transit route.
- **Chennai-Vladivostok Maritime Corridor (CVMC):** This project, stemming from a 2019 memorandum of intent, **shortens transport time to 12 days** (almost reduced by a third). It allows efficient trade through the **Sea of Japan, the South China Sea, and Malacca Strait**.
- **Cargo Potential:** A study by **Chennai Port Trust** shows CVMC can import items like coking coal, crude oil, LNG, and fertilizers from Russia to India efficiently
- **Geopolitics:** India would like to complement China and Russia’s potential collective influence over NSR.

### India’s engagement in the Arctic:

- **India’s engagement with the Arctic began when it signed the Svalbard Treaty** in February 1920 in Paris between Norway, the US, Denmark, France, Italy, Japan, the Netherlands, Great Britain, and Ireland, and the British overseas Dominions and Sweden concerning Spitsbergen. Ever since then, India has been closely monitoring all the developments in the Arctic region.
- **India initiated its Arctic research program in 2007** with a focus on climate change in the region.

- The objectives included studying tele connections between the **Arctic climate and the Indian monsoon**, to characterize sea ice in the Arctic using satellite data, and to estimate the effect on global warming.
- India has set up a research station **Himadri at NyÅlesund, Svalbard, in 2008**
- **In May 2013**, India became an **observer state of the Arctic Council** along with five others including China.
- **India launched its inaugural multi-sensor** moored observatory and northernmost atmospheric laboratory in **2014 and 2016 respectively**
- Till last year, **thirteen expeditions to the Arctic** were successfully conducted.

#### Significance of the Arctic region significant to India

| Key Reasons                  | Significance of the Arctic Region for India                                                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Climate Impact</b>        | The vulnerability of the Arctic to climate change could affect India's economic and water security.                                          |
| <b>Natural Resources</b>     | The region holds vast unexplored hydrocarbon reserves and valuable minerals, contributing to India's resource needs.                         |
| <b>Economic Development</b>  | India's economic development in the Arctic aligns with UN Sustainable Development Goals.                                                     |
| <b>Historical Engagement</b> | India's connection dates back to the Svalbard Treaty in 1920, with ongoing scientific studies and Arctic Council participation.              |
| <b>Trade and Transit</b>     | The Arctic's Northern Sea Route (NSR) offers a potentially shorter trade route, particularly for India's sea-dependent trade.                |
| <b>Global Influence</b>      | By engaging in Arctic affairs, India can assert its global presence and contribute to discussions on climate change and resource management. |

**Last Year, India released its Arctic Policy, with the aim of enhancing the country's cooperation with the resource-rich and rapidly transforming region**

### POLITY AND GOVERNANCE

#### 1. DIGITAL PERSONAL DATA PROTECTION ACT 2023

##### Context:

The President of India recently granted assent to the Digital Personal Data Protection Bill (DPDP), 2023.

##### Background

- In 2017, the Supreme Court recognised privacy as a fundamental right in the **K.S. Puttaswamy vs. Union of India case**.

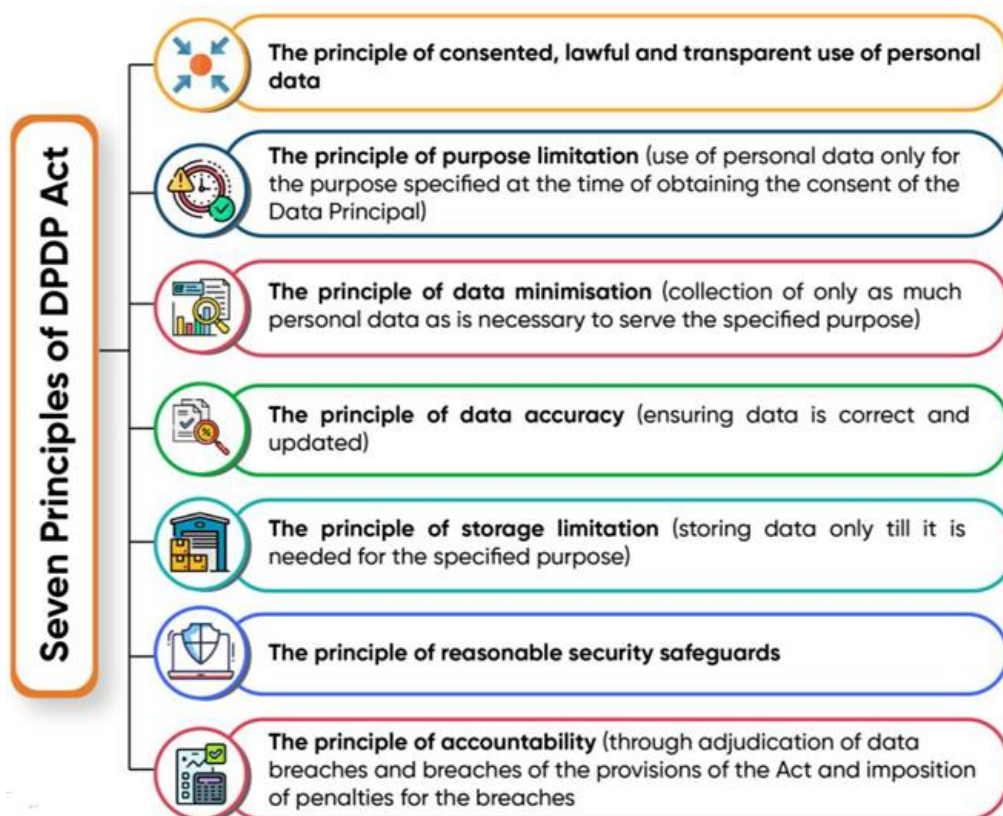
- Following this, the **Justice Srikrishna Committee** (established by the Ministry of Electronics and Information Technology (**MeitY**)) proposed the initial draft of the Personal Data Protection (PDP) Bill in 2018.
- The government revised **the draft and introduced it as the PDP Bill 2019**. Bill referred to a joint committee of both the Houses of Parliament (JPC).
- However, in 2022, the **government withdrew the PDP Bill 2019** by citing the **extensive changes made by the Joint Committee of Parliament** to it.
- **MeitY released a draft of the DPDP Bill 2022** for public consultations, which later became the DPDP Act 2023.

## Significance of DPDP act



### About Digital Personal Data Protection (DPDP) Act 2023

- DPDP Act aims to **regulate the processing of digital personal data** while **ensuring individuals' right to protect their data** and the **need to process it for lawful purposes**.
- It **protects digital personal data** (that is, the data by which a person may be identified) **by providing:**
- **The obligations of Data Fiduciaries** (that is, persons, companies and government entities who process data) for data processing (that is, collection, storage or any other operation on personal data);
- **The rights and duties of Data Principals** (that is, the person to whom the data relates);
- **Financial penalties for breach** of rights, duties, and obligations.



### Key Provisions of the Act

| Specifications         | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Applicability</b>   | <ul style="list-style-type: none"> <li>• <b>Processing of digital personal data within India</b> where such data is collected: <ul style="list-style-type: none"> <li>○ in digital form or</li> <li>○ in non-digital form and digitised subsequently.</li> </ul> </li> <li>• <b>Processing of personal data outside India</b> if it is <b>for offering goods or services in India</b>.</li> <li>• <b>Does not apply to:</b> <ul style="list-style-type: none"> <li>○ personal data <b>processed for any personal purpose</b>.</li> <li>○ personal data that is <b>made or caused to be made publicly available by-</b> <ul style="list-style-type: none"> <li>✓ <b>Data Principal to whom such personal data relates;</b> or</li> <li>✓ <b>any other person who is under legal obligation to make such personal data publicly available.</b></li> </ul> </li> </ul> </li> </ul> |
| <b>Consent</b>         | <ul style="list-style-type: none"> <li>• Personal data may be <b>processed only for a lawful purpose</b> after obtaining the consent of the Data Principal (who shall have the right to <b>withdraw consent at any time</b>).</li> <li>○ <b>Consent will not be required for 'legitimate uses'</b> including the provision of benefits or services by the government, medical emergency etc.</li> <li>• For a child or a person with a disability, consent will be provided by the <b>parent or legal guardian</b>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                  |
| <b>Data Protection</b> | <ul style="list-style-type: none"> <li>• Provides for the <b>establishment of DPBI by the Central government</b>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Board of India (DPBI)</b>               | <ul style="list-style-type: none"> <li>• <b>Key functions of the Board:</b> <ul style="list-style-type: none"> <li>○ <b>Monitoring compliance</b> and imposing penalties.</li> <li>○ <b>Directing data fiduciaries to take necessary measures</b> in event of a data breach.</li> <li>○ <b>Hearing grievances made by affected persons.</b></li> </ul> </li> <li>• Board members will be <b>appointed for two years</b> and will be <b>eligible for re-appointment.</b></li> <li>• <b>Appeals against its decisions will lie with the Telecom Disputes Settlement and Appellate Tribunal (TDSAT)</b></li> </ul>                                                                                               |
| <b>Rights and Duties of Data Principal</b> | <ul style="list-style-type: none"> <li>• Data principal will have the right too <ul style="list-style-type: none"> <li>○ <b>Obtain information</b> about processing.</li> <li>○ <b>Seek correction and erasure</b> of personal data.</li> <li>○ <b>Grievance redressal.</b></li> <li>○ <b>Right to nominate a person to exercise rights in case of death or incapacity.</b></li> </ul> </li> <li>• Data principals <b>must not register a false or frivolous complaint</b> and <b>furnish any false particulars.</b></li> <li>• Violation of duties will be <b>punishable with a penalty of up to Rs 10,000.</b></li> </ul>                                                                                   |
| <b>Obligations of Data Fiduciaries</b>     | <ul style="list-style-type: none"> <li>• <b>Data Fiduciary (Entity determining the purpose and means of processing)</b> must- <ul style="list-style-type: none"> <li>○ <b>Ensure the accuracy</b> and completeness of data.</li> <li>○ <b>Build reasonable security safeguards</b> to prevent a data breach.</li> <li>○ <b>Inform DPBI</b> and affected persons in the event of a breach.</li> <li>○ <b>Erase personal data as soon as the purpose has been met</b> and <b>retention is not necessary for legal purposes.</b></li> </ul> </li> </ul>                                                                                                                                                          |
| <b>Significant Data Fiduciaries (SDF)</b>  | <ul style="list-style-type: none"> <li>• <b>Central Government may notify any Data Fiduciary as SDF</b>, based on factors such as: <ul style="list-style-type: none"> <li>○ <b>Volume and sensitivity</b> of personal data processed.</li> <li>○ <b>Risk to the rights of data principal</b></li> <li>○ <b>Potential impact on the sovereignty and integrity of India</b></li> <li>○ <b>Security of the State</b></li> <li>○ <b>Risk to electoral democracy</b></li> <li>○ <b>Public order</b></li> </ul> </li> <li>• SDF will have certain additional obligations including <b>appointing a data protection officer and an independent data auditor</b> and <b>undertaking impact assessment.</b></li> </ul> |
| <b>Exemptions</b>                          | <ul style="list-style-type: none"> <li>• Rights of the data principal and obligations of data fiduciaries (except data security) will <b>not apply in specified cases, including:</b> <ul style="list-style-type: none"> <li>○ <b>For notified agencies</b>, in the interest of security, sovereignty, public order, etc.;</li> <li>○ <b>For research, archiving or statistical purposes;</b></li> <li>○ <b>For start-ups or other notified categories</b> of Data Fiduciaries;</li> <li>○ <b>To enforce legal rights and claims;</b></li> </ul> </li> </ul>                                                                                                                                                  |

|                                                |                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                | <ul style="list-style-type: none"> <li>○ <b>Prevention and investigation of offences;</b></li> <li>○ <b>To perform judicial or regulatory functions;</b></li> <li>○ <b>To process in India personal data of non-residents</b> under foreign contract.</li> <li>● The <b>central government may exempt certain activities</b> in the interest of the security and public order.</li> </ul> |
| <b>Processing of personal data of children</b> | <ul style="list-style-type: none"> <li>● While processing the personal data of a child, <b>data fiduciary must not undertake:</b> <ul style="list-style-type: none"> <li>○ <b>processing that is likely to cause any detrimental effect</b> on well-being of child, and</li> <li>○ <b>tracking, behavioural monitoring, or targeted advertising.</b></li> </ul> </li> </ul>               |
| <b>Cross-border transfer</b>                   | <ul style="list-style-type: none"> <li>● Bill allows the <b>transfer of personal data outside India, except to countries restricted by the government.</b></li> </ul>                                                                                                                                                                                                                     |
| <b>Penalties</b>                               | <ul style="list-style-type: none"> <li>● Act specifies penalties for various offences such as <b>up to Rs 200 crore for non-fulfilment of obligations for children</b>, and <b>Rs 250 crore for failure to take security measures</b> to prevent data breaches.</li> </ul>                                                                                                                |

#### Know the term

- **Right to data portability:** It allows individuals to obtain and reuse their personal data for their own purposes across different services.
- **Right to Forgotten:** It is the right to remove or erase content so that it's not accessible to the public at large.

#### Limitations of Act

- **Violate Fundamental Rights:** Exemptions for the State may **lead to data collection, processing, and retention beyond what is necessary** and may violate the fundamental right to privacy.
  - Using exemptions, a government agency may collect data about citizens to create a 360-degree profile for surveillance.
- **Inadequate Safeguard:** The transfer of personal data outside India **may not ensure adequate data protection standards in the countries where the transfer of personal data is allowed.**
- **No compensation:** The Act has removed Section 43A of the Information Technology (IT) Act, 2000, which mandated companies to compensate users in case of mishandling their data.
- **Complicated approach to grievance redressal:** Aggrieved individuals are required to first approach the data fiduciary's redressal mechanism.
  - Unresolved grievances can be escalated to the **Data Protection Board**, with further appeals to the **TDSAT**.
- **RTI Exemption:** The Act proposes that the **personal information of public officials will not be disclosed under the Right to Information (RTI) Act**, which could aid corrupt practices by not disclosing assets, liabilities etc.
- **Clear definition:** The Act provides that the data fiduciary will not undertake any processing that has a detrimental

- effect on the well-being of a child. However, there is **no definition of detrimental effect or any guidance** for determining such effect.
- **No provision for some rights:** The Act **does not grant the right to data portability and the right to be forgotten** to the data principal.

### Way forward

- **Cross-Border Data Governance:** Mechanisms need to be developed for governing cross-border transfer of data especially to countries not mentioned in the list provided by the notification.
- **Data Rights:** The right to data portability and the right to be forgotten should be provided especially in cases where data collection and storage pose harm to the reputation, life, identity etc. of a person.
- **Prevent Misuse:** Terms like sovereignty and integrity of India should be clearly defined along with a defined procedure to provide exemption.
- **Quantifying time duration:** A specific time should be defined to delete the data once the purpose has been fulfilled or the Data Principal withdraws his/her consent to the processing of personal data

### GDPR v/s DPDP

| General Data Protection Regulation (GDPR)                                                                                                              | Digital Personal Data Protection (DPDP) Act, 2023                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GDPR applies to processing of Personal Data wholly or partly by automated means and to Personal Data which form or will form a part of a filing system | The DPDP Act will apply to digitized personal data and non-digitized personal data which is subsequently digitized                                                      |
| Minors under age 16 need parental consent. Member states of Europe can lower this age to 13 for their regions                                          | Children under the age of 18 need consent from parents/guardian                                                                                                         |
| Breaches should be notified to the Supervisory Authority within 72 hours and possibly to the affected Data Subjects                                    | The Act does not specify a timeframe for Personal Data breach notification                                                                                              |
| GDPR does not include right to nominate however provides for the right to portability Organizations have 30 days to respond to a Data Subject request  | The Act comprises of an additional right to nominate while omits the right to portability and timeline to respond to the Data Principal requests has not been specified |
| GDPR lays down specific mechanisms for transferring data to third country such as standard contractual clauses and binding corporate rules             | The Act has not identified any transfer mechanisms for transferring Personal Data                                                                                       |
| Both Controllers and Processors are under the obligation to appoint a DPO in specific circumstance                                                     | Only the Significant Data Fiduciary shall have to appoint DPO as a point of contact for the Data Protection Board                                                       |
| Data Controller and Data Processor are required to maintain the records of processing activities (ROPA)                                                | The Act does not include any obligation for Data Fiduciaries to maintain records of processing activities (ROPA)                                                        |

## 2. IMPACT OF ARTICLE 370 ABROGATION

### Context:

The article is in continuation of yesterday's article (Constitutional Challenge to the 2019 Abrogation of Article 370)

**Positive changes in the security situation in Jammu and Kashmir after the removal of Article 370:**

| Aspect                                    | Changes and Examples                                                  |
|-------------------------------------------|-----------------------------------------------------------------------|
| <b>Decrease in Stone Pelting</b>          | Incidents reduced significantly; <b>618 in 2019 to 76 in 2021</b>     |
|                                           | Injuries to security forces dropped from <b>64 to 10</b>              |
| <b>The decline in Terrorism Incidents</b> | <b>32% reduction</b> in acts of terrorism since August 2019           |
|                                           | Deaths of security forces decreased by <b>52%</b>                     |
|                                           | Reduction of <b>14% in “admission of terrorists”</b>                  |
| <b>Enhanced OGW Arrests</b>               | Arrests of <b>over-ground workers (OGWs)</b> increased from 82 to 178 |
|                                           | Disruption of militant support networks                               |
| <b>Improved Law and Order</b>             | Only <b>20 law and order incidents</b> were recorded in J&K in 2022   |
|                                           | General improvement in the <b>overall security environment</b>        |
| <b>Deterrence of Infiltration</b>         | Fewer infiltrations and armed forces personnel were killed.           |

**Negative changes in the security situation in Jammu and Kashmir**

| Aspect                                  | Changes and Examples                                                                  |
|-----------------------------------------|---------------------------------------------------------------------------------------|
| <b>Targeted Killings</b>                | Increase in <b>killings of civilians</b> , particularly Kashmiri Hindus and outsiders |
|                                         | Over <b>50% of civilian deaths post-August 5, 2019</b> , in the past eight months.    |
| <b>Low-Cost Drone Threat</b>            | Small weapons <b>dropped by drones</b> from across the border aid killings            |
| <b>Alleged ‘Part-Time’ Militants</b>    | <b>Engagement of ‘part-time’ militants</b> by handlers in Pakistan for attacks        |
| <b>Attacks on Hindu Dominated Areas</b> | Militants targeting <b>Hindu-majority areas with IEDs</b>                             |
| <b>Erosion of Trust</b>                 | Concerns about <b>security and safety among locals</b> and minorities                 |
| <b>Fragile Security Successes</b>       | Security achievements overshadowed by persistent threats                              |

**Positive and Negative changes in J&K’s political landscape after the abrogation of Article 370:**

| Aspect                     | Positive Changes                                                                                                                            | Negative Changes                                                                                                                                          |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Local Governance</b>    | Establishment of <b>Panchayati Raj institutions</b> , <b>District Development Council (DDC)</b> elections held in all 20 districts in 2020. | Complaints of <b>limited power and influence for elected DDC members</b> , delays in disbursing <b>honorariums</b> ; Delays in holding Assembly elections |
| <b>Political Alliances</b> | Formation of People’s Alliance for <b>Gupkar Declaration (PAGD)</b> with National Conference and PDP                                        | Fragmentation of political parties, leadership changes, <b>desertion of senior leaders</b> from established parties.                                      |

|                                       |                                                                                                                                 |                                                                                                             |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|                                       | uniting.                                                                                                                        |                                                                                                             |
| <b>Administrative Redistricting</b>   | <b>Delimitation Commission</b> redraws Assembly constituencies increases representation, and <b>introduces reserved seats</b> . | Concerns about the <b>accuracy and fairness of the delimitation process</b> , and potential gerrymandering. |
| <b>New Political Outfits</b>          | The emergence of <b>J&amp;K Apni Party and Jammu and Kashmir Progressive Azad Democratic Party (JKPADP)</b> .                   | <b>The splintering of traditional political parties</b> created a more diverse political landscape.         |
| <b>ST List Expansion Legislation</b>  | Proposal to include new groups in the state's ST list, aiming for broader representation.                                       | Protests and demonstrations by existing ST groups <b>fearing dilution of political empowerment</b>          |
| <b>Transparency and Participation</b> | Increased <b>engagement of local communities</b> in governance through Panchayati Raj.                                          | Concerns about the <b>effectiveness and autonomy of local bodies</b> under the new governance structure.    |

### 3. REFORMING INDIA'S CRIMINAL LAWS

#### Context:

The government introduced three bills in the Lok Sabha to replace the existing criminal laws in India.

#### More on news

- The three bills include:
  - Bharatiya Nyaya Sanhita 2023** replacing the **Indian Penal Code (IPC), 1860**.
  - Bharatiya Nagarik Suraksha Sanhita 2023** replacing the **Code of Criminal Procedure (CrPC), 1973**.
  - Bharatiya Sakshya Bill 2023** replacing the **Indian Evidence Act, 1872**.
- These bills have been referred to the Standing Committee.

#### Need of these bills

- Addressing large pendency in courts:** Union Law Minister stated that **almost 4.7 crore cases are pending** collectively in the Supreme Court, High Courts and Subordinate Courts.
- Timely justice delivery:** Complex legal procedures and a lack of resources have led to many **undertrials** languishing in jails, **constituting around 70% of the prison population**.
- Increasing conviction rates:** The criminal justice system's inefficiencies, including inadequate forensic investigation, policing deficiencies, and the influence of powerful individuals on law enforcement, contribute to **low conviction rates (around 50%)**.
- Evolution of the criminal justice system:** Societal changes and emerging challenges require an evolving and adaptable criminal justice system.
  - Also, integrating modern technology in evidence gathering, storage, and presentation would aid in discovering various criminal dimensions.

- **Erasing colonial legacy:** India's criminal justice system is rooted in its colonial past, which has led to a set of laws and procedures that may **not be entirely relevant or suitable for the country's current socio-economic and cultural context.**

### 3.1. BHARATIYA NYAYA SANHITA 2023

Bharatiya Nyaya Sanhita 2023 will repeal the Indian Penal Code, 1860 (IPC), which is the principal law on criminal offences.

#### Background

- In 1834, the **first Indian Law Commission** was constituted under the Chairmanship of **Lord Thomas Babington Macaulay** to examine the jurisdiction, power and rules of the existing Courts as well as the police establishments and the laws in force in India.
  - It produced a **draft of the Indian Penal Code (IPC) in 1837**, which was based on the English common law and with colonial interests in mind.
  - The enactment of the IPC was delayed due to subsequent revisions and the 1857 revolt. It was **enacted in 1860** and **came into force in 1862.**
- After independence, it underwent **several amendments**, and all these alterations and modifications made it a **complicated code of law.**
- The new bill aims to:
  - **strengthen law and order,**
  - **focus on simplifying the legal procedure,** and
  - **make existing laws relevant to the contemporary situation** of the common man.

#### Do you know

The Charter Act, 1833 established an All India legislature, the Legislative Council, created an office of Law members and provided for the appointment of a Law Commission.

#### Major Provisions of the Bill

- **Sedition:** The Bill **removes** the offence of sedition (Section 124A of IPC). It **instead penalises** the following\*:
  - exciting or attempting to excite **secession, armed rebellion, or subversive activities,**
  - encouraging feelings of **separatist activities,** or
  - **endangering the sovereignty or unity and integrity** of India.
- These offences may involve the **exchange of words or signs, electronic communication, or the use of financial means.** These will be punishable with imprisonment of up to seven years or life imprisonment and a fine.
- **Terrorism as an offence:** The Bill defines terrorism as an act that **intends to threaten the unity, integrity, and security** of the country, to **intimidate the general public or disturb public order.** Terrorist acts include:
  - Using firearms, bombs, or hazardous substances (biological or chemical) to cause death, danger to life, or spread a message of fear,

- Destroying property or disrupting essential services, and
- Activities included in the treaties listed in the Second Schedule of the Unlawful Activities (Prevention) Act, 1967, such as unlawful seizure of aircraft or taking of hostages.
- **Organised Crime as an offence:** The Bill defines organised crime as **a continuing unlawful activity** such as kidnapping, extortion, contract killing, financial scams, cybercrime etc., carried out by **individuals acting singly or jointly** as members of or **on behalf of a crime syndicate**.

### Potential Impact

- **Subjective interpretation:** Unclear definitions of “criminal activity” may lead to their improper application and affect Freedom of Speech and Expression. For example:
- “Subversive activities” might include any form of critique, or
- ‘Terrorist acts’, which now include damage to property and provocation or intimidation.
- **Enhanced policing powers:** Enhanced discretionary action-taking powers of police personnel may increase the scope for arbitrary police action.
- **Delays in existing trials:** Though these bills exclude their application to pending proceedings and trials, courts are **likely to be bombarded with interpretation**, resulting in delays in the actual trial of the offences.

### 3.2. BHARATIYA NAGARIK SURAKSHA SANHITA 2023

Bharatiya Nagarik Suraksha Sanhita, 2023 will repeal the **Code of Criminal Procedure, 1973**. The Code provides for the procedure for arrest, prosecution, and bail for offences under various Acts, including the Indian Penal Code, 1860.

#### Background

- CrPC was **first enacted in 1882** by the British Parliament and has undergone several amendments, most importantly in 1898, 1923 and 1955.
- The Law Commission of India, in its 41st report, recommended a significant revision of the code, which led to the **creation of CrPC 1973**.

#### Major Provisions of the Bill

- **Detention of Undertrials:** First-time offenders will be released on bail if they have completed detention for one-third of the maximum imprisonment for an offence.
  - If the accused has **spent half of the maximum period of imprisonment** during investigation or trial, he/she must be released on a personal bond. This does not apply to offences which are punishable by death and life imprisonment.
- **Trials in electronic mode:** All trials, inquiries and proceedings can be held in electronic mode.
- **Medical examination of the accused:** Any police officer can request for medical examination of the accused in certain cases, such as rape.
- **Forensic investigation:** It mandates forensic investigation for offences punishable with at least seven years of imprisonment.
  - If a state does not have a forensics facility, it shall utilise such facility in another state.

- **Signature and finger impressions:** It allows for the collection of specimen signatures, handwriting, finger impressions and voice samples from any person, whether arrested or not.
- **Timelines:** It prescribes timelines for various procedures such as giving judgment, informing victims of the progress of the investigation and framing of charges.
- **Trial in the absence of offender:** It provides for the conduct of trial and pronouncement of judgment in the absence of a proclaimed offender.
  - **Proclaimed offender** refers to a person who is accused of an offence punishable with imprisonment of at least 10 years or death and fails to appear at a specified time and place as specified by a Court.
- **Stopping political waiver of punishments:** The bill adds that **death sentences can only be converted to life imprisonment** and life imprisonment can be pardoned only within seven years of punishment.

### Potential Impact

- **Expedited case disposal:** Prescribed timelines for different judicial procedures and framing of chargesheets will help in the timely delivery of justice.
- **Integration of technology:** The bills provide for the forensic investigation of crimes and the integration of Information and Communication Technology (ICT) tools into the investigation and judicial process.
- **Improvement in rights of victims:** Provision allows registration of FIR in any police station irrespective of where the offence was committed
- **Fairness in investigation:** Mandatory video recording of search and seizure seeks to address fairness in police investigations.
- **Increase in detention period:** The period during which an arrested person can be sent to police custody has been expanded.

### 3.3. BHARATIYA SAKSHYA BILL 2023

Bhartiya Sakshya Bill, 2023 will **repeal the Indian Evidence Act, 1872**. The Act provides rules for the admissibility of evidence in legal proceedings.

#### Background

- The Evidence Act was enacted in 1872 with a view to **consolidate the laws relating to evidence** on which the court could come to a conclusion and pronounce the judgment.
- The law of evidence (not being substantive or procedural law), falls in the category of '**adjective law**', which defines the pleading and methodology by which the substantive or procedural laws are operationalised.
- The existing law **does not address the technological advancement** undergone in the country during the last few decades.

#### Know the term

- **Substantive Law:** These are basically laws derived from Common, Statutory, Constitution and the Principles found in Judicial decisions. Eg. Penal Law, law of property etc.
- **Procedural Law:** It is that law which prescribes a method of enforcing rights or obtaining redress for their invasion: Machinery for carrying on a Suit. E.g Code of Civil Procedure, Code of Criminal Procedure etc.

### Major Provisions of the Bill

- **Electronic or digital records as evidence:** It provides that electronic or digital records will have the same legal effect as paper records.
  - It **expands electronic records** to include information stored in semiconductor memory or any communication devices (smartphones, laptops).
  - This will also include records on **emails, server logs, smartphones, locational evidence and voicemails**.
- **Oral evidence:** Oral evidence includes statements made before Courts by witnesses in relation to a fact under inquiry.
- The Bill adds any **information given electronically** to be considered as oral evidence.
- **Joint trials:** It refers to the **trial of more than one person for the same offence**. In a joint trial, if a confession made by one of the accused which also affects other accused is proven, it will be treated as a confession against both.

### Potential Impact

- **Expansion in the use of electronic evidence:** This can lead to a reduction in wrongful convictions and provide help in investigating cases faster.
- **Issues of privacy:** It emerges from the seizure of electronic devices and access to the sensitive information that may be stored within them.

### Conclusion

The potency of reforms in the criminal justice system hinges on their alignment with its capacity to implement it effectively. The success of criminal law reforms has to take an arduous journey from its **inception, formulation, implementation approach and regular oversight**.

## 4. GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI (AMENDMENT) BILL, 2023

### Context:

The Government of National Capital Territory of Delhi (Amendment) Bill, 2023, was introduced in the Lok Sabha, leading to opposition protests and debates.

### About the Bill:

The bill aimed to replace **the National Capital Territory of Delhi (Amendment) Ordinance, 2023**, which deals with the **control of services in Delhi**.

### Background of the Issue:

- The Delhi government and Lieutenant Governor have been in a **legal battle since 2015** over control of “services” in Delhi.
- The Supreme Court **gave a split verdict in 2019**, and a five-judge Constitution Bench recently (May 2023) granted more powers to the Delhi government over services. It ordered that the **Delhi government will have control over administrative services** other than matters related to public order, police, and land.

- To counter it, the central government passed the **National Capital Territory of Delhi (Amendment) Ordinance, 2023**.
- The ordinance excluded “**services**” from the purview of the Delhi legislature and **conferred LG with more powers**. It will now be replaced by the Government of National Capital Territory of Delhi (Amendment) Bill, 2023.

#### Key features of the new bill:

| Aspect                              | Description                                                                                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>                      | To amend certain provisions of the Government of <b>NCT of Delhi Act, 1991</b> .                                                                                             |
| <b>Establishment of NCCSA</b>       | Introduces the <b>National Capital Civil Services Authority (NCCSA)</b> to provide recommendations to the LG on service matters.                                             |
| <b>Composition of NCCSA</b>         | NCCSA consists of the <b>Chief Minister of Delhi (Chairperson)</b> , Principal Home Secretary, and Chief Secretary of the Delhi Govt.                                        |
| <b>Empowerment of Central Govt.</b> | Central Govt. empowered to <b>make rules regarding the</b> Government of National Capital Territory of Delhi’s affairs, officer & employee functions, terms, and conditions. |
| <b>Discretionary Power to LG</b>    | LG granted <b>discretionary power over matters beyond Delhi Assembly’s competence</b> or requiring judicial/quasi-judicial action.                                           |

#### Concerns regarding the bill:

|                                                |                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Centralization of Power</b>                 | Critics argue that the Bill centralizes power in the hands of the LG, diminishing the elected government’s authority. |
| <b>Bypassing the Legislative Assembly</b>      | Opponents claim that the Bill bypasses the elected Legislative Assembly’s decision- making role.                      |
| <b>Impact on Cooperative Federalism</b>        | Critics argue that the bill is undermining the democratic mandate and interfering with local governance.              |
| <b>Potential for Conflict</b>                  | Some fear that discretionary power given to LG could lead to conflicts between the elected govt. and LG.              |
| <b>Constitutional Validity</b>                 | Questions arise about the <b>constitutional validity of the Bill and its alignment with federal principles</b> .      |
| <b>Curtailling Delhi Government’s Autonomy</b> | Critics worry that the Bill might curtail the autonomy of the Delhi government in policy-making                       |

#### How UTs are administered?

The Union Territories (Uts) in India are administered by **the President** through an **appointed administrator**, who represents the President and exercises administrative powers in the UT. In some Uts, such as **Delhi and Puducherry**, the administrator holds significant powers, including the ability to make laws and regulations for the UT, while in others, the administrator’s powers are limited to **providing advice to the elected government**.

### Special provision for Delhi UT:

- Special provisions have been made for certain Uts, such as **Puducherry, Delhi, and Jammu and Kashmir (yet to be constituted)**, which have a **legislative assembly and a Council of Ministers headed by a Chief Minister**. The legislative assembly of these Uts has the power to make laws with respect to matters enumerated in **List II or List III in the Seventh Schedule** of the Constitution insofar as these matters are applicable in relation to the UT.
- However, **some entries in List II, such as public order, police, and land**, are not within the legislative competence of the legislative assembly of Delhi.

## 5. JUSTICE G. ROHINI COMMISSION

### Context:

The **Justice G. Rohini Commission**, tasked with sub-categorising Other Backward Classes (OBC) caste groups, has submitted its report to the **Ministry of Social Justice and Empowerment** after nearly six years.

- **Formed in 2017** and led by former **Delhi High Court Chief Justice G. Rohini**, the commission aimed to **examine the concentration of reservation and benefits among dominant OBC caste groups**.
- Based on its findings, **the commission was to suggest a breakdown of the over 2,600 caste groups on the Central OBC list to ensure a more equitable redistribution of benefits**.

Although the report is not out, the commission's recommendations may involve **categorizing the caste groups into broad categories, with the dominant castes receiving the smallest share of the 27% reservation**, and historically marginalized groups getting a larger share.

## 6. ASPECTS OF ELECTION PROCESS AND REFORM

Recently, the Department-related Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice tables a report on **"Specific aspects of the election process and their reform"**.

### More about news

- The report analyses the significance of **elections in India and their influence on democratic governance, political representation, and societal progress**.
- It **explores different facets**, including **voter participation and comprehensive representation** through a single electoral roll, **transparency and accountability of candidature** and the **minimum age for contesting elections**.

### 6.1. COMMON ELECTORAL ROLL (CER)

By consolidating the Electoral Rolls into a single, comprehensive database, the government could eliminate duplication and streamline the process.

### Provision

- India has two types of electoral rolls, i.e. **General electoral rolls** (overseen by ECI) and **Separate electoral rolls** (prepared by SEC).
- **Election Commission of India (ECI):** Under **Article 324**, ECI administers **Union and State elections** like Lok Sabha,

- Rajya Sabha, State Legislative Assemblies, etc. in India.
- **State Election Commissions (SEC):** Under Article 243K (1), the SEC in each state has been constituted to conduct fair elections to local bodies (Panchayat and Municipality).

### Issues in the Preparation of CER

- **Absence of permanent electoral roll:** Before every election, a **fresh electoral roll for the local body is prepared**. Unlike the Assembly, Local bodies do not maintain a permanent electoral roll.
  - **This leads to duplication of efforts.**
- **Delimitation frequency:** For assembly and parliamentary constituencies, delimitation happens less frequently, usually every 15 to 20 years. On the other hand, Delimitation of local bodies is often done before elections.
- Periodic delimitation **ensures fair political representation** in the broader landscape.
- **Constitutional challenge:** Implementing a CER, as proposed by the central government and ECI, is **presently outside the scope of Article 325, which mandates the use of separate electoral rolls** for elections to Parliament and state legislatures.

### Recommendations

- ECI may **develop a comprehensive plan that considers all the factors** involved in implementing a Common Electoral Roll before making any changes to the current regulations.
- **ECI should consider the constitutional provisions** before preparing the CER and **adhere to the principles of federalism**.
- ECI and the Legislative Department should collaborate to **examine the effects of the delimitation process**, especially in challenging terrains.
- ECI and the Legislative Department **collaborate to encourage States to utilise the Election Commission's electoral roll** when creating their own until there is a change in constitutional and statutory provisions.
- ECI should **establish a legal provision or an alternative mechanism** to ensure that **non-citizens with Aadhaar are not included in CER**.

## 6.2. FALSE DECLARATIONS DURING FILING OF NOMINATION FOR ELECTIONS

To ensure the integrity of the democratic process, it is crucial for the government to take strict measures to deter the filing of false declarations/ affidavits.

### Provision

- **Candidates in elections must** submit an Affidavit (Form 26) per the Conduct of Elections Rules, 1961, **disclosing assets, liabilities, education, etc.**
- False information is a legal violation, **punishable under Section 125A of the RPA**.

### Issues

- False affidavits can be detrimental to the fairness of the election process as **they can mislead voters and affect their choices**.

**Recommendations**

- Government should **set up a verification process for affidavits and promptly inform the Election Commission** of any false data to ensure adherence to regulations.
- RPA, 1951 needs to have a **clear definition** of what constitutes a false declaration/affidavit.
- **Punishment under Section 125A of RPA, 1951 should be increased for filing a false affidavit** from six months **to up to two years** and a fine, depending on the severity of the offence.
- However, this penalty should **only be applied in exceptional cases** and not for minor errors.
- **Expediting resolution of disqualification cases**, as prolonged litigation undermines the intended purpose of legal provisions.

**6.3. ESTABLISHING PARITY BETWEEN MINIMUM AGE OF VOTING AND CONTESTING ELECTIONS**

Youthful representation in legislative bodies is crucial as they advocate for peers, address youth-centric concerns, and transform political discourse, influencing both internal and external government discussions.

**Provision**

- Presently, the **age** for contesting elections for
- **Lok Sabha (Article 84) and Legislative Assembly (Article 173) is 25 years.**
- **Rajya Sabha (Article 84) and Legislative Council (Article 173) is 30 years.**

**Issues**

- **Only 2.2% of Lok Sabha MPs are under the age of 30.**
- **Lack of parity between the minimum age of voting (18 years) and contesting elections (25 years)** has led to low participation by India's youth population in the political arena.
- **As per ECI, it is unrealistic to expect 18-year-olds** to possess the **necessary experience and maturity** for these responsibilities.

**Recommendations**

- **Suggests reducing** the minimum age requirement for candidacy **in Assembly Elections.**
- **Reducing the minimum age requirement for candidacy** in elections would **give young individuals equal opportunities to engage in democracy.**
- **Prioritise providing comprehensive civic education programs to equip young people** with the knowledge and skills necessary for political engagement.
- Governments, political parties, and youth organisations should **work together towards enabling greater youth participation in decision-making processes.**

**7. MEDIATION BILL, 2021****Context:**

- The **Rajya Sabha passed the Mediation Bill 2021**, which mandates individuals to attempt the **settlement of civil or commercial disputes through mediation before approaching any court or tribunal.**

- Parties can **withdraw from mediation after two sessions**, and the mediation process must **be completed within 180 days**, extendable by another 180 days by mutual consent.
- The Bill also establishes the **Mediation Council of India**, responsible for registering mediators and recognizing mediation service providers and institutes.

#### About Mediation:

- Mediation is **an alternative dispute resolution (ADR) method** in which a **neutral third party, known as a mediator**, helps parties in a **dispute reach a mutually agreeable resolution**.
- Mediation is considered a **more cost-effective, efficient, and less adversarial method compared to traditional court litigation**.

#### Significance:

- The bill aims to **reduce the backlog of cases in courts**, as there are currently five crore pending cases.
- The bill **provides a legal framework for mediation and reflects the government's whole-of-government approach to promoting alternative dispute resolution**.

#### Issues:

- **No provisions for enforcing certain internationally mediated settlements.**
- **Lack of clarity on the qualification of mediators.**

### 8. PARLIAMENTARY PANEL FINDINGS ON DRUG ABUSE IN INDIA

- Parliament Standing Committee on Social Justice and Empowerment in India has recommended conducting a survey to assess the **impact of drug abuse on society**.
- In 2018, the ministry commissioned a national survey conducted by the **National Drug Dependence Treatment Centre (NDDTC) AIIMS**, which formed the basis of the National Action Plan for Drug Demand Reduction (**NAPDDR**) to address drug abuse in the country.

#### What is Drug Abuse?

Drug abuse refers to the **excessive, inappropriate, or harmful use of legal or illegal substances**, leading to negative physical, mental, social, and behavioural consequences.

#### Findings of the Panel:

- **No comprehensive study or survey** has been conducted by the Ministry of Social Justice and Empowerment to assess the **impact of drug abuse on society**.
- **Around 37 crore people** in the age groups of **10-17 years (children) and 18-75 years (adults)** are using drugs and alcohol in states like Punjab, Haryana, Delhi, Uttar Pradesh, Odisha, and Maharashtra.
- **Penetration of District De-Addiction Centers (DDAC)** is inadequate.
- **Decrease in financial allocations** for preventive education and awareness programs.
- **Delay in providing training to Master Trainers** under the Navchetna Programme, which focuses on life skills and drug education for school children.

### Recommendations

1. Regular meetings and reviews of the **Apex Committee of Narcotics Coordination Centre** (set up by the Ministry of Home Affairs in 2016).
2. Establish an impact assessment mechanism for National Action Plan for Drug Demand Reduction (NAPDDR).
3. Incorporate **awareness chapters on drug addiction**, consequences, and de-addiction measures in the education curriculum.
4. Foster **inter-ministerial coordination** to address both supply and demand side issues.
5. Conduct **periodic surveys by National Drug Dependence Treatment Centres (NDDTC)** to stay updated on drug abuse situations.
6. **National Institute of Social Defence** should undertake the **survey to provide a clearer understanding of the issue** and aid in better intervention strategies

### India's vulnerability:

India is geographically situated between major drug-producing regions, including the **Golden Crescent** (Pakistan, Afghanistan, Iran) and Golden Triangle (Thailand, Myanmar, Vietnam, Laos).

### Negative impacts of drug addiction on individuals, families, and society:

| Aspect             | Negative Impacts                      | Examples                                  |
|--------------------|---------------------------------------|-------------------------------------------|
| <b>Individuals</b> | Physical health deterioration         | Lung damage due to smoking                |
|                    | Mental health disorders               | Anxiety, depression, psychosis            |
|                    | Impaired cognitive function           | Memory loss, decreased concentration      |
|                    | Reduced productivity and job loss     | Frequent absenteeism from work            |
|                    | Financial strain and poverty          | Spending money on drugs, neglecting bills |
|                    | Criminal involvement and legal issues | Arrests for drug possession               |

|                 |                                                      |                                          |
|-----------------|------------------------------------------------------|------------------------------------------|
| <b>Families</b> | Breakdown of family relationships                    | Strained communication, conflicts        |
|                 | Emotional distress and trauma                        | Children witnessing parent's addiction   |
|                 | Financial instability due to addiction-related costs | Draining savings to support addiction    |
|                 | Neglect of responsibilities towards family           | Parents failing to provide for children  |
|                 | Increased domestic violence                          | Arguments and fights fueled by addiction |
| <b>Society</b>  | Increased crime rates and public safety concerns     | Drug-related thefts, violence            |
|                 | The burden on healthcare systems                     | Increased hospital admissions            |
|                 | Reduced workforce productivity                       | Absenteeism and decreased output         |

|  |                                          |                                            |
|--|------------------------------------------|--------------------------------------------|
|  | The strain on social services            | Overburdened rehabilitation centres        |
|  | Impact on education and future prospects | Dropouts due to addiction- related issues  |
|  | Disruption of community well-being       | Communities plagued by drug-related issues |

#### Government measures to address drug abuse:

- ‘Nasha Mukta Bharat Abhiyaan’ (**Drugs-Free India Campaign**) was launched in August 2020 in 272 vulnerable districts.
- The **Ministry of Social Justice & Empowerment** is implementing the **National Action Plan for Drug Demand Reduction (NAPDDR)** for 2018-2025.
- **The Narco-Coordination Centre (NCORD)** was established in November 2016.
- The “National Fund for Control of Drug Abuse” was created to support efforts against illicit drug traffic, addiction rehabilitation, and public education.
- National Drugs & Psychotropic Substance (NDPS) Act, 1985 (Narcotics Control Bureau has been set up under it)
- **National Policy on Narcotic Drugs and Psychotropic Substances 2012**

### 9. MEDICAL TERMINATION OF PREGNANCY (MTP) ACT

- Supreme Court (SC) allows **rape survivor to terminate pregnancy beyond 24 weeks**.
- **Medical Termination of Pregnancy (MTP) (Amendment Act), 2021**, allows **rape survivors** to terminate their pregnancies **upto 24 weeks** (refer table).
  - Any abortion which is in contravention to MTP Act is a punishable offense under **Section 312 and 313 of Indian Penal Code (IPC)**.
- However, taking note that **such a pregnancy is not voluntary**, SC allowed the survivor to **terminate 27-Week Pregnancy**.
- **Key highlights of MTP Act, 2021**

| Duration of Pregnancy | Process of termination                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Up to 20 weeks        | <ul style="list-style-type: none"> <li>• Available to <b>all women on the advice of one doctor</b></li> </ul>                                                                                                                                                                                                                                                                                                                  |
| 20-24 Weeks           | <ul style="list-style-type: none"> <li>• Available <b>only in two conditions</b> (serious ailment to the child or risk of life or mental health to the women) <b>on the advice of two doctors</b>.</li> <li>• Available to <b>rape survivors, victims of incest and other vulnerable women</b> like differently abled, minors, among others</li> <li>• All women <b>irrespective of marital status</b> are covered.</li> </ul> |
| Beyond 24 weeks       | <ul style="list-style-type: none"> <li>• Available <b>only on the grounds of fetal</b></li> </ul>                                                                                                                                                                                                                                                                                                                              |

|  |                                                                                                                                                                                                                                                        |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>abnormalities</b> based on the <b>advice of a medical board</b>.</p> <ul style="list-style-type: none"> <li>• <b>All state/ UTs</b> are mandated to <b>constitute a Medical Board</b> consisting of gynecologists, pediatrician, etc.</li> </ul> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. THE PHARMACY (AMENDMENT) BILL, 2023

### Context:

The Pharmacy (Amendment) Bill, 2023 has been introduced in Lok Sabha to insert **a new section 32 C into the Jammu and Kashmir Pharmacy Act, 2011**, which pertains to persons registered or qualified under this Act.

- The bill will extend the **Pharmacy Act, 1948 to the UT of J&K**.

### About Pharmacy Act 1948

- The Pharmacy Act of 1948 outlines **regulations for the pharmacy profession**.
- It requires the formation of the **Pharmacy Council of India and State Pharmacy Councils**. Practising pharmacy in India necessitates **registration under this act**
- **Drugs and Cosmetics Act, 1940**, also demand the presence of a **registered pharmacist with a license** for overseeing drug dispensing.
- Breaching these regulations leads to **penalties and imprisonment**

However, the recent Jan Vishwas Bill 2023 **proposes the decriminalization** of sections related to penalties and imprisonment of the Pharmacy Act, 1948, and Drugs & Cosmetics Act, 1940.

## 11. VIVAD SE VISHWAS 2.0

### Context:

- The “Vivad se Vishwas 2.0” scheme has been launched by the **Department of Expenditure, Ministry of Finance**, with the aim of resolving contractual disputes involving the **government and government undertakings**.

### What are contractual disputes?

- Contractual disputes are **disagreements or conflicts** that arise between parties involved in a contractual agreement. These disputes occur when one or more parties believe that the terms, conditions, or obligations outlined in the contract have been **violated, misunderstood, or not properly fulfilled**.

### How will the scheme help resolve disputes?

The scheme offers a **standardized voluntary (one-time settlement) approach** with **graded terms** based on the **level of dispute pendency**.

### Applicability:

- **For all those disputes in which the Court award (passed up to 30th April 2023)**, contractors will be offered settlement amounts up to **85% of the net amount awarded** or upheld by the court.

- For arbitral orders (passed up to 31st Jan 2023), the settlement amount offered will be up to **65% of the net amount awarded**.

#### Implementation:

By utilizing the government e-marketplace (GeM) **platform** for processing claims.

#### Significance:

- The scheme streamlines the **resolution process and aims to expedite** the settlement of contractual disputes.
- **Previously, the Vivad se Vishwas** scheme was announced in **Union Budget 2020-21** for reducing litigations in the **direct taxes payments**. **Vivad se Vishwas I** was launched to provide **relief to MSMEs during the COVID-19 period**

## 12. REGISTRATION OF BIRTH AND DEATH (AMENDMENT) ACT, 2023

#### Context:

Recently, the Act to amend **the Registration of Birth and Death Act 1969** was passed.

#### Background

- **Key features of the Registration of Births and Deaths Act of 1969**
  - Provides for the **regulation and registration of births and deaths** in India. Provides for the appointment of a **Registrar General of India** by the Central Government for the implementation of this Act.
  - **Chief Registrar, District Registrar & Registrar to be appointed** in every State by the state government for the implementation of the Act in the state, district & local area, respectively.
  - **Certain persons to report** births and deaths to the Registrar, like a medical officer in charge.
  - Provides to obtain an **extract from the register related to any birth or death**.
  - In respect of birth or death occurring in a house, it is the duty of **the Head of the house, and in a hospital, the medical officer** in charge is responsible for reporting.
  - A birth certificate can be obtained **without the name of the child**.
- The registration of births and deaths **falls under the Concurrent List**.
- As of 2019, **the national level of registration of births was 93%, and death registration was at 92%**.
- This Act **had not been amended since its inception**, therefore new amendment is brought to:
  - To keep pace with societal change and technological advancements and to make act more citizen-friendly.
  - For efficient and transparent delivery of public services and social benefits.

#### Key features of the Birth and Death (Amendment) Act, 2023

- **Database of births and deaths:** It adds that the Registrar General of India will maintain a national database of registered births and deaths.
  - **Chief Registrars and Registrars** will be obligated to share data of registered births and deaths to the national database.
  - The Chief Registrar shall maintain a **similar database at the state level**.
- **Electronic certificates:** Provide digital registration and electronic delivery of certificates of births and deaths.

- **Linking with Aadhaar:** To collect Aadhaar numbers of parents and informants in case of birth registration.
- **Connecting database:** It states that the national database may be made available to other authorities preparing or maintaining other databases like **population registers, electoral rolls, ration cards, etc.**
- **Use of birth certificate:** The information will be used for purposes including admission to an educational institution, preparation of voter lists, appointment to a government post, etc.
- **Appeal process:** Any person aggrieved by any action or order of the Registrar or District Registrar may appeal to the District Registrar or Chief Registrar, respectively, within 30 days.

### Issues with the Act

- **Against Fundamental right**
  - **Denying admission to school without a birth certificate** may violate the fundamental right to education under **Article 21A**.
  - Linkage across databases does not require consent from the person whose data is being linked, which is **against the right to privacy**.
- **Sole conclusive proof of age:** The Act does not provide alternative proof if a person does not have a birth certificate.
- **Surveillance state:** Centralizing the database may lead to mass surveillance.

### Conclusion

- The Act, in its implementation, will help with e-governance. Although the act defined a database (organised collection of data, generally stored and accessed in electronic form from a computer network), the government could bring robust privacy and surveillance laws.

## 13. SUSPENSIONS OF MEMBERS OF PARLIAMENT(MPS)

### Context:

Recent suspensions of Members of Parliament (MPs) have raised concerns about the legality, rationale, and constitutionality of such actions (as per the author).

**Example:** Adhir Ranjan Chowdhury's recent suspension in LS; Sanjay Singh and Raghav Chadha (in Rajya Sabha)

**Method of Suspending Members in India's Parliament:**

### General Principle of Presiding Officers

- The fundamental principle is that the **Presiding Officer, i.e., the Speaker of Lok Sabha and Chairman of Rajya Sabha**, is responsible for maintaining order to ensure the smooth functioning of the House. To uphold proper proceedings, the Speaker/Chairman can compel a member to leave the House if necessary.

| Method    | Process and Rule Used                                                                                                                                                                                                                   |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lok Sabha | <b>Under</b> Lok Sabha Rule 373, the Speaker has the authority to instruct a member to <b>leave the House immediately</b> . On the Non-compliance of the instruction, the chair names members causing disruptions under <b>Rule 374</b> |
|           | Government introduces <b>suspension motion</b>                                                                                                                                                                                          |

|                            |                                                                                                                                                                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            | The motion seeks <b>approval of the House</b> . If passed, the member is suspended.                                                                            |
| <b>Rajya Sabha</b>         | Chair identifies disruptive members under <b>Rule 256</b>                                                                                                      |
|                            | <b>A suspension motion was presented</b> to the House.                                                                                                         |
|                            | The motion requires House approval. On approval, the member is <b>suspended</b> . The House may, however, by another motion, <b>terminate the suspension</b> . |
| <b>Rule for Suspending</b> | Rules framed under <b>Article 118 of the Constitution</b> . Suspension is based on either <b>Rule 374</b> (Lok Sabha) or <b>Rule 256</b> (Rajya Sabha).        |
|                            | The suspension follows the <b>established procedure</b> . It usually <b>lasts until the end of the ongoing session</b> .                                       |

#### Differences in powers of Speaker and Chairman of Rajya Sabha:

- **Like the Speaker in Lok Sabha**, the Chairman of Rajya Sabha is empowered under **Rule Number 255 of its Rule Book** to “direct any Member whose conduct is in his opinion grossly disorderly to withdraw immediately” from the House.
- Unlike the Speaker, however, the **Rajya Sabha Chairman does not have the power to suspend a Member**.

#### Implications of Suspending Members from India’s Parliament

- **Disruption to Proceedings:** Suspended members can’t participate, potentially hampering legislative activities.
- **Legal Implications:** The Supreme Court’s 2022 **Ashish Shelar vs Maharashtra Legislative Assembly ruling** declared suspensions beyond rule-prescribed periods unconstitutional.
- **Deviation from Rules:** Recent cases (e.g., Sanjay Singh, Raghav Chadha, Adhir Ranjan Chowdhury) show **suspensions exceeding typical limits** or pending investigations, departing from traditional norms.
- **Challenge to Democracy:** Excessive reliance on suspensions might silence opposition voices, impacting democratic debates.
- **Conflict Resolution Need:** Such suspensions underscore the necessity for improved methods to handle disagreements within Parliament.

#### Actions for Addressing Parliamentary Suspensions:

| Actions                            | Description                                                                                                            |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Adhere to Established Rules</b> | Follow Rules 374 (Lok Sabha) and 256 (Rajya Sabha) meticulously when suspending members.                               |
| <b>Avoid Extended Suspensions</b>  | Ensure suspensions don’t exceed the duration of the ongoing session; prolonged suspensions undermine democratic norms. |

|                               |                                                                                                                                 |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Review Recent Changes</b>  | Reevaluate recent indefinite suspensions, like Adhir Ranjan Chowdhury's, to ensure they align with constitutional norms.        |
| <b>Seek Judicial Guidance</b> | Refer to the Ashish Shelar vs Maharashtra Legislative Assembly (2022) decision to clarify the legality of suspension durations. |
| <b>Promote Dialogue</b>       | Prioritize dialogue and negotiation among political leaders to address disagreements, reducing the need for suspensions.        |

#### Conclusion:

There is a need to **strike a balance between deliberate disruption** and raising the important issue.

### 14. INDIA SMART CITIES AWARD CONTEST, 2022

#### Context:

**Indore** has been named the best Smart City and **Madhya Pradesh** as the top State for their outstanding performance in the Smart Cities Mission.

- The second and third positions among cities were secured by **Surat and Agra**, while **Tamil Nadu, Rajasthan, and Uttar Pradesh** were ranked second, third, and fourth respectively in the State category of the India Smart Cities Award Contest (ISAC) 2022.
- **Chandigarh** won the award for the best Union Territory. The awards, are organized by the Ministry of Housing and Urban Affairs under the Smart Cities Mission.
- The awards celebrate cities, projects, and ideas that promote sustainable development in the 100 smart cities, aiming to create inclusive, safe, healthy, and collaborative urban spaces.
- The selection process involved two stages: a qualifying assessment and a proposal submission, with a total of 845 nominations from 80 smart cities leading to 66 winners in various categories.

The Smart Cities Mission, initiated in 2015, seeks to enhance citizens' quality of life by implementing smart solutions across sectors like infrastructure, environment, and governance

### 15. LILY THOMAS CASE AND SECTION 8(4) OF RPA

#### Context:

The article discusses the implications of the Lily Thomas case's judgment that invalidated Section 8(4) of the Representation of People Act.

#### What is Lily Thomas case's about and its judgement?

The Lily Thomas case pertains to the Supreme Court of India's judgment that invalidated Section 8(4) of the Representation of People Act. This provision allowed a three-month period for convicted legislators to appeal before disqualification.

- The court's ruling led to instant disqualification upon conviction, impacting the careers of sitting legislators.

- The judgment was based on the premise that **Article 102(1) doesn't distinguish between sitting members and candidates** for disqualification.

#### Disqualification of MPs and MLAs under RPA, 1951:

- **Section 8(3) disqualifies MPs and MLAs** convicted and **jailed for 2+ years**, leading to **6-year disqualification** after release.
  - Convicted individuals on bail with pending appeals are **ineligible for contesting elections**.
- **Section 8(4)** previously allowed convicted legislators to continue if they appealed **within 3 months**.
  - In Lily Thomas's case, Supreme Court, July 2013, declared 8(4) unconstitutional, disqualifying on the date of conviction.

#### Issues with the Judgment in Lily Thomas Case:

| Issues                                                   | Description                                                                                                   |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>1. Instant Disqualification</b>                       | E.g., Recently <b>Rahul Gandhi</b> was disqualified immediately after his conviction in a defamation case.    |
| <b>2. Adverse impact on Legislators</b>                  | Legislators lose their seats due to quick disqualification without proper recourse.                           |
| <b>3. Insufficient time for the appeal process</b>       | Limited time for legislators to appeal and present their case for reversal.                                   |
| <b>4. Slow court procedures</b>                          | Courts take extended periods for handling appeals, creating undue delays.                                     |
| <b>5. Differential Treatment</b>                         | <b>Article 103</b> allows differentiation between sitting members and candidates for disqualification.        |
| <b>6. Role of President</b>                              | The suggested authority for declaring disqualification lies with the President under Article 103              |
| <b>7. Uncertainty about staying sentence/ conviction</b> | Whether staying only sentence or both sentence and conviction can lift disqualification.                      |
| <b>8. Limited impact on behaviour</b>                    | <b>No significant change was observed in politicians' criminal records and behaviour</b> due to the judgment. |

#### Measures needed to address the issues arising from the judgment in the Lily Thomas case:

- **Review and Amendment:** Consider amending section 8(4) of RPA, allowing a reasonable period for appeal before disqualification takes effect.
- **Clear Guidelines:** Establish clear guidelines for the application of disqualification, including the role of the President in declaring disqualification.
- **Timely Appeals:** Implement measures to expedite the appeals process to ensure that legislators have a fair and timely opportunity to present their cases.
- **Constitutional Safeguards:** Consider introducing a constitutional amendment in Article 102 that provides **protection against abrupt disqualifications**.

## 16. PROJECT ‘AMBER’

### Context:

The Ministry of Skill Development and Entrepreneurship (MSDE), in partnership with **Generation India Foundation** (India), is implementing **project AMBER** to provide cloud skills training to 1,500 learners.

### About Project Amber:

- PROJECT AMBER (**Accelerated Mission for Better Employment and Retention**) is a joint initiative of the **National Skill Development Corporation (NSDC)** and **Generation India Foundation (GIF)** under the aegis of the Ministry of Skill Development and Entrepreneurship (MSDE).
- This project is co-funded by **MSDE (under the SANKALP programme)** and private philanthropy and aims to train 30,000 youth, 50% of whom will be women trainees.
- The training will be conducted in post-COVID resilient job roles, over a period of two years. Generation's holistic **7-step skilling methodology** will be utilised to drive **higher quality skilling, improved employment, and retention outcomes**.

## 17. SVAMITVA SCHEME

### Context:

- The SVAMITVA Scheme, initiated by the **Ministry of Panchayati Raj**, has been awarded the **prestigious National Award for e-Governance 2023 (Gold)** for its innovative use of emerging technologies to **provide citizen-centric services**.
- The award was presented at the **26th National Conference on e-Governance (NCeG)**. The scheme employs **advanced technologies such as drones and GIS (Geographic Information System)** to conduct **surveys and mapping of inhabited areas in villages**.
- This allows property owners in rural regions to **receive official ownership documents, known as Property Cards**.

### Benefits:

- These cards have multiple benefits, **including enabling property owners to access bank loans and other financial opportunities using their rural residential assets as collateral**.
- The technology aids in **resolving land-related disputes through the creation of highly accurate maps with 5cm precision**.
- The collaborative effort involves the **Ministry of Panchayati Raj, Survey of India, State Revenue and Panchayati Raj Departments, and NIC-GIS**.

## 18. 5 YEARS OF AYUSHMAN BHARAT PRADHAN MANTRI JAN AROGYA YOJANA (AB-PMJAY)

### Context:

- The “Ayushman Bharat Pradhan Mantri Jan Arogya Yojana” (AB-PMJAY) has marked **five years of success in providing accessible healthcare** to economically vulnerable populations

## Features:

### About ABPM-Jay

- It is the world's largest health assurance scheme (launched in 2018 by MoH&FW). It provides medical insurance of Rs.5Lakh to over 10 crore marginalized families (Identified through SECC 2011 data) for secondary and tertiary care hospitalization
- Centrally sponsored scheme
- Funding 60:40 (NE states and three Himalayan states-J&K, Himachal and Uttarakhand)
- No limit on family size covered or age or members.
- It covers pre-existing diseases
- Implementation by National Health Authority

### Ayushman Bharat Digital Mission (ABDM)

- It aims to develop the digital backbone for integrated digital health infrastructure.
- Launched in 2021, it is central sector scheme. It contains: ABHA health account numbers: ABHA App: Health Facility Registry and Unified Health interface (for patients and health provider interactions)
- Implementation: National Health Authority under MoH&FW.

### Impact of the Scheme:

- **Out of Pocket Expenditure:** It provides support to more than **12 crore families**, aiming to encompass **50% of India's population**.
  - By doing so, it **reduces out-of-pocket healthcare expenses** and has saved over Rs 1 lakh crore in treatment costs.
- **Gender Equality:** The scheme promotes gender equality, with **48% of treatments benefiting women**, ensuring equitable healthcare access.
- **Universal Health Coverage:** AB-PMJAY aligns with Sustainable Development Goal 3.8 by moving India closer to **universal health coverage**, guaranteeing quality healthcare regardless of economic status.
- **Easy Access:** With over **27,000 hospitals accepting the Ayushman Card** for free treatment, patients can access care in any state with AB-PMJAY, particularly benefiting migrants.
- **Fraud Prevention:** The scheme employs the **National Anti-Fraud Unit (NAFU)** and state-level units, along with Aadhaar-based authentication, AI, and ML technologies to detect and prevent fraud.
  - It has de-empaneled **over 210 hospitals for violations**.
- **Feedback System:** Patients receive **post-treatment calls** to assess the quality of services, enhancing accountability and service improvement.

### Challenges in implementing the scheme:

| Challenges            | Details                                                                                                                                                 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cooperation of States | States' cooperation is required for harmonizing state health insurance schemes with PMJAY; Some states like West Bengal and Odisha have not implemented |

|                                     |                                                                                                                                                                                                                           |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | PMJAY                                                                                                                                                                                                                     |
| <b>Burden of Costs</b>              | Costs disputed between care providers and the Centre; For-profit hospitals find government proposals financially unviable                                                                                                 |
| <b>Inadequate Health Capacities</b> | Public sector health facilities lack equipment and capacity; Need partnerships with the private sector; Accountability of service providers is crucial                                                                    |
| <b>Unnecessary Treatment</b>        | National Health Policy 2017 suggested “strategic purchasing” from secondary and tertiary hospitals; Contracts with providers must ensure adherence to guidelines and treatment protocols to prevent unnecessary treatment |

#### Issues identified as per the latest CAG Report:

| Audit Findings                              | Details                                                                                                                            |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Beneficiary Irregularities</b>           | <b>Over 7 lakh beneficiaries</b> are linked to a single mobile number in the Beneficiary Identification System (BIS) of the scheme |
| <b>House hold Size Inconsistencies</b>      | Unrealistic family sizes in <b>43,197 households (11 to 201 members)</b> indicate validation control issues                        |
| <b>Pensioner Inclusion</b>                  | Pensioners in states like <b>Chandigarh, Haryana, etc.</b> availing PMJAY benefits led to excess payments to insurers              |
| <b>Ineligible Beneficiaries</b>             | Delayed removal of <b>ineligible beneficiaries</b> caused improper benefits and extra premium payments                             |
| <b>Errors in Beneficiary Identification</b> | Nearly about <b>73% of targeted households</b> are actual beneficiaries                                                            |
| <b>Claims management issues</b>             | <b>Overlap of beneficiaries with state-sponsored schemes</b> , excess payments, inadequate validation checks, etc.,                |
| <b>Grievance redressal issues</b>           | <b>Only about 10% of the complaints</b> were redressed within the timeframe                                                        |

#### Improvements:

- **Communication and Verification:** The National Health Authority (NHA) aims to rectify inconsistencies through **BIS 2.0**, disallowing the use of the same mobile number for multiple families.
- The NHA is also developing a policy to **disable the Add Member’ functionality** in case of any beneficiary family with **more than 15 members**

#### Recommendations:

- **Implement robust validation checks** to enhance the accuracy and reliability of the provided data
- **Promote the participation of additional private hospitals** in the scheme
- Establish effective **oversight of claim processing and payment**

- **Establish District Implementing Units** for efficient scheme implementation at the local level.

#### Conclusion:

Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (PMJAY) has made **significant strides in expanding healthcare accessibility** and **reducing out-of-pocket expenditure**. Addressing these challenges will be crucial to ensuring the continued success and effectiveness of PMJAY in providing quality healthcare to millions of beneficiaries across India.

### 19. WHO REPORT ON THE GLOBAL TOBACCO EPIDEMIC, 2023

#### Context:

The new WHO report on tobacco control highlights global progress, including the implementation of MPOWER measures.

#### What is the MPOWER measure?

MPOWER measures are tobacco control strategies developed by the World Health Organization (WHO) in 2008.

They include:

- M=Monitor tobacco use
- P=Protect people from tobacco smoke
- O=Offer help to quit tobacco
- W=Warn about tobacco dangers
- E=Enforce bans on tobacco advertising
- R=Raise taxes on tobacco products

#### Key highlights of the Report:

| Highlights                           | Description                                                                                                                                                                                                          |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Global Smoking Decline</b>        | Worldwide, with <b>300 million fewer smokers today</b> , the prevalence of smoking declined from <b>22.8%</b> (2007) to 17% (2021)                                                                                   |
| <b>Implementation Progress</b>       | <b>Over 5 billion people</b> (71% of the global population) are protected by at least one MPOWER measure                                                                                                             |
| <b>Countries Implementing MPOWER</b> | The number of countries implementing at least one MPOWER measure increased from <b>44 (2008) to 151 (2022)</b> . Only <b>4 countries</b> (Brazil, Turkey, Netherlands, and Mauritius) have implemented all measures. |
| <b>e – Cigarettes Warning</b>        | WHO warns <b>against the aggressive promotion of e-cigarettes</b> as a safer alternative, especially for youth                                                                                                       |
| <b>Second - hand Smoke Impact</b>    | <b>Second-hand smoke exposure</b> is linked to <b>over 1 million non-smoker</b> deaths annually, various health issues                                                                                               |
| <b>India's Achievements</b>          | India excels in <b>health warning labels and tobacco dependence treatment</b> ; bans sale of e-cigarettes                                                                                                            |

|                        |                                                                                                                                                                                       |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <b>27% reduction in smoking in public places</b> in Bengaluru due to enforcement and communication efforts                                                                            |
| <b>Recommendations</b> | <b>Need for warnings on OTT platforms</b> , stronger enforcement, bans on loose cigarette sales, and increased fines; <b>Bans on tobacco advertising</b> can minimize its consumption |
|                        | Efforts to reduce <b>second-hand smoking through smoke-free public areas</b> and awareness campaigns                                                                                  |

### Impact of tobacco smoking:

| Health Issues Due to Tobacco Smoking |                                                                 |
|--------------------------------------|-----------------------------------------------------------------|
| <b>General Population</b>            | Cardiovascular diseases, respiratory issues, cancer             |
| <b>Children and Adolescents</b>      | Respiratory infections, sudden infant death syndrome (SIDS)     |
| <b>Pregnant Women</b>                | Pregnancy complications, low birth weight, developmental issues |
| <b>Smokers</b>                       | Lung cancer, COPD, decreased lung function                      |
| <b>Second – hand Smokers</b>         | Respiratory infections, asthma, heart diseases                  |
| <b>Workforce and Productivity</b>    | Increased sick leave, decreased productivity                    |
| <b>Low-Income Individuals</b>        | The financial burden of tobacco-related health issues           |
| <b>Elderly Population</b>            | Aggravation of age-related health problems                      |
| <b>People with Pre-existing</b>      | Aggravation of existing conditions like asthma and diabetes     |



### Key initiatives taken by India

| Initiatives                                                                                                                                  | Description                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prohibition of Electronic Cigarettes Act, 2019                                                                                               | Enacted to combat the use of e-cigarettes, aiming to address their health risks.                                                                                                                                                                                                |
| National Health Policy 2017                                                                                                                  | Aims to reduce tobacco use by 30% by 2025 through awareness and preventive measures.                                                                                                                                                                                            |
| <b>Warnings covering 85% area on tobacco product packs</b>                                                                                   | Mandates large health warnings on tobacco product packs to increase awareness.                                                                                                                                                                                                  |
| <b>WHO Framework Convention on Tobacco Control</b>                                                                                           | India is a party to this international treaty, committed to tobacco control measures.                                                                                                                                                                                           |
| <b>Cigarettes and Other Tobacco Products Act 2003 (COTPA 2003)</b>                                                                           | prohibition of <ul style="list-style-type: none"> <li>• smoking in public places</li> <li>• advertisement of cigarettes</li> <li>• sale of tobacco products to anyone below the age of 18 years</li> <li>• prohibition of selling areas like schools, colleges, etc.</li> </ul> |
| <b>National Tobacco Control Programme and Nasha Mukta Bharat Abhiyaan.</b>                                                                   |                                                                                                                                                                                                                                                                                 |
| <b>31st May</b> is observed as ‘World No Tobacco Day’ <b>every year</b> to spread awareness about the deadly effects of tobacco consumption. |                                                                                                                                                                                                                                                                                 |

**Tobacco cultivation in India:** It is one of the important cash crops. Today, India is the **second-largest crop producer in the world after China.**

## INTERNATIONAL RELATIONS

### 1. BRICS

#### Context:

The 15th BRICS summit, the first in-person meeting since 2019 was held in Johannesburg, South Africa.

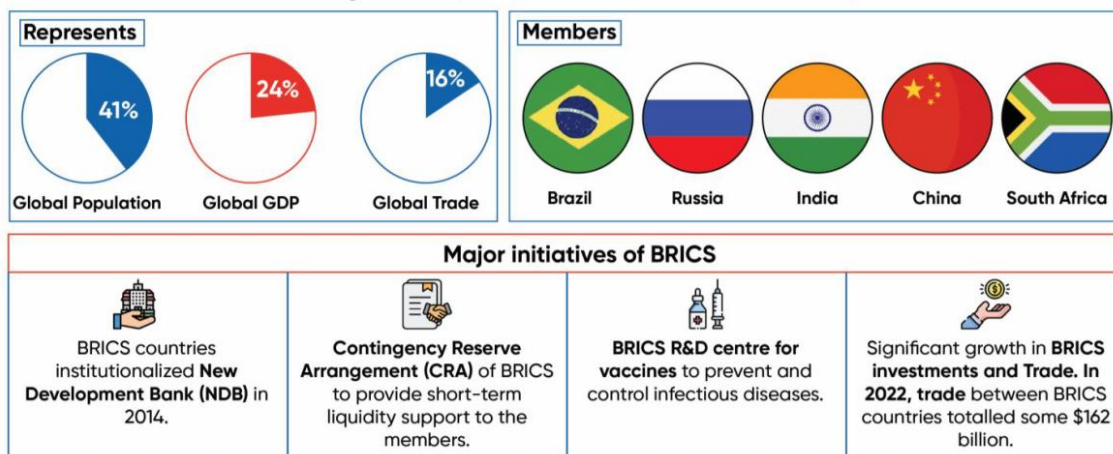
#### More on News

- South Africa has chosen the theme **“BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development, and Inclusive Multilateralism”** for the summit.
- Apart from BRICS leaders, South Africa had invited **all 55 members of the African Union (AU)** to the event and about **20 other leaders from Asia, South America and Small Island States** who represent the **Global South** for sessions on the sidelines of the summit

## BRICS

### Conception

- Conceived of in the early 2000s in a Goldman Sachs paper as a **grouping of the fastest growing developing economies not in the G-7.**
- BRIC countries started their dialogue in 2006, with the induction of South Africa in 2010, BRICS came into existence.



### Outcome of BRICS Summit

- **Expansion of BRICS:** BRICS members agreed to induct six new member countries with their membership coming into effect from January 2024. These countries include **Argentina, Egypt, Ethiopia, Iran, Saudi Arabia and the UAE.**
- **Johannesburg II Declaration:** It encapsulate significant BRICS viewpoints on global economic, financial and political matters.
- **Three pillars:** BRICS members committed themselves to strengthening the framework of mutually beneficial BRICS cooperation under the three pillars of
  - **Political and security,**
  - **Economic and financial, and**
  - **Cultural and people-to-people cooperation.**
- **Enhancing Strategic Partnership:** With a focus on areas like the promotion of **peace**, a more **representative, fairer international order**, a reinvigorated and **reformed multilateral system**, sustainable development and inclusive growth.
- **Trading in local Currencies:** The BRICS summit tasked BRICS finance ministers and/or central bank governors to consider the **issue of local currencies, payment instruments and platforms.**
- **Push for UN reforms:** The statement for the first time in the recent past said that BRICS countries support a **comprehensive reform of the UN**, including its Security Council.

### India's Proposals

- **Space cooperation:** India's Prime Minister called for establishing a **BRICS space exploration consortium** that could focus on space research and weather monitoring for global good.
  - BRICS is already working on the **BRICS satellite constellation.**
- **Inclusion in G20:** India proposed that all the **BRICS nations and the African Union** be permanent members of the G20.
- **Future ready BRICS:** India called for cooperation in the areas of **education, skills development and**

**technology** to make BRICS a future-ready organisation.

- India also proposed a **skills mapping exercise** to complement each other in their development journey.

- **Other proposals advocated by India**

- **Big Cat Protection** between the five countries.
- **Building resilient supply chains** advocated during BRICS Business Forum.
- Building a **repository for traditional medicine**.

### Significance of BRICS Expansion

- **Geopolitical and geoeconomic expansion:** The expansion signifies a growing alignment of geopolitical and economic agendas within the BRICS.
  - It incorporates **major global oil producers** near crucial trade chokepoints, such as the Suez Canal and the Strait of Hormuz and Bab-al Mandab Strait.
- **Infrastructure linkages:** Expanding BRICS opens up new horizons of economic and people-to-people connect.
  - India, Iran, and Russia are already developing the **International North-South Transport Corridor**.
- **Africa's growth:** Inclusion of two African countries strengthens the ongoing efforts to promote **integration, development, and growth** through the African Continental Free Trade Area.
- **Global Peace:** The induction of 4 major Middle East Players- Egypt, Iran, UAE and Saudi gives BRICS a major boost – as these countries have been at odds with each other.
- **Reform of the multilateral system:** BRICS will greatly push forward the agenda for reform in the present system of multilateralism, where Western powers play a dominant role.

### Emerging challenges to BRICS with expansion and other reforms

- **Dilution of original purpose:** The rapid expansion of members could dilute the original purpose of the BRICS grouping, especially if China is seen as taking a dominant position in the grouping.
  - **China factor:** It is believed by many that the expansion of BRICS is a political manoeuvre to advance China's vision of international order.
- **India's balancing interests:** As the BRICS, an economic grouping, becomes more strategic and political, India may find its balancing act with the Quad, Shanghai Cooperation Organization and Indo-Pacific Economic Framework more difficult.
- **Geopolitical dimensions:** Tensions between different countries may now make BRICS more unwieldy to run, akin to SAARC, due to tensions between India and Pakistan.
  - Egypt and Ethiopia continue to dispute the management of the Nile River.
  - Although a Chinese-brokered deal has eased tensions, Saudi Arabia and Iran remain historical rivals for regional dominance in the Middle East.
- **No clear membership criteria:** A clearly defined membership criteria has not been put in the public domain.
- **Difficulties in Intra-BRICS trade:** The sanctions Iran faces might make intra-BRICS trade more difficult to grow- both Russia and Iran are now off the SWIFT system.

- **Push to minilateralism:** With expanded BRICS, we are seeing a new wave of “minilateralism” — a style of diplomatic engagement that gives prominence to small- and medium-sized coalitions of like-minded states.
  - One problem with minilateralism is that it threatens to further erode our **means of global collective action** needed to tackle the massive threats posed to humanity today.

#### How should India respond to these developments?

- **Do the Balancing Act:** India needs to strategically balance its ties with the Western powers, especially the US, since the expanded BRICS will also include Iran (sanctioned by the US).
  - However, the expansion could **advance Indian interests**, giving India more clout with a set of nations with which it is keen to expand relations.
- **Checking Chinese influence:** India needs to balance the strategic influence that China exerts in the BRICS grouping with its economic diplomacy and its relations with Russia and Iran.
- **Engaging with Global South via BRICS:** BRICS expansion means India’s increased influence and added opportunity to collaborate on the problems of the Global South.
- **Indian Payment Systems:** India should push for institutionalising intra-BRICS trade in the national currencies of members via the Indian payment mechanisms and systems.
- This will also indirectly encourage the idea of the Internationalization of the Rupee.
- **Energy Security:** The inclusion of major oil-producing Middle Eastern powers such as Saudi Arabia and UAE in BRICS increases the opportunity for energy diversification and better energy pricing for India.
- **Defining membership criteria:** Advocating a clear membership criterion for BRICS will help ease India’s concerns about who could be future members of the BRICS.

#### Conclusion

BRICS stands for a multipolar world order that is equitable and builds on international law and the principles of the United Nations Charter.

## 2. MALABAR: NOT JUST AN EXERCISE

#### Context:

India, Japan, the United States and Australia held the Malabar naval exercise off the coast of Sydney (Pacific Ocean) for the first time. Previously, it was held in the Indian Ocean.

#### Background of the exercise in conjunction with QUAD

- **1992:** Malabar naval exercise commenced in 1992 as a **bilateral exercise between India and USA**.
- **2007:** For the first time, the exercise also included Australia, Japan and Singapore.
  - In the same year, the **US, Japan, Australia and India converged** in the **Quad 1.0 (Quadrilateral Security Dialogue)**.
- **2008:** Due to **China’s protest** to the accord, **Australia and, subsequently, Japan dropped out** of the exercise and Quad.
- **2015:** Japan became a permanent participant in the Malabar exercise
- **2020:** Australia rejoined it after the revival of Quad (Quad 2.0).

- The ‘**China factor**’—which was key to the failure of Quad 1.0 to take off—just a decade later appears to be serving as the **pivot around which Quad 2.0 rejuvenated**.

In the decade since 2007, rising **Chinese domination via its land and maritime disputes**, the increasingly **questionable intent of its One Belt, One Road (OBOR) programme**, and its related **debt trap diplomacy** have encouraged the idea of Quad’ further.

### Geopolitical importance of Malabar exercise and connected events

- **Strategic Convergence:** Shifting exercise from the Malabar Coast to the Bay of Bengal and alternating between the latter and the Western Pacific region suggests a strategic convergence between the participants in the ‘Indo-Pacific’.
- **Balance of Power:** China’s assertiveness in the Indo-Pacific region through OBOR, logistics bases, debt traps, etc., disturbs the balance of power in the region.
  - The exercise tilts the balance of power towards the larger Pacific region and, in some ways, acts as a **reinforcement exercise in the context of the rising power of China**.
- **General Indo-Pacific Stability:** The QUAD and the Malabar Exercise should be viewed as a major step towards building a **sustainable Indo-Pacific coalition**.
- **Protecting global commons:** The growing instability in the international order, including the weakening of US influence in the Indo-Pacific, makes a stronger case for the protection of the global commons. Quad and Malabar help in this regard.
- **Rules-based international order:** Quad countries have affirmed their commitment to uphold the rule of law and freedom of navigation in the international seas and upholding the territorial integrity and sovereignty of all states as essential.
- **Establishing trust and military cooperation:** The naval cooperation among major powers in the Indian Ocean region has had limited success, and the strategic distrust levels still remain quite high due to their competing interests.
  - Malabar exercise is one of such other initiatives like the Indian Ocean Rim Association (IORA) and the Indian Ocean Naval Symposium (IONS) to address this issue.

### Significance of these developments for India

- **Development of strong maritime order:** A conducive maritime order requires to be underpinned by naval power projection capabilities. This includes sea-control (aircraft carriers/surface ships) and sea-denial (submarines, underwater drones, et cetera) capabilities.
  - Malabar exercise helps further enhance such capabilities along with the protection of navigation routes for seaborne commercial traffic and control over navigational chokepoints.
- **National Military Capabilities:** Although the Quad’s present objectives, its members also actively cooperate to build each other’s economic, technological and military capabilities, specifically in the context of rising China.
- **Strengthening India’s SAGAR policy:** ‘SAGAR’ (‘Security and Growth for All in the Region’) vision posits the requirement to safeguard the region alongside protecting our national interests.

- These exercises can help enable this policy. For example, information sharing during natural disasters and enhanced capacity in case of search and rescue.
- **Economic Significance:** As India's economy grew, so did its larger maritime interests. Thus, encouraging to look beyond the proximate oceanic space.
  - Japan and the USA bring to the table considerable capital and economic support.

### Conclusion

'Malabar Exercise', on the surface of it, seems to address only India's maritime security concerns. However, the evolution of the Malabar exercise series could be seen as representing a barometer of the shifting geopolitics in the Indo-Pacific region.

### 3. ERRATA

- Due to a typographical error in **Article 2.1 "India-US relations" of June 2023 Current Affairs Magazine**, it was incorrectly mentioned that "State visit to the US was in 1969".
  - Correct information is " Earlier, only 2 Indian leaders have been hosted by the US as an **official state guest: President S Radhakrishnan in 1963, and PM Manmohan Singh in 2009.** India's first PM, Jawaharlal Nehru made a US visit for the first time in 1949 ".

### 4. PANAMA CANAL

- **Shipping disruptions** occurred in a drought hit Panama Canal.
- Panama Canal is a **constructed waterway** that connects the **Atlantic and the Pacific Oceans**.
- It enables ships to **avoid the lengthy and hazardous voyage around Cape Horn** at the southern tip of South America.
- Panama Canal **connects nearly 2,000 ports in 170 countries**.
- Panama is an **isthmus** connecting North and South America.



- **Isthmus** is narrow strip of land connecting **two larger landmasses**. For example, Suez Canal is constructed on the isthmus of Suez.
  - However, they are different from Straits which are narrow waterways connecting two larger bodies of water
    - ✓ For example, Strait of Gibraltar connecting the Mediterranean Sea and the Atlantic Ocean.
- **Role of Straits and Isthmus in Global Trade:**
  - **Important trade link:** Approximately 12% of global trade passes through the Suez canal.
  - **Time and Cost Savings**
  - **Global Supply Chain:** Supporting the movement of various commodities, including Dry Bulk, Container, etc.
  - **Strategic significance:** Panama Canal's significance goes beyond economic benefits and encompasses national security, defense capabilities, and logistical resilience for the region, especially for USA.

## 5. SULINA CHANNEL

- Sulina Channel – a distributary of Danube river, connects major Ukrainian ports on the river to Black Sea.
  - Chilia, Sulina and St George are major channels in Danube delta.
  - Of these three, Sulina Channel is the only one deep and wide enough for freight transport.
  - It lies completely within Romania, a NATO member.
- Danube Delta has provided Ukraine with an alternative passage after Russia withdrew from Black Sea grain deal.

## 6. INDIA-GREECE BILATERAL RELATIONSHIP

### Context:

During Indian Prime Minister Narendra Modi's visit to Greece, the two nations elevated their bilateral relationship to a "strategic partnership," focusing on enhancing political, defence, and security cooperation.

### What is a Strategic Partnership?

A strategic partnership is a long-term interaction between two countries based on political, economic, social and historical factors. E.g., India has strategic partnerships with the

**United States, Russia, China, Japan, UK, France and others**

### Key points of the visit:

- This visit marked the first by an Indian Prime Minister in 40 years.
- Greece conferred the Grand Cross of the Order of Honour (Greece's 2nd highest civilian honour) on Modi, making him the first foreign head of government to receive this honour.
- The two countries also aimed to double bilateral trade by 2030
- Early finalization of the Mobility and Migration Partnership Agreement (MMPA) to facilitate skilled migration between the two countries.
- They reaffirmed their commitment to a free and rules-based Indo-Pacific region and the Mediterranean Sea, advocating for international peace, stability, and security.

**Various aspects of India-Greece Relations:**

| Aspect                           | India-Greece Relations                                                                                                                                                                                                                                                                                                                   |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ancient Interactions</b>      | <ul style="list-style-type: none"> <li>Interaction initiated by <b>Alexander's campaign in the 4th century BCE</b></li> <li><b>Diplomatic, trade, and cultural relations</b> mentioned in Ashoka's edicts</li> <li><b>The</b> indo-Greek period was marked by cultural exchange under Greek rulers Demetrius I and Menander I</li> </ul> |
| <b>Political Relations</b>       | <ul style="list-style-type: none"> <li>Diplomatic relations established in 1950</li> <li>Diplomatic ties, high-level visits, and cooperation between leaders</li> <li>Support for India's inclusion in NSG and other groups</li> </ul>                                                                                                   |
| <b>Commercial Relations</b>      | <ul style="list-style-type: none"> <li>Trade at <b>1.32 billion euros</b></li> <li><b>Main exports:</b> cotton, scrap, marble, etc.</li> <li>Indian participation in <b>Thessaloniki International Fair</b></li> <li><b>India-Greece Framework Agreement</b> on International Solar Alliance</li> </ul>                                  |
| <b>Defence</b>                   | Bilateral cooperation, MoU on defence, joint exercises                                                                                                                                                                                                                                                                                   |
| <b>Geostrategic Significance</b> | <ul style="list-style-type: none"> <li><b>Greece's potential as India's gateway to Europe</b></li> <li><b>India's ties with Greece unsettle Turkey, Azerbaijan, and Pakistan</b></li> <li><b>Countermeasure against China's influence</b> in the Mediterranean region</li> </ul>                                                         |
| <b>Geopolitical Significance</b> | <ul style="list-style-type: none"> <li>Support from Greece on issues like <b>Kashmir and terrorism</b></li> <li>Shared approach on initiatives like <b>UN reforms and the Cyprus issue</b></li> <li><b>Greece's NATO membership and Armenia's alliance with Russia</b></li> </ul>                                                        |

**Conclusion:**

Enhancing **India-Greece relations is crucial for India to become a pivotal player** in the evolving global order, **uniting key seas and continents**. Strengthening economic ties can **establish new financial networks** across Eurasia. **Advancing military cooperation** through comprehensive agreements will enable joint exercises, technology sharing, and intelligence collaboration.

## 7. KAMPALA DECLARATION

### Context:

A total of **48 African countries** have agreed to adopt the **Kampala Ministerial Declaration on Migration, Environment, and Climate Change (KDMECC)** in order to tackle the connection between **human movement and climate change on the continent**.

- This initiative aims to **provide African states with a unified position** for the upcoming **Africa Climate Summit and the Conference of Parties (COP 28)**.
- Originally signed by **15 African nations in July 2022**, the **KDMECC has evolved into KDMECC-AFRICA** and is anticipated to be formally adopted during the **Africa Climate Summit**.
- Africa is **highly vulnerable to climate change impacts**, which directly influence migration due to more frequent and severe extreme weather events.
- According to the **Internal Displacement Monitoring Centre**, over **7.5 million people** faced **internal displacement due to disasters in the past year alone**.

## ECONOMY

### 1. INCREMENTAL CASH RESERVE RATIO (ICRR)

#### Context:

The Reserve Bank of India (RBI) recently asked banks to maintain an Incremental Cash Reserve Ratio (ICRR) of 10%.

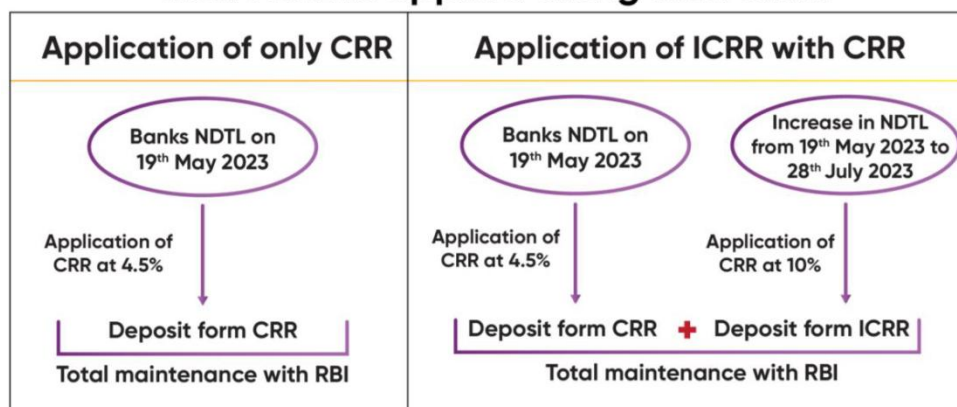
#### CRR and ICRR

- **Cash Reserve Ratio (CRR):** It is the **share of a bank's Net Demand and Time Liabilities (NDTL)** that is mandated by the Reserve Bank of India (RBI) to be maintained with the latter as reserves in the form of liquid cash.
- As per the **RBI Act 1934**, **all Scheduled Commercial Banks** (that includes public and private sector banks, foreign banks, regional rural banks, and cooperative banks) are **required to maintain the CRR**.
- **Incremental Cash Reserve Ratio (ICRR):** I-CRR is similar to the CRR, wherein banks need to set aside a certain portion of their money with the RBI. They do not earn any interest on this. RBI has the option to impose ICRR in addition to the CRR.
- For instance, the Reserve Bank of India (RBI) asked banks to maintain an ICRR of 10% on the increase in their deposits between May 19 and July 28, 2023 due to discontinuation of 2000 notes. This implies that Banks must maintain both **CRR and ICRR**.

#### Know the term

Net Demand and Time Liabilities (NDTL) Shows the difference between the sum of demand and time liabilities (deposits) of a bank (with the public or the other bank) and the deposits in the form of assets held by the other bank.

## How ICRR is applied along with CRR?



### Need of ICRR

- **Manage Liquidity:** There was a **recent increase in liquidity** in the economy due to a pickup in **government spending, sustained foreign inflows, and withdrawal of Rs. 2000 notes**, among others.
  - Estimates suggest that ICRR will pull out somewhere **between ₹20,000 crore and ₹40,000 crore** from the system.
- **Inflation Control:** India's **retail inflation** (measured by the Consumer Price Index (CPI)) rose to 7.5% in July compared with 4.9% in June. Hence requiring a **tighter monetary policy**.
- **Banking Resilience:** Increased CRR protects banks in uncertain times by creating cash buffers, which can be used in case of external or internal economic shocks.
  - For instance, the incremental CRR increases protection against the potential threat of Bank Run.
- **Decreased Lending:** Decreased liquidity implies a decrease in the lending capacity of the Banks.
  - Lower lending will, in turn, **bring down demand for goods and services**, reducing the **Aggregate Demand of the Economy**.

#### Know the term

Bank Run is when the customers of a bank or other Financial institution withdraw their deposits at the same time over fears about the bank's solvency

### Conclusion

As stated by RBI, ICRR is only a temporary measure that is **aimed to be a non-disruptive way of dealing with the issue of excess liquidity** in the system. In the long term, a combination of other liquidity control measures can also be applied.

### Other Liquidity Management Tools

- **Standing Deposit Facility (SDF):** SDF allows the RBI to absorb liquidity (deposit) from banks without giving government securities in return to the banks.
- **Altering Repo and Reverse repo rates:** Altering these rates directly affects the deposit rate in banks as well as their lending rates.
- **Open Market Operation (OMO):** OMO refers to **sale or purchase of government securities (bonds)** by the RBI.

- **Ways and Means Advances (WMA):** It is a **temporary loan facility** to the central and state governments.

## 2. BHARATNET

### Context

The Government recently approved Rs 1.39 lakh crore for modernising the BharatNet project.

### More about News

- It involves changing its execution strategy and **providing fibre connections to the last mile through Village Level Entrepreneurs (VLEs)**.
  - VLEs, known as Udyamis, will take the fibre connections to **households on a 50:50 revenue-sharing basis**.
- With this upgrade, the **government is looking to speed up its process of connecting all 640,000 villages over the next two years**.
- The cost of taking the infrastructure **to the home will be borne by the government**.
  - Rural entrepreneur will **only need to be involved in the maintenance and operations of home connections**, including addressing consumer complaints related to fiber cuts, etc.
- For BharatNet, **this is the third such package approved by the Centre**.
  - In 2017, the Cabinet approved financial assistance for the first two phases.
  - In 2021, the Cabinet allocated more funds to implement the last-mile connectivity **under a PPP model, which failed to attract much interest**.

### BharatNet: Quick Facts

|  Type |  Purpose |  Implementing Agency |  Funding |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Central Sector Scheme (under Ministry of Communications)                                 | To provide <b>broadband connectivity to Gram Panchayats</b>                                 | Bharat Broadband Network (Merged into BSNL in 2022)                                                     | Universal Service Obligation Fund (USOF)                                                      |

*For more details of the scheme, refer Appendix at the end of the document.*

### Significance of Bharat Net

- **Village Modernization:** By digitalising the basic infrastructures such as banking, post office, etc.
- **Agriculture sector:** Help improve farmers' awareness, such as being tutored online on how to apply pesticides.
- **Better Medical Facilities:** Broadband connectivity helps medical service delivery at the door.
- **Improving Quality of Education:** Students get quality education online, and it also helps in government schemes penetration, such as DIKSHA, etc., in rural areas.



### Data Bank

- **58%** Rural tele-density (October 2022).
- **816 million** Broadband connections (September 2022).
- **61<sup>st</sup>** rank of India in 2022 in Network Readiness Index.

- **E-Commerce penetration:** **Village-level** broadband connectivity will help in the penetration of ecommerce, such as government initiatives of Open Networks for Digital Commerce.
- **Employment:** As extension program will provide nearly 2.50 lakh jobs.

#### Universal Service Obligation Fund (USOF)

Under **Indian Telegraph (Amendment) Act, 2003**.

It is the **pool of funds generated by a 5% Universal Service Levy** that is charged upon all the telecom fund operators on their Adjusted Gross Revenue (AGR).

Aims to provide for **quality and affordable** mobile and digital services across the rural and remote areas of the country

#### Challenges in implementing BharatNet

- **Delay in project completion:** The earlier project deadline was 2019; however, work is ongoing.
- **Lack of Basic supporting infrastructure:** Infrastructure support at Gram panchayat in the form of protected space and power supply are the major issues.
- **High project costs:** Project costs have skyrocketed because of delays in project completion.
  - For instance, the cost of laying one kilometre of optic fibre cable (OFC) has doubled between 2020-21 and 2021- 22.
- **Low utilisation:** As of March 2022, only 27% of the expected villages had received network connectivity.
- **Quality of service (QoS):** Complaints by village officials about frequent line faults, connection outages, and the lack of response to requests for service and repairs have grown increasingly common
- **Poor administrative capacity of BSNL:** BSNL itself has incurred major losses over the past few years and has been criticised for **slow decision-making and red-tapism**.
- **Poor Private Participation:** In the 2022 bid, not a single bid was received, and the tender was eventually cancelled because of low incentives and more responsibility for operating and upgrading BharatNet for the private sector.

#### Way forward

- **Participation of Panchayat Raj institution** for enhancing the implementation and utility of the BharatNet project.
- **Improve the efficiency of project implementation:** Proper administrative framework and governance for the efficiency of the project is required.
- **More private sector involvement** is required in investment, infrastructure, and running the project.
- **Awareness Generation:** BharatNet is not so popular among the rural population and faces competition from privatesector broadband providers.

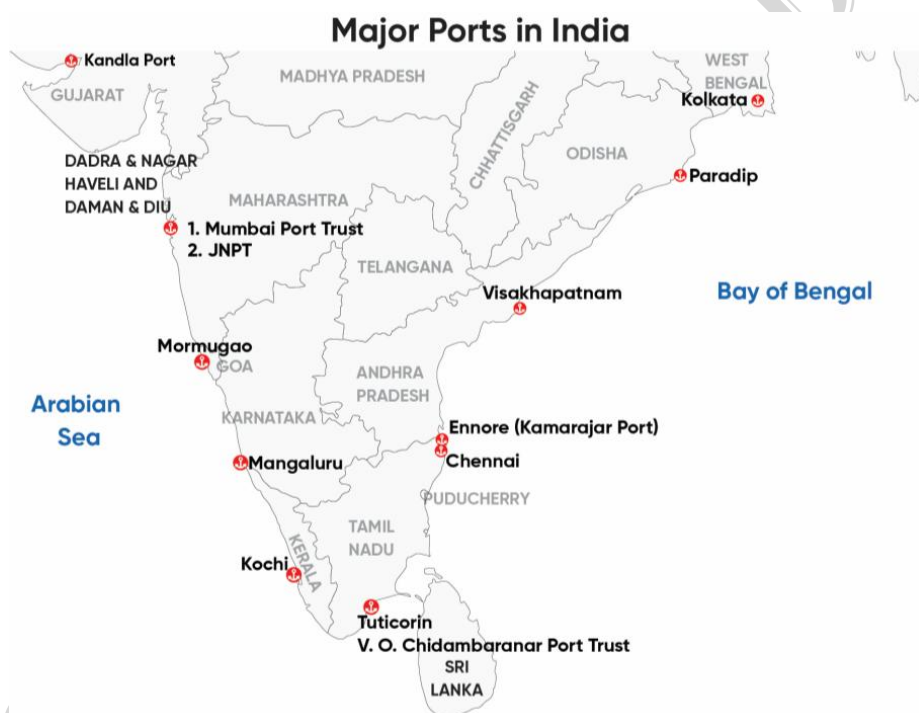
### 3. FUNCTIONING OF MAJOR PORTS IN INDIA

#### Context:

Recently, the **Department-related Parliamentary Standing Committee on Transport, Tourism and Culture** presented the 352nd Report on 'Functioning of Major Ports in the Country'.

#### Ports in India

- Ports in India are broadly categorized into two types based on **traffic they handle**.
- **Major Ports:** They are under the direct administrative control of the Central Government and fall in the **Union List** in the **7th Schedule** of the Constitution.
- **Minor Ports:** They fall under the jurisdiction of the respective **State Maritime Board** and fall in the **Concurrent List**.
- There are **12 major ports** and about **213 non-major ports**.
- The **Major Port Authorities Act, 2021** and the **Indian Ports Act** are the two principal statutes governing the functioning of Major Ports.



#### Performance of Ports in India

- **Turn Around Time (TRT):** The turnaround time (time spent by a vessel at the port from its arrival to its departure) across Indian ports has been **consistently declining from 94 hours (FY13-14) to 52 hours (FY23-24)**.
- **Traffic:** Indian ports have witnessed a consistent rise in container traffic from **555 million tonnes (FY13-14) to 796 million tonnes (FY23-24)**.
- **Cargo:** Cargo handling of the Major Ports has steadily increased over the years, with a **10% increase from last year**.
- **Operating Ratio:** The operating ratio, the rupee spent for every rupee earned, has come down to Rs. 48 from Rs. 53 in 2020-21 (i.e., Rs. 48 is spent for every Rs. 100 earned).

## Challenges in Functioning of Major Ports

- **Financial Constraints:** Major ports in India face financial constraints due to pensions and other liabilities. For example, Mumbai port has a pension fund liability of 13000 crore.
- **Non-Optimum Utilization:** The capacity utilisation of the major ports is only about 49 %, leading to the wastage of resources.
- **Lack of Transshipment Hubs:** Indian Ports handle **only 25% of Indian transshipment cargo**, leading to a loss of revenue opportunities for India.
- **Connectivity Challenges:** Rail congestion and lack of multimodal transport connectivity are concerns at certain ports, adversely affecting freight movement.
- **Infrastructural Bottlenecks:** Indian ports face the challenge of low capacity and non-optimum utilisation due to infrastructure bottlenecks.
  - **Evacuation Bottlenecks:** The low availability of railway rakes also adversely impacts the evacuation of cargo from/to ports.
  - **Lack of Mega Ports:** Only 5 Major Ports and 2 Non-Major Ports have over 100 MTPA capacity.
- **Inflexible Tariff Structure:** Major ports owned by the government are unable to attract more cargo due to a rigid tariff structure, unlike private ports.

### Do you know?

The Oldest Major port of India is the Kolkata Port, now called the Shyama Prasad Mookherjee Port (Only Major Riverine Port)

Mumbai port is India's largest Natural Port and harbour.

Kamarajar Port or the Ennore Port in Tamil Nadu is the only corporatized port registered as a company.

## Efforts that have been taken to improve the functioning of Ports

- **Overall Monitoring:** The **Sagarmanthan Dashboard** was developed for regular monitoring of projects and the financial and operational performance of the ports.
- **Real-Time Tracking:** The **Sagar Setu App** has been launched to give real-time information on vessels for better traffic management.
- **Trade Facilitation:** The **National Logistics Portal (NLP)** (Marine) is a national maritime single window platform facilitating trade between importers, exporters and service providers.
- **Monitoring of Port Performance Indicators:** **Sagar Unnati** has been implemented as a Dashboard for monitoring all Major Ports Key performance indicators like Turnaround Time.
- **Improving connectivity:** **101 road and 90 rail connectivity projects** have been taken up under the **Sagarmala Project** for better connectivity.
- **Cyber Security:** Establishment of Asset Management Systems, Multi-Factor authentication on all accounts, and implementation of IT security policy, etc. have been undertaken.
- **Digitisation of Ports:** Steps like **Vessel Traffic Management System, Enterprise Business System (Port Operation and allied system, and online (Radio Frequency Identification) RFID System** have been implemented.

### Recommendations to Improve Port Efficiency

- **Integrated Planning:** While planning port development, **integration of the local economy, development of industrial clusters and connectivity** should also be accounted for.
- **Port Modernization:** Major ports must **invest in replacing old, outdated equipment at the old berths with modern equipment** to enhance their productivity.
- **Port Mechanisation:** The Government should **prioritise the 31 mechanisation projects**.
- **Increase PPP Investments:** All major ports must take steps to achieve their PPP investment targets under the **Maritime India Vision (MIV)** to improve their productivity and competitiveness.
  - MIV **identifies initiatives** such as developing world-class Mega Ports, transshipment hubs and infrastructure modernisation of ports **to develop global standard ports in India**.
- **Port-Led Industrialization:** Leasing port land to private investors on a PPP basis for **setting up industries/facilities** would go a long way in promoting the coastal economy and port revenues.
- **Promote Connectivity:** **Connectivity by water/rail/road to the hinterland** needs to be established along with linkage through dedicated rail freight corridors.
- **Extensive implementation of Port Community System (PCS):** The PCS is a **centralised web application** introduced in the port sector and acts as a single window for port community members and stakeholders

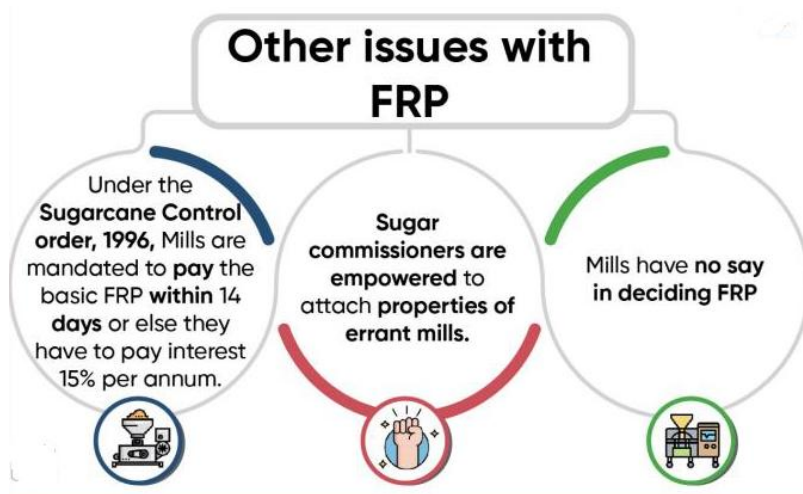
### 4. UDGM (UNCLAIMED DEPOSITS – GATEWAY TO ACCESS INFORMATION) PORTAL

- **RBI** has launched a centralized web portal – UDGM (Unclaimed Deposits – Gateway to Access Information).
- **Objective:** It will enable bank customers to find their **unclaimed deposits** across multiple banks in one place.
  - **Unclaimed deposits:** Balances in savings/current accounts that are not operated for 10 years, **or term deposits not claimed within 10 years** from the date of maturity.
- It will promote **financial inclusivity**, using digital advances to deliver banking services to its customers efficiently.

### 5. FAIR AND REMUNERATIVE PRICE (FRP)

- Finance Ministry Notified Rules **Enabling Cooperative Sugar Mills to Claim Past Cane Price Payments**.
- The notification allowed **payments** to farmers, in **excess of the Centre's Fair and Remunerative Price (FRP) before 2015-16** as **"business expenditure"**.
  - It was done by amending **Section 155 of the Income Tax Act** and expected to provide mills a **relief of almost Rs 10,000 crore**.
  - So far, cooperatives were allowed to claim such payment as **business expenditure for payment made from the 2016-17 assessment year**.
- **FRP is the minimum price** that mill owners are mandated to **pay to sugarcane farmers**.
  - It is governed by **the Sugarcane (Control) Order, 1966** issued under the Essential Commodities Act (ECA), 1955.
  - It is announced at the recommendations of the **Commission for Agricultural Costs and Prices based on the cost of production**.

- Cooperative factories usually pay farmers a **final cane price more than the Centre's FRP** due to **State Advised Prices** (usually higher than FRP) and the **demand of farmer unions**.



## 6. AMRIT BHARAT STATION SCHEME (ABSS)

- PM laid foundation stone for redevelopment of 508 railway stations under ABSS.
- ABSS was **launched to redevelop railway stations nationwide to provide state-of-the-art public transport and world-class amenities** at railway stations..
  - It is **based on Master Planning for long term and implementation** of Master Plan will be **as per station needs**.
  - Stations will be developed as **'City Centres'** in an integrated approach for **overall city development, centred around station**.
  - Design of station buildings** will be inspired by **local culture, heritage and architecture**.
- Initiatives taken by Indian railways for modernisation:**
  - Train Modernisation** by introducing indigenously developed Vande Bharat Trains, Vistadome coaches, SMART coaches with ultra-modern facilities, Increasing Speed of Freight Trains etc.
  - Signalling and Safety features** include Real Time Information System (RTIS) for tracking, Linke Hofmann Busch (LHB) coaches, KAVACH Indigenously developed Train Collision Avoidance System, Electronic Interlocking system etc.
  - Combating Climate Change** through initiatives such as setting up Dedicated Freight Corridors (DFCs), becoming a **Net Zero entity by 2030** by completing electrification of all railway tracks etc.
  - Others:** Elimination of all unmanned level crossings on broad gauge, Wi-Fi services at stations, One Station One Product scheme etc.

## 7. HIGH PRICE DAY AHEAD MARKET AND SURPLUS POWER PORTAL (PUSHP PORTAL)

- PUSHP portal was **launched by Ministry of Power to ensure greater availability of power during peak demand season**.
  - Power Distribution Companies (DISCOMS)** will be able to indicate their surplus power in block times/ days / months on portal.
  - Those DISCOMs who need power will be able to requisition the surplus power.

- This will **reduce the fixed cost burden on DISCOMs** and **enable the available generation capacity to be utilise..**

## 8. 'BHAGWA' POMEGRANATE

- APEDA facilitated the export of the first trial shipment of 'Bhagwa' pomegranate to the USA in collaboration
- with NPPO.
- **'Bhagwa' (Saffron-colored) Pomegranate**
  - **High antioxidant content** and **super fruit characteristics**
  - **Solapur (Maharashtra)** contributes almost 50% of pomegranate export from India.
- Agricultural and Processed Food Products Export Development Authority (**APEDA**) is a **statutory body under the APEDA Act, 1985.**
- It is an **apex-Export Trade Promotion authority.**
- **National plant protection organization (NPPO)**
  - **Directorate of Plant Protection, Quarantine and Storage** is the national NPPO of India.
  - It undertakes all **phytosanitary responsibilities** for the export of agro-commodities.

## 9. CAG REPORT ON RAILWAY FINANCE

### Context:

The Comptroller and Auditor General (CAG) reported that in the fiscal year 2021-22, the financial health of Indian Railways entered a **"concern zone."**

### Key findings of the CAG:

| Key Findings                                         | Details                                                                                                                                |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating Ratio (OR)</b>                          | The railway operator <b>spent ₹107 to earn ₹100</b> due to increased pension funding                                                   |
| <b>Net Surplus</b>                                   | Indian Railways couldn't generate a <b>net surplus in 2021-22</b>                                                                      |
| <b>Total Expenditure</b>                             | Ministry of Railways' total expenditure <b>increased over 35% more than the previous year.</b>                                         |
| <b>High revenue Expenses</b>                         | Over <b>75% of total working expenses</b> are spent on staff costs, pension payments, and rolling stock lease charges                  |
| <b>Dependence on Budgetary Support and Resources</b> | Inadequate internal resource generation led to greater dependence on Gross Budgetary Support (GBS) and Extra Budgetary Resources (EBR) |
| <b>Cross-Subsidization of Passenger Fares</b>        | Passenger fares subsidized by profits from freight operations                                                                          |

**Key recommendations from Vivek Debroy's committee for Indian Railways:**

| Recommendations                                 | Details                                                                                                                              |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restructuring and Unbundling</b>             | Separate Railways' functions into distinct verticals like operations, regulation, and infrastructure                                 |
|                                                 | Create an independent regulatory body                                                                                                |
|                                                 | Form Rail Development Authority (RDA)                                                                                                |
| <b>Commercial and Financial Autonomy</b>        | Enhance <b>commercial and financial autonomy</b> of Zonal Railways                                                                   |
| <b>Decentralization of Powers</b>               | Delegate more decision-making powers to lower levels of management                                                                   |
| <b>Resource Mobilization and PPP</b>            | Increase non-fare revenue through advertising, commercial use of stations, and land monetization.<br><b>Explore PPP for projects</b> |
| <b>Technology Integration and Modernization</b> | Integrate technology for better customer service, efficiency, and safety                                                             |
| <b>Governance and Performance Management</b>    | Implement an <b>outcome-oriented performance management system</b>                                                                   |

## 10. TIME-OF-DAY (TOD) TARIFF

### Context:

The article discusses India's new electricity pricing system, Time-of-Day (ToD) tariff, which adjusts prices based on demand, aiming to reduce consumption during peak hours

### What is Time-of-Day (ToD) tariff?

- Time-of-Day (ToD) tariff is an **electricity pricing system that adjusts prices based on demand**, with higher rates during peak hours and lower rates during off-peak hours. The goal is to encourage consumers to use electricity when demand is lower, helping to manage energy consumption and grid load.

**Status:** This system is being **introduced in India in 2024** for commercial and industrial users and in 2025 for other users. ToD tariffs are already used in many countries, including the US, UK, and Japan. For this system to work, **smart meters are needed to track electricity use every 15 minutes.**

### Limitations of the system:

- Increased Complexity:** Billing becomes more intricate as users must monitor usage across different times.
- Behavioural Changes Needed:** Consumers must adapt routines, like altering vehicle charging or appliance use.
- Higher Costs at Peaks:** Inflexible users face elevated costs during high-demand hours.
- Dependence on Smart Meters:** Success relies on ample smart meter deployment; India aims for 250M by 2026.
- Possible Resistance:** Some users might not adjust their consumption habits.

- **Storage Challenges:** Renewable energy's storage limitations can hinder constant supply, despite ToD incentives.

## 11. MAHARATNA AND NAVRATNA CATEGORY

### Context:

- The Government of India has **elevated Oil India Limited to the 'Maharatna' category**, granting the company **enhanced decision-making powers in financial matters**.
- Oil India has become the **13th Maharatna Central Public Sector Enterprise (CPSE) in India**. Having achieved **Navaratna status in 2010**, Oil India's recent acquisition of **Numaligarh Refinery Ltd.** further **solidified** its position as **an integrated energy company**.
- Also, the government elevated **ONGC Videsh Ltd (OVL) to Navratna CPSE**. OVL will be the **14th Navratna amongst the CPSEs**.

### Criteria for qualification:

| Criteria for Maharatna Status                                              | Criteria for Navratna Status                                                                                                                             | Criteria for Miniratna Status                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Shall have Navratna status                                              | 1. Miniratna Category - I or Schedule 'A' CPSEs                                                                                                          | Miniratna Category-I status: <ul style="list-style-type: none"> <li>• Made profit in the last 3 years continuously</li> <li>• Pre-tax profit is Rs.30 crores or more in at least 1 of the 3 years</li> <li>• Having Positive net worth status</li> </ul>                                                                                                        |
| 2. Listed on the Indian stock exchange with prescribed public shareholding | 2. 'Excellent' or 'Very Good' rating in 3 of last 5 years                                                                                                |                                                                                                                                                                                                                                                                                                                                                                 |
| 3. Average annual turnover Rs. 25,000 crore (last 3 years)                 | 3. Composite score of 60 or above in the following 6 performance indicators including Net Profit to Net Worth, Cost of Services, Earning per share, etc. | Miniratna Category-II status: <ul style="list-style-type: none"> <li>• Made profit for the last 3 years continuously</li> <li>• Having positive net worth status.</li> <li>• Not defaulted in the repayment of loans/ interest payment on any loans due to the Government.</li> <li>• Not dependent upon budgetary support or Government guarantees.</li> </ul> |
| 4. Average annual net worth Rs. 15,000 crores (last 3 years)               |                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                 |

## 12. MARKET COUPLING

### Context:

The Central Electricity Regulatory Commission (CERC) has released a staff paper on implementing market coupling in India's power sector.

### What is Market coupling?

- Market coupling is a **process in the energy sector** where bids from various power exchanges are matched to **determine a uniform market** clearing price for electricity trading.
  - It aims to **optimize transmission infrastructure** use, maximize economic surplus, and create simultaneous benefits for both buyers and sellers.
  - This process helps in **efficient price discovery and integration of different electricity markets** or geographies, promoting transparency and competition in the energy trading sector.

The CERC (Central Electricity Regulatory Commission) has introduced provisions for market coupling among power exchanges in the country under its **CERC Power Market Regulations (PRC) 2021**. However, these provisions are yet to be officially implemented.

### The benefits of market coupling include:

- Optimal utilization of transmission infrastructure.
- Maximization of economic surplus by considering all bid types leads to the creation of simultaneous benefits for both buyers and sellers.

### India has three power exchanges:

- Indian Energy Exchange (IEX): 90% market share
- Power Exchange of India (PXIL)
- Hindustan Power Exchange (HPX)

## 13. RAIL-SEA-RAIL (RSR) INITIATIVE

### Context:

- The **Ministry of Coal** is driving a transformative initiative known as **Rail-Sea-Rail (RSR)** to revolutionize coal transportation in India.
- This strategy **integrates rail and sea transportation** to create an **efficient movement of domestic coal**, connecting mining sites, ports, and end-users.
- The goal is to **enhance logistical efficiency, reduce transportation costs, and reshape the coal transportation landscape**.

### Stats regarding Coal:

- Major coal-producing states like **Odisha, Chhattisgarh, Jharkhand, and parts of Madhya Pradesh** contributed around **75% of domestic raw coal dispatch** in FY'23.
- The Ministry envisions **doubling India's coal production** by FY'30, with a projected **Compound Annual Growth Rate (CAGR)** of approximately 7.7%.
- Currently, **railways handle about 55% of coal evacuation**, with a **target of increasing it to 75% by FY'30**.

- The committee is promoting **RSR coal evacuation with the aim of reaching 112 million tons** by 2030, a **significant increase from the current 40 million tons**. This approach aims to **reduce congestion, explore export opportunities, and minimize the carbon footprint**.

#### Benefits of RSR Initiative:

- The **Rail-Sea-Rail initiative aims to transform logistics through an eco-friendly coastal shipping mode**.
- Opting for RSR **could result in substantial cost savings for end-users in Southern India, potentially cutting logistics costs**.
- Over the past four years, **Rail-Sea-Rail coal transportation has seen impressive growth of around 125%**.

The Ministry of Coal is committed to **refining its Rail-Sea- Rail Coal Evacuation strategy to meet the nation's growing energy needs and establish a robust energy supply system**.

### INTERNAL SECURITY

#### 1. ASTRA MISSILE

- Light Combat Aircraft Tejas, has successfully been test fired the ASTRA missile.
  - It is a **Beyond Visual Range Air - to - Air missile**, indigenously developed by DRDO.
- **Key Features:**
  - **Range:** 80-110 kms for version Mk1 and 160kms for version Mk2.
  - **Altitude:** up to 20 km.
  - **Max Speed:** Mach 4.5

#### 2. 3D-PRINTED BOMBS

- Ukraine has recently turned to **3D-printed bombs as a solution to combat ammunition shortages** and sustain their counteroffensive efforts.
- Ukraine's weapons makers are finding **various models of improvised ammunition that are 3D printed at home and abroad**.
  - These **3D-printed casings are produced and then filled with C4 explosives and shrapnel** before being deployed on the battlefield.
- They have been nicknamed "**candy bombs**".
  - Candy bombs are **cheap and effective**. Also, it can be readily **produced in different sizes** which helps drone operators make the best use of a given model's payload capacity.

#### 3. MILITARY EXERCISES

- **AUSINDEX-23** is a **biennial maritime exercise** between **Indian Navy and Royal Australian Navy**.
- **BRIGHT STAR-23** is a **biennial multilateral tri-service exercise** held in Egypt. For the first time, **Indian Air Force** is participating in it.

- Other participating countries include **US, Saudi Arabia, Greece, and Qatar.**

## ENVIRONMENT

### 1. UNREGULATED TOURISM IN THE INDIAN HIMALAYAN REGION (IHR)

#### Context:

Recently, a Parliamentary Standing Committee has recommended the government to prepare a **practical action plan** with clear timelines to put a check on destructive activities in IHR.

#### More on news

- The Parliamentary Standing Committee on Science and Technology, Environment, Forest and Climate Change highlighted the **tremendous increase of tourist activities** in IHR has led to **over-exploitation of natural resources** and **illegal construction**.
- This includes home stays, guest houses, resorts, hotels, restaurants and other encroachments.

#### Specific vulnerabilities of the IHR

- **Geo-physical:** Himalayas are **tectonically active** and are mostly made-up of **unconsolidated and semi-consolidated deposits**.
  - **Under-cutting by river currents** in valleys like Alaknanda, Bhagirathi, Mandakini, etc.
  - **Hill washing and percolation of waters** due to rain, cloud-bursts, and melting of snow resulting in **land subsidence** like the one witnessed in Joshimath, Uttarakhand earlier this year.
- **Socio-economic: Deforestation** for agriculture, grazing, construction, etc., on hill slopes giving rise to avalanches, landslides, etc.
  - **Obstruction of natural flow of water** due to construction various mega hydel Power Projects, like Tehri Dam Reservoir in Tehri Garhwal district.
- **Rising Tourism:** IHR records about **100 million tourists every year** and the number is **expected to increase to 240 million by 2025**, putting huge pressure on resources.
  - As per Niti Aayog, Tourism **contributes more than 10% of the Gross State Domestic Product (GSDP) in many states** such as Uttarakhand, West Bengal, Tripura, Assam, etc.

#### Why Shimla is crumbling? – A Case Study

- Lack of **climate-smart infrastructure development**.
- Like the Himachal Pradesh High Court Lawyers Chambers and the new Indira Gandhi Medical College has been **constructed over substantial water springs and channels**.
- Further, **planning for Shimla** is overseen by the Town and Country Planning Department (Public Works Department, Himachal Pradesh) which operates **without democratic oversight**.
- Also, **Shimla Development Plan (SDP)**, which also **lacks any climate action plan**, is currently **subjudice before the Supreme Court**.

### Initiatives undertaken to promote Sustainable Tourism

**National Strategy for Sustainable Tourism:** To mainstream sustainability in Indian tourism sector and ensure a more resilient, inclusive, carbon neutral and resource efficient tourism

**Swadesh Darshan 2.0:** Includes a vision of sustainable and responsible tourism under various projects.

**Swachh Paryatan Mobile Application:** To allow people to report any hygiene issues at tourist places.

### Challenges of unregulated tourism in the IHR

- **Waste generation:** According to Niti Aayog's report in 2018, tourism in IHR States generates about 8.395 million tonnes per year (MT/Y) of solid waste.
  - **Unorganized waste collection, segregation, disposal, and recycling** further aggravated the problem.
  - It also leads to **degradation of watersheds and water sources**.
- **Forests and biodiversity:** Loss of natural forest covers for building various tourism infrastructures such as accommodation, transport, etc.
  - Loss of natural resources impacting **biodiversity and ecosystem services**.
- **Landscape:** Replacement of **traditional eco-friendly and aesthetic infrastructure** with inappropriate, unsightly and dangerous constructions.
- **Seasonality of tourism:** High fluctuations in tourism activities in different seasons lead to various problems like overcrowding, lack of services, etc.
- **Socio-cultural:** Erosion of cultural fabric and social values of collectivism due to mass tourism

### Way Forward

- **Planning, implementation and monitoring:** A **multi-year strategy for sustainable tourism** should be formulated that covers environmental, economic, social, health, and safety issues.
  - It should be done in the spirit of **local community partnerships**.
- **Policy and regulations:** Promote zero waste destination by enforcing **Solid Waste Management Rules, 2016**, and **Plastic Waste Management Rules, 2016**.
  - **Environmental audit** of tourism service providers based on environment efficiency and carbon generation and certification.
  - **Common certification scheme and eco-labelling** for tourism ventures in line with environmental parameters can help to reduce pollution.
  - **Clear zoning of landscape** (Land Use Plan based on maps and stakeholder interests) will assist in monitoring and guide site specific interventions if and when required
- **Institutions and Processes:** Inter-departmental convergence to ensure integrated destination and infrastructure planning and implementation.
  - **Active monitoring and public reporting** of environmental, economic, social, and tourism strategies, milestones and issues in sync with SDG Targets and Indicators.
  - **Designing climate-smart infrastructure** to redirect investment away from high-risk areas, project and policy appraisal through **strategic Environmental Assessment, climate risk disclosure**, etc.

- **Finance and market:** Introducing ‘Green Cess’, Payment for Environmental Services based on eco certification, etc.
  - Explore **new tourism circuits and packages** to offer diversified destinations and for **de-congestion of mass tourism sites**.
  - On the pattern of smart cities, “**smart mountain tourism destination**” business plans could be prepared.
- **Technology:** Prepare tourism satellite accounts of IHR, multi-hazard zoning, geomorphological mapping along major river valleys, etc., for effective planning.
- **Capacity building:** Design and deliver an **IHR specific Awareness and sensitization package** through proactive media campaign and tourism information centres.

## 2. GREEN STEELS AND CARBON FOOTPRINT

- ‘Green steel’, or the **steel produced through processes that do not emit carbon dioxide**, essentially means using **hydrogen** as the ‘**reducing agent**’ (remover of oxygen) in **steel production**.
- In other words, **iron ore** is basically **iron oxide** and **hydrogen** is used to **pull oxygen away from iron oxide**, leaving **pure iron** behind—to which **a little carbon is added to make steel**. Right now, **carbon**, in the **form of coke**, has been used for pulling away oxygen; when carbon joins hands with oxygen it becomes **carbon dioxide**, which is a Greenhouse gas.
- **Hydrogen** can do the job of **coke** just as well.

### India iron ore is not suitable for making green steel:

- According to **Australia’s Commonwealth Industrial and Scientific Research Organization (CSIRO)**, which is the **country’s publicly funded research organisation** and an **expert in mines and minerals**, **66 per cent of India’s (and Australia’s) iron ore is not suitable for being made into green steel**.
- This is because **Indian iron ore is low-grade**. Low-grade iron ore can only be made into steel in **blast furnaces—huge cooking pots** in which iron ore is melted and made to combine with coke, before being poured into moulds for making steel slabs.
- For technical reasons, **green steel** making requires the ‘**electric arc furnace**’ route; **EAFs need high-grade ores**, in which **iron content is over 60 per cent**.

### Why can’t hydrogen be injected into a blast furnace to do the same job as coke?

- This is theoretically possible, but there are **two major problems**. ‘
  - **First**, blast furnaces need to operate at **high temperatures**, or the order of **1,000-1,200 degrees C**. Combustion of hydrogen releases a lot less heat compared with the combustion of coke.
    - ✓ **Hydrogen** must be **pre-heated to high temperatures** to provide sufficient heat for the blast furnaces.
    - ✓ **Pre-heating hydrogen** means **using more energy**, which must again come from renewable sources so that the steel qualifies for the ‘**green**’ label.

- **Second**, use of hydrogen results in ‘**embrittlement**’ of iron, leading to **cracks and fractures in the metal**.
- To avoid this, you again need special alloys to resist hydrogen embrittlement.
- Therefore, producing green steel in blast furnaces by injecting hydrogen as a replacement of coke is technically challenging and economically infeasible.
- **Blast furnaces** are big **emitters of carbon dioxide**. A blast furnace capable of producing **2 million tons of steel annually** will emit at least **2.5 million tons of CO<sub>2</sub> a year**.
- In **2022, India** produced **124.5 million tonnes** of steel.

#### Alternative technologies:

- It is possible to **reduce CO<sub>2</sub> in electric arc furnaces** to some extent by replacing a part of the coke with used **automotive tyres**.
- Apart from reducing dependence on coking coal, which India imports, these tyres contain about 7 per cent hydrogen, which helps.
- The **Indian Institute of Science, Bengaluru**, is toying with the idea of replacing some of the **coke** with **biochar**.

#### HIsarna: a new technology developed by Tata Steel:

- It is capable of slashing CO<sub>2</sub> emissions by 80 per cent compared with the blast furnace route.
- In a **conventional blast furnace**, a mixture of **iron ore, coke** and **limestone** – is put into the furnace and a blast of oxygen is sent in through a lance. The mixture melts and collects at the bottom. **In HIsarna**, the **ore** is **liquefied** in a **high-temperature cyclone** at the top and the molten ore drips to the bottom of the reactor, where powder coal is injected.
- The technology removes a number of pre-processing steps and requires less stringent conditions on the quality of the raw materials used.
- Since it is highly concentrated carbon dioxide that leaves the reactor, the system is “ideally suited for carbon capture and either storage (CCS) or use (CCU), without the need for a costly gas separation stage.”

#### India-Australia Green Steel Initiative:

- In **June 2021**, the **Indian** and **Australian** governments formed an **India-Australia Green Steel Partnership** to work on a range of research, technology and commercialisation projects over a **three-and-a-half year period** to accelerate the steel making value chain in both the countries.
- **CSIRO of Australia** is working with the **Institute of Minerals and Materials Technology (IMMT)**, **Bhubhaneshwar**, on a **plasma technology** for “very rapid melting of iron oxide using hydrogen”.

#### Promotion of Green Steel by Indian government:

- The **Ministry of Steel** is committed to the **Net-Zero target by 2070**.
  - Steps taken for promoting decarbonization in steel industry include:-
1. **Steel Scrap Recycling Policy, 2019** enhances the availability of domestically generated scrap to reduce the consumption of coal in steel making.

2. The **Ministry of New and Renewable Energy (MNRE)** has announced the **National Green Hydrogen Mission** for green hydrogen production and usage. The steel sector has also been made a stakeholder in the Mission.
3. **Motor Vehicles (Registration and Functions of Vehicles Scrapping Facility) Rules September 2021**, shall increase availability of scrap in the steel sector.
4. **National Solar Mission** launched by **MNRE** in **January 2010** promotes the use of solar energy and also helps reduce the emission of steel industry.
5. **Perform, Achieve and Trade (PAT) scheme**, under **National Mission for Enhanced Energy Efficiency**, incentivizes steel industry to reduce energy consumption.
6. The **steel sector** has adopted the **Best Available Technologies (BAT)** available globally, in the modernization & expansions projects.
7. **Japan's New Energy and Industrial Technology Development Organization (NEDO)** Model Projects for Energy Efficiency Improvement have been implemented in steel plants.

### 3. COASTAL AQUACULTURE AUTHORITY (AMENDMENT) ACT, 2023

#### Context:

Recently, this Coastal Aquaculture Authority (Amendment) Act, 2023, was adopted, which amends the earlier 2005 Act.

#### Background

- **Coastal Aquaculture Authority Act 2005** was enacted to **provide for the establishment of a Coastal Aquaculture**
- **Authority** for regulating the activities connected with **coastal aquaculture in the coastal areas**.
  - It aimed to **protect the coastal environment while promoting the orderly growth of coastal aquaculture farming in coastal areas**.
  - It **defines coastal aquaculture** as culturing, under controlled conditions in ponds, pens, enclosures or otherwise, in coastal areas of shrimp, prawns, fish or any other aquatic life in saline or brackish water **but does not include freshwater aquaculture**.
  - It also facilitates the **continued operation of coastal aquaculture within the Coastal Regulatory Zone area** and beyond.
  - It **penalised unregistered farms or farms in prohibited areas**.
- In 2005, **coastal aquaculture activity was essentially shrimp farming**.
  - **Now, newer forms of environment-friendly coastal aquaculture** have come up, which can be done in coastal areas and mostly within CRZ.
- However, there have been demands **to remove the ambiguities and amend some of the provisions of the 2005 Act** to make this legislation progressive and decrease the regulatory burden.



## Data Bank

- **3rd** largest fish producer in world.
- **2nd** largest aquaculture producing nation in the world.
- **Doubled** India's seafood exports from between 2013 to 2023.
- **Frozen shrimp** retains the top position as the major export seafood item.
- **USA** is the largest importer of Indian seafood followed by China and EU.

### About Coastal Regulation Zone Notification 2019

- As per this notification, **certain coastal areas were declared as coastal regulation zone**, wherein setting up of industries and expansion of industries are prohibited activities and other developmental activities/projects are regulated/ permitted as per provisions of the said notification.
- The notification also **provides for 'No Development Zones' (NDZ) along various categories of coastal areas** to protect India's coastline from encroachment, erosion and accretion.
- CRZ notification is issued by the central government under the **Environment Protection Act, 1986**.

### About Coastal Aquaculture Authority (Amendment) Act, 2023

- **Broaden the definition of "coastal aquaculture"**: Comprehensively covers all activities of coastal aquaculture, removing the ambiguity existing between the farm and other verticals of coastal aquaculture.
  - New coastal aquaculture, such as **cage culture, seaweed culture, bi-valve culture, marine ornamental fish culture and pearl oyster culture**, are promoted.
- **Registration granted under the Coastal Aquaculture Authority Act shall prevail and be treated as valid permission under CRZ Notification.**
- **Additional role of Coastal Aquaculture Authority:**
  - **fix standards for inputs and discharge of effluents** from aquaculture units,
  - **prohibit the use of certain inputs** to prevent harm to the environment,
  - **monitor and regulate units, inputs, and emissions.**
- **Decriminalises and fixed penalties** if coastal aquaculture is carried out illegally
- **Permitting certain aquaculture activities in CRZ areas:** The Act permits hatcheries, nucleus breeding centres, and broodstock multiplication centres to be established in no-development zones (NDZ) of seas and buffer zones of creeks/rivers/ backwaters.
- **Prevent the use of antibiotics and pharmacologically active substances** that harm human health in coastal Aquaculture
- **Promote biosecurity:** i.e. any measure adopted to analyse, manage and prevent the risk of introduction or spread of harmful organisms within the coastal aquaculture unit and to **minimise the risk of transmission of infectious diseases.**

### Significance of the CAA (Amendment) Act, 2023

- **Sustainable growth of Coastal areas:** Promote production, productivity and exports, traceability and increased competitiveness and entrepreneurship.
- **Empowering Authority:** with more power to regulate activities and enforce environmental compliance, including the Polluter Pays Principle.
- **Ease of doing business:** as it decriminalises the offences under the Act.
  - It also enables lakhs of small marginal aquaculture farmers to **avoid the possible need for obtaining CRZ clearances from multiple agencies.**
- **Promoting new Environment-friendly coastal aquaculture:** such as cage culture, seaweed culture, etc.
- **Employment Generation:** on a large scale for coastal fisher communities, especially fisherwomen;
- **Developing dedicated facilities:** in areas having direct access to seawater to produce genetically improved and disease-free broodstocks and seeds for use in coastal aquaculture.
- **Improve Export:** Prohibiting the use of antibiotics pharmacologically will help to reduce the impact of non-tariff barriers under WTO, hence improving exports.

### Initiatives of Government to promote Aquaculture

- **Marine Products Export Development Authority** is a statutory body established in 1972 under the Ministry of Commerce & Industry to promote marine product export.
- **Blue Revolution** in India demonstrated importance of Fisheries and Aquaculture sector.
- **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** steps to intensify and diversify inland fisheries and aquaculture with focus on diversification of species, introduction of new species.

### Issues with the Act

- **Infective work by Coastal Aquaculture Authority:** Due to a deficiency in skilled manpower and infrastructure facilities in the Authority (as noted by the CAG report).
- **Promoting intensive coastal aquaculture:** which may have adverse impacts on the environment, such as salinisation of land/wells and obstruction of natural flood water drainage.

### Conclusion

- The Coastal Aquaculture Authority (Amendment) Act of 2023 is the appropriate step toward reviving and modernizing coastal aquaculture in the nation and making it a major seafood exporter worldwide. However, there may also be a need to balance promoting aquaculture activities and minimising the environmental damage from such activities.

## 4. 5% OF BIRDS IN INDIA ARE ENDEMIC, REVEALS ZOOLOGICAL SURVEY OF INDIA PUBLICATION

### In the news:

- A recent publication by the **Zoological Survey of India (ZSI)** points out that **about 5% of birds found in the country are endemic** and are not reported in other parts of the world.

### Details of the report:

- The publication, titled **75 Endemic Birds of India**, was recently released on the **108th foundation day of the ZSI**.
- The **75 bird species** belong to **11 different orders, 31 families, and 55 genera**, and exhibit remarkable distribution patterns across various regions in India.
- The **highest number of endemic species** have been recorded in the **Western Ghats**, with **28 bird species**.
- **Some of the interesting species recorded in the country's bio-geographic hotspot are the:** Malabar Grey Hornbill (*Ocyeros griseus*); Malabar Parakeet (*Psittaculacolumboides*); Ashambu Laughing Thrush (*Montecinclameridionalis*); and White-bellied Sholakili (*Sholicolaalbiventris*).
- **25 bird species are endemic to the Andaman and Nicobar Islands:**
  - Endemism in the Andaman group of islands must have developed because of the geographical isolation of the region.
  - Some interesting bird species which are **only found in the Andaman and Nicobar Islands** are: Nicobar Megapode (*Megapodius nicobariensis*); Nicobar Serpent Eagle (*Spilornisklossi*); Andaman Crake (*Rallinacanningi*); and Andaman Barn Owl (*Tyto deroepstorffi*).
- **Four species of birds are endemic to the Eastern Himalayas**, and **one** each to the **Southern Deccan plateau and central Indian forest**.

### Bird diversity in India:

- **India** is home to **1,353 bird species**. Of these **78 (5%) are endemic** to the country. Of the **78 species**, **three species** have not been recorded in the last few decades.
- They are the:
  - **Manipur Bush Quail** (*Perdiculamanipurensis*), listed as '**Endangered**' by the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species with its last recorded sighting in 1907;
  - **Himalayan Quail** (*Ophrysiasuperciliosa*), listed as '**Critically Endangered**' with its last recorded sighting in 1876; and
  - **Jerdon's Courser** (*Rhinoptilusbitorquatus*), listed as '**Critically Endangered**' with its last confirmed sighting in 2009.

### Zoological Survey of India (ZSI):

- The Zoological Survey of India (ZSI), a subordinate organization of the Ministry of Environment and Forests was **established in 1916**.
- It is a **national centre for faunistic survey** and exploration of the resources leading to the advancement of knowledge on the exceptionally rich faunal diversity of the country.
- It has its headquarters at Kolkata and 16 regional stations located in different geographic locations of the country

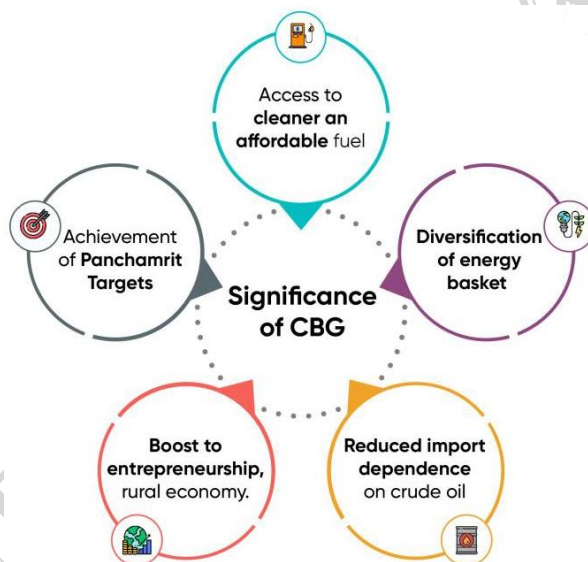
## 5. COMPRESSED BIO-GAS (CBG)

### Context:

Parliamentary Standing Committee on Petroleum and Natural Gas submitted an action taken report on its earlier recommendations on the subject ‘**Review of Implementation of CBG (SATAT)**’.

### About Sustainable Alternative Towards Affordable Transportation (SATAT)

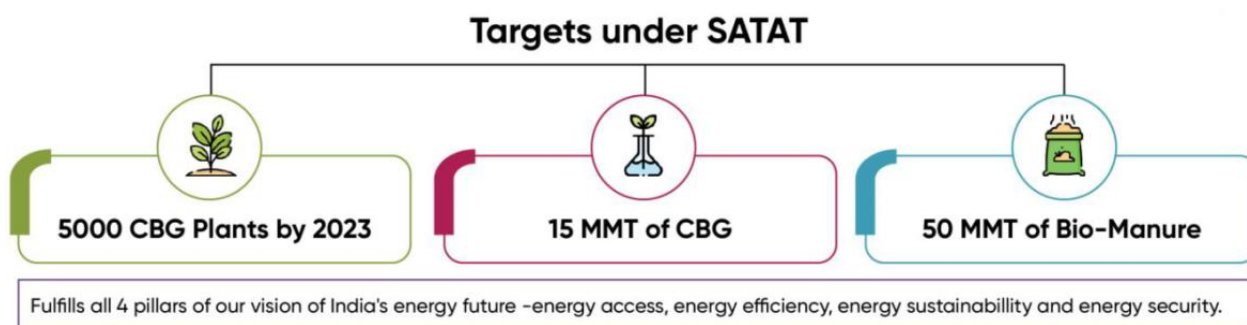
- **Launch: 2018.**
- **Objective:** To set up **Compressed Bio-Gas (CBG) production plants and make available CBG in the market** for use in automotive fuels.
- Bio-gas is produced naturally through the **anaerobic decomposition of biomass**, such as agricultural residue, municipal solid waste, sugarcane press mud, etc.
  - CBG is obtained after **purification and compression of bio-gas**, which has a high **methane content (>90%)** and **higher calorific value (47-52 MJ/kg)**.
  - Other components of CBG include – **CO<sub>2</sub> (<4%)**, **Hydrogen Sulphide (<16 ppm)**, **Nitrogen (<0.5%)**, **Oxygen (<0.5%)**, and **Moisture (<5mg/m<sup>3</sup>)**.
- **Nodal Ministry:** Ministry of Petroleum and Natural Gas (MoPNG).



### Challenges in Implementation

- **Governance-related issues:** Limited technical capabilities of the municipal bodies act as a hindrance.
  - **Multiple regulatory approvals** and involvement of various ministries, including MoEFCC, MoPNG, MoNRE, etc., hinder entrepreneurs.
  - **Discontinuation of Central Financial Assistance (CFA)** since April 2021 for extending support to new and renewable energy projects.
  - **Lack of interest among Oil PSUs** in setting up CBG projects despite domestic natural gas production being a mandate of the upstream oil PSUs
- **Unregulated bio-mass supply chain:** Limited timeframe of 30–40 days for gathering agricultural feedstock and the unpredictability of feedstock prices.
  - **Inefficient source segregation of Municipal Solid Waste** leads to the contamination of the feedstock used in the biogas production process.

- **Distribution challenge:** The differential tax structure of Compressed Natural Gas and CBG acts as a hurdle in the synchronisation of CBG with the City Gas Distribution (CGD) network.
- **Market:** No buyers for fermented organic manure on which CBG companies base 15-20% of their revenue.
  - Lack of **bio-CNG consumers in rural areas** due to limited availability of CNG vehicles.
  - Compressed Bio-Gas (CBG) projects are **not being implemented at a desired rate** (only about 40 CBG plants have been set up.)



#### Other initiatives to promote CBG in India

- Integration of **Bio-CNG as a fuel for transportation**
- **National Policy on Biofuels, 2018:** It aims to promote the production of CBG and other bio-fuels.
- **GOBAR-Dhan Scheme:** To support villages in effective management of cattle and bio-degradable wastes.
- **Recognition of CBG projects under the Priority Sector Lending (PSL) scheme** by the RBI to improve access to credit.
- **Fertilizer Control Order for Fermented Organic Manure:** To promote usage of organic fertilizer in agriculture and expand market for solid and liquid by-products of CBG plants.
- **National Bioenergy Programme by MNRE:** For capacity building and research in biogas, solid waste management, and other bioenergy aspects.

#### Way Forward

- **Coordination mechanism:** Convene meetings of the **National Bio-fuel Coordination Committee (NBCC)** regularly to sort implementation issues.
- **Financial assistance:** Need to move towards **Generation Based Incentive (GBI)** instead of Capex-based subsidy for CBG plants.
  - Setting up a **financial institution in consultation with Oil and Gas PSUs** for all bio-fuel and clean energy projects.
  - Setting up a **Bio Fuel Infrastructure Fund** and **Credit Guarantee Fund** to expedite the development of the CBG sector.
  - Provide **fiscal support** for the development of **pipeline infrastructure for connecting CBG projects with the CGD network.**
- **Governance reforms**
  - **Simplify and digitise regulatory approvals** by creating **single window clearance** for disbursement of subsidies.

- **Capacity building of Urban Local Bodies** and involving the **PPP model** to ensure effective waste segregation in municipalities.
- **Restricting or regulating the export of agricultural biomass** to ensure local bioenergy industries have affordable access to feedstock
- **Technology:** Use of AI-based sensors to analyse the quality of feedstock, enable vehicle tracking, etc., to establish a sound biomass supply chain

## 6. DEBT-FOR-NATURE SWAP

- **Gabon** has recently **announced a \$500 million debtfor-nature swap** deal for marine conservation.
- **About Debt-for-nature swap**
  - It is **an agreement where a creditor forgoes a portion of debtor's foreign debt or provides debt relief** in exchange for **debtor's commitment to invest in a specific environmental project**.
  - It can be **bilateral or multi-party**.
- **Significance:** Mainstreaming the **environment in government policies**, better **adaptation** and **mitigation** to climate change, Free up fiscal resources for government.

## 7. EXPORT POLICY OF RED SANDERS WOOD

- **Directorate General of Foreign Trade (DGFT)**, under **the Ministry of Commerce and Industry** amended export policy of red sanders wood sourced from privately cultivated land.



- The amendments were issued under the power conferred by the **Foreign Trade (Development & Regulation) Act, 1992** and **Foreign Trade Policy 2023**.
- **Recent amendment allows an annual export quota** for artificially propagated red sanders **and zero export quota** for wild specimens of red sanders.
- Under the foreign trade policy **import** of Red Sanders is **prohibited**, while its **export** is **restricted**.
  - **Earlier DGFT in 2019** had revised its export policy to **permit export of Red Sanders, in log form and roots**, if it is **exclusively obtained from private cultivated land (including pattaland)**.
- **About Red Sanders**
  - Flora endemic to a distinct tract of forests in **Eastern Ghats**.
  - **Very slow-growing tree species** that attains maturity after 25 – 40 years.
  - **Resistant to droughts**.
  - Locally known as Yerra Chandanam, Rakta Chandanam.

- Its **therapeutic properties** are responsible for its **high demand across Asia**, particularly China, for use in cosmetics, medicinal products, and high-end furniture/woodcraft.
- **Conservation Status**
  - **IUCN Status:** Endangered
  - **Wildlife (Protection) Act, 1972, India:** Schedule IV
  - **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Status:**
  - Appendix II

## 8. THAROSAURUS INDICUS

- It is a **long-necked, plant-eating dicraeosaurid dinosaur** found in Jaisalmer, Rajasthan by India Scientists.
- It is **167 million years old** and belongs to a **new species, unknown to scientists** thus far.
  - Theories so far had suggested that the **oldest dicraeosaurid was from China (about 166-164 million years old)**.
  - Also, fossils of dicraeosaurid dinosaurs have been found previously in **North and South Americas, Africa and China**.
- It is named after the **‘Thar desert’** of Rajasthan where it was found.



## 9. FUJIWHARA EFFECT

- As per the National Weather Service, **when two hurricanes or cyclones spinning in same direction, come close to each other, they begin ‘an intense dance around their common center’.**



- This interaction between two cyclones is called the **Fujiwhara effect**.

- In rare instances, if **two cyclones are intense, they may merge with one another** leading to the **formation of a mega cyclone** capable of wreaking havoc along coastlines.
- It was **observed for the first time over western Pacific Ocean**, when typhoons Marie and Kathy merged in 1964.
- It was **first Identified by Sakuhei Fujiwhara in 1921 in Japan**.

#### 10. DEVIKA: NORTH INDIA'S FIRST RIVER REJUVENATION PROJECT

- **North India's first** River Rejuvenation Project, **named Devika**, is almost finished and was inaugurated by Prime Minister Narendra Modi. This project modeled after the 'Namami Ganga' **initiative**, is aimed at **restoring the health of the Devika River** (in Udhampur, Jammu & Kashmir).
- **The Liquid Waste Management Project** involves creating a network of pipes and manholes connecting households under the Devika Rejuvenation Project. Additionally, a Solid Waste Management Project is planned to further enhance the river's restoration.

#### 11. INDIA'S FIRST SOLAR ROOF CYCLING TRACK (HYDERABAD)

- **Hyderabad** is embracing a **sustainable shift towards cycling**, with the introduction of an **innovative solar roof cycling track (23 KM long)** near the city's Outer Ring Road (ORR).
- The track encompasses **three lanes and consists of two segments**. Distinguished by its **16MW solar panels fixed on the roof**, this project sets an impressive sustainability precedent.
- **Usage:** The example can be used in governance/disaster management/ environment Questions.



#### 12. PLASTIC OVERSHOOT DAYS

##### Context:

- In 2023, India experienced **157 days of plastic overshoot**, which means that the country generated and accumulated a significant **amount of plastic waste** that exceeded its waste management capacity.
- Also, in another news, a recent report highlights that **India is one of the 12 countries accountable for 52%** of the global mismanaged plastic waste, alongside nations like China, Brazil, Indonesia, and the United States.

### What is Plastic Overshoot Day?

- Plastic Overshoot Day marks the **point in a year when the amount of plastic waste generated exceeds the capacity** to properly manage and dispose of it. It signifies a **tipping point where the world accumulates more plastic waste** than can be effectively handled by waste management systems. **World's first Plastic Overshoot Day on July 28, 2023, was marked recently.**

### Status of Plastic (as per the Report):

- India has Mismanaged Waste Index (MWI) (ratio of the mismanaged waste and the total waste) of **over 98%**
- India categorized as 'The Waste Sponges'**: It contributed a staggering over **73 lakh ton** of mismanaged plastic waste in 2023
- India has a **relatively low annual per capita plastic consumption** of **5.3 kg (USA has 221 kg)** **1.33 %** of its total plastic waste was imported, while the country **exported 0.8 %** of its total waste
- India will contribute an **average of 16.7 days** of plastic overshoot to the environment in 2023.

### Measures Needed:

| Measure                                         | Example                                                                                  |
|-------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Reduce Single-Use Plastics</b>               | Ban on plastic straws and cutlery                                                        |
| <b>Promote Recycling and Circular Economy</b>   | Implementing bottle deposit return systems                                               |
| <b>Improve Waste Collection and Management</b>  | Increasing the number of recycling bins                                                  |
| <b>Raise Public Awareness</b>                   | Conducting anti-plastic campaigns                                                        |
| <b>Enforce Extended Producer Responsibility</b> | Manufacturers responsible for plastic waste                                              |
| <b>Innovate Packaging Solutions</b>             | Creating biodegradable packaging materials                                               |
| <b>Policies</b>                                 | Increasing investment in waste management policies like Extended Producer Responsibility |
| <b>Global Treaty</b>                            | There is a need for a global treaty on plastic pollution                                 |

### Initiatives by India:

- 1000 Cities to become 3-Star Garbage Free** by October 2024
- Mission LiFe
- Plastic Waste Management Rule
- Ban on single use of plastics
- 'Beat Plastic Pollution' campaign to maintain the cleanliness and environmental integrity of the state's beaches (by Kerala Government)

### Global Initiatives (for microplastics):

- Global Partnership on Marine Litter (GPML)

- GloLitter Partnerships Project
- London Convention, 1972



#### Conclusion:

Further efforts should include **enhancing India's plastic waste tracking system**, enforcing **transparency in plastic usage by brands**, involving the **informal sector in the formal plastic management process**, and **creating product packaging** that considers the final disposal stage.

### 13. 'SAMUDRA' MOBILE APP

#### Context:

The **Indian National Centre for Ocean Information Services (INCOIS)**, a division of the **Ministry of Earth Sciences**, has introduced a **new mobile application called 'SAMUDRA' - Smart Access to Marine Users for Ocean Data Resources and Advisories**.

#### Features:

- This app offers **comprehensive ocean-related information**, benefiting **seafarers and the fishing community**.
- It provides **real-time updates and critical alerts** on oceanic disasters like **tsunamis, storm surges, high waves, and swell surge alerts**.
- It features **interactive maps, charts, and animations** to explain complex oceanic phenomena.

#### Benefits:

- The app is particularly **valuable for fishermen** as it offers **Potential Fishing Zone (PFZ) advisories**, **guiding them to potential fish aggregation locations**.
- The app also serves **various public and private entities** like the **Indian Coast Guard, the Navy, and shipping industries**.
- The app aligns with INCOIS's mission to serve the nation with **ocean data and advisory services**, **contributing to sustainable ocean activities and the Blue Economy**.

#### 14. 'FLOODWATCH' APP

##### Context:

The Central Water Commission of India has introduced **the 'FloodWatch' app**, designed to **forecast floods one day in advance** and provide a **seven-day advisory for flood risk** at various measurement stations across the country.

The app features a **map of India with colour-coded circles** representing flood risk levels:

- Green for normal
- Yellow for above normal
- Orange for severe
- Red for extreme

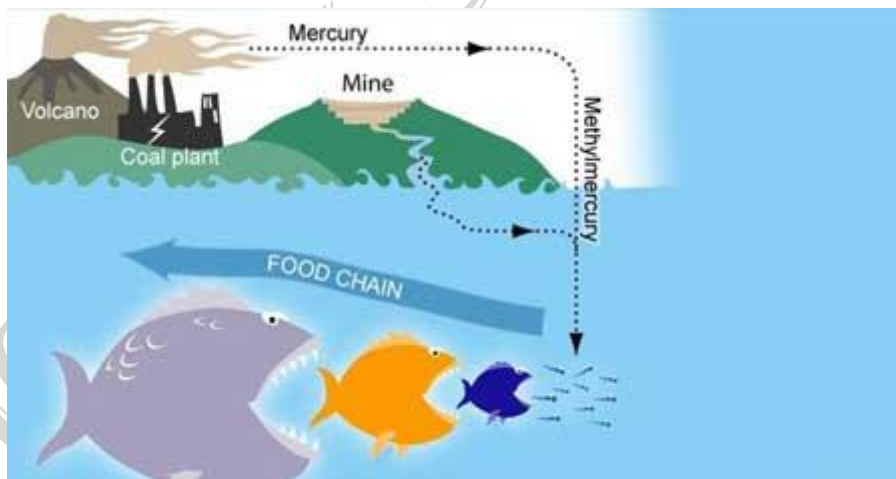
The app also provides **State-wise/basin-wide flood forecasts for up to 24 hours** or flood advisories, up to seven days, that can be accessed by selecting specific stations.

Clicking on a circle provides information about **the current water level**, the historical highest level, the danger level, and warnings in both written and audio formats. The app utilizes **satellite data analysis, mathematical modelling**, and real-time monitoring to deliver accurate and timely flood forecasts.

#### 15. SIXTH ANNIVERSARY OF MINAMATA CONVENTION

##### Context:

The **Minamata Convention on Mercury**, which marks its sixth anniversary, is a significant global agreement aimed at safeguarding people and the environment from the harmful impacts of mercury exposure.



##### About Mercury:

- Mercury is a **naturally occurring element that is found in air, water and soil**.
- It may have toxic effects on the nervous system, **thyroid, kidneys, lungs, immune system, eyes, gums and skin**.

##### About the Minamata Convention:

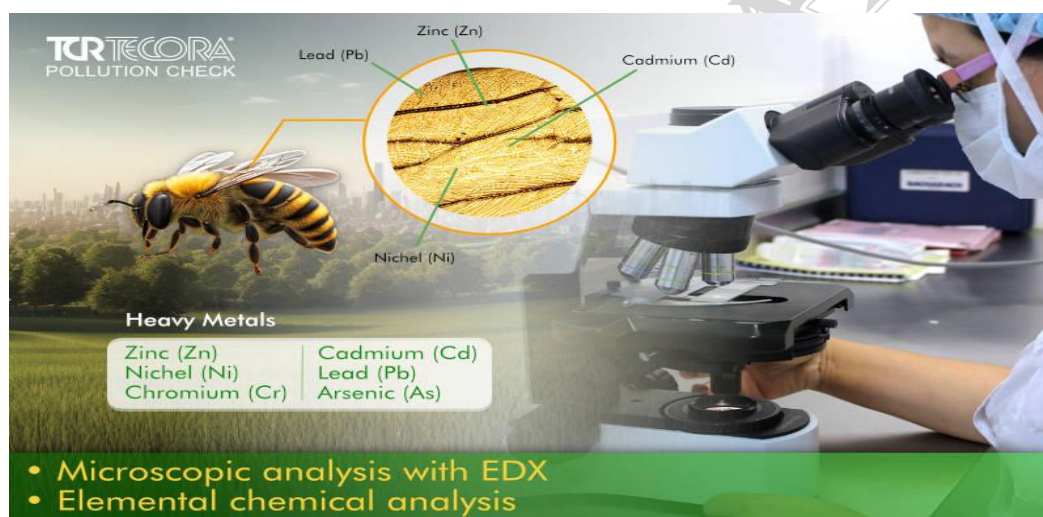
- The Minamata Convention on **Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury and its compounds**.

- It was agreed at **the fifth session of the Intergovernmental Negotiating Committee in Geneva, Switzerland 2013. It entered into force in 2017.**
- Controlling the **anthropogenic releases of mercury throughout its lifecycle is one of the key obligations under the Convention.**
- The Convention also **addresses interim storage of mercury and its disposal once it becomes waste, sites contaminated by mercury as well as health issues.**
- **India has ratified the Convention.**

## 16. BEES CAN MONITOR POLLUTION

### Context:

- Two recent studies have employed honey bees as **effective biomonitoring tools to assess contamination in urban environments.**
- Honey bees were found to **effectively map pollution patterns and reveal the most sensitive markers of contamination tracing toxic metals and antimicrobial resistance genes.**



### Process:

- **Bees' foraging behaviour** allows them to pick up contaminants, offering insights into pollution patterns. They can reveal the **presence of toxic metals near pollution sources** and help understand factors contributing to contamination. Bees also aid in assessing the **spread of antimicrobial resistance genes**, which can be ingested from water bodies. This approach provides a valuable tool for monitoring pollution and addressing environmental health concerns.
- These studies highlight the **importance of comprehensive monitoring to address environmental health challenges.**

## 17. GLOBAL BIODIVERSITY FRAMEWORK FUND (GBFF) RATIFIED

### Context:

The Global Biodiversity Framework Fund (GBFF) has been ratified and launched **during the 7th Assembly of the Global Environment Facility (GEF) in Vancouver, Canada.**

### What is the Global Biodiversity Framework Fund?

**GBFF** (1st approved in July this year under the Global Environment Facility (GEF)) aims to support the Kunming-Montreal Global Biodiversity Framework's **goals by 2030**. Contributions from countries, non-profits, and the private sector are welcome.

#### Fund Allocations:

- 20% will be allocated to **Indigenous Peoples and local communities (IPLCs)**
- 25% to **GEF agencies**
- 36% to **SIDS (Small Island Developing States)**
- 3% to **LDCs (Least Developed Countries)**
- The allocation for **IPLCs will be reviewed for two years** and the allocations for **SIDS and LDCs will be reviewed for three years**.

### What is the Kunming-Montreal Global Biodiversity Framework?

- **Adopted at COP15 (2022)**, it includes **4 goals and 23 targets** for achievement by 2030. It **aims to restore ecosystems**, conserve areas, **prevent species extinction**, reduce pollution risks, tackle climate change, and more.
- Signatories committed to channelling USD 200 billion per year for conservation.
- Companies to report biodiversity impacts.
- Focus on reducing harmful subsidies and enhancing Monitoring

## 18. “STATE OF INDIA’S BIRDS, 2023” REPORT

#### Context:

The “State of India’s Birds, 2023” report reveals a **widespread decline in most bird species** across the country, **with some currently declining and others projected to decline in the future**.

#### Key Findings:

- **Raptors, migratory shorebirds, and ducks** have experienced the most significant declines.
- However, several species like the **Indian Peafowl, Rock Pigeon, Asian Koel, and House Crow** are **thriving and increasing in both abundance and distribution**.
- The assessments, based on **data from around 30,000 birdwatchers**, indicate that **60% of the 338 species with identifiable long-term trends have declined**, while 36 species have increased.
- **Specialist bird species, which inhabit specific habitats like wetlands and rainforests, are facing rapid declines, while generalist species capable of adapting to various habitats are faring better**.
- Long-distance migratory birds, such as those from Eurasia and the Arctic, have suffered significant declines, while resident species remain more stable.
- Birds with **diets focused on vertebrates and carrion** have seen **notable declines**, potentially due to **harmful pollutants present in these food resources**.
- The report emphasizes the decline of species endemic to the **Western Ghats and Sri Lanka** biodiversity hotspots.

The main **threats to birdlife in India** highlighted in the report include:

- **Climate Change**
- **Urbanization**
- **Monocultures**
- **Energy Infrastructure**

## 19. GLOBAL BIODIVERSITY FRAMEWORK FUND (GBFF) RATIFIED

### Context:

We already covered the Global Biodiversity Framework Fund (GBFF) yesterday. This is additional information for GBFF.

**Global Biodiversity Framework Fund (GBFF) is presented in a tabular format:**

| Aspect                              | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | <b>GBFF</b> (1st approved in July this year under the Global Environment Facility (GEF)) aims to support the Kunming-Montreal Global Biodiversity Framework's <b>goals by 2030</b> . Contributions from countries, non-profits, and the private sector are welcome.                                                                                                                                                                                                                                   |
| <b>Purpose</b>                      | To mobilize investment and accelerate <b>conservation efforts for global biodiversity</b> .                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Launch</b>                       | Ratified at the <b>Global Environmental Facility's seventh assembly</b> in Vancouver, Canada by representatives of 185 countries.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Governance</b>                   | <p><b>GBFF Council Representation:</b></p> <ul style="list-style-type: none"> <li>• 16 members from developing countries</li> <li>• 14 members from developed countries</li> <li>• 2 members from countries of central and eastern Europe and the former Soviet Union</li> </ul> <p><b>Decision-making:</b> Consensus-based decisions, following the GEF Instrument model.</p>                                                                                                                        |
| <b>Financial Mobilization Goals</b> | <ul style="list-style-type: none"> <li>• 20% will be allocated to <b>Indigenous Peoples and local communities (IPLCs)</b> <ul style="list-style-type: none"> <li>○ The allocation for <b>IPLCs will be reviewed for two years</b> and the allocations for SIDS and LDCs will be <b>reviewed for three years</b>.</li> </ul> </li> <li>• 25% to <b>GEF agencies</b></li> <li>• 36% to <b>SIDS (Small Island Developing States)</b></li> <li>• 3% to <b>LDCs (Least Developed Countries)</b></li> </ul> |
| <b>Targets</b>                      | <b>Raise international financial flows</b> to developing countries (at least \$20B by 2025, \$30B by 2030)                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Priority Support:</b>            | Small Island Developing States (SIDS) and Least Developed Countries (LDCs) will receive <b>over a third of the fund's resources</b> , prioritizing their biodiversity conservation efforts.                                                                                                                                                                                                                                                                                                           |

|                              |                                                                                                                                                                                                                                                                                                                    |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Financial Management:</b> | <b>Trustee:</b> The World Bank will serve as the Trustee of the GBFF.<br><b>Establishment:</b> Modeled after funds like <b>Capacity-Building Initiative for Transparency (CBIT) Trust Fund, Least Developed Countries (LDCs) Fund, Special Climate Change Fund, and Nagoya Protocol Implementation Fund (NPIF)</b> |
| <b>Funding Sources</b>       | Governments, philanthropy, the private sector, international financial institutions.                                                                                                                                                                                                                               |
| <b>Goals</b>                 | Halt and reverse biodiversity loss, and promote sustainable species and ecosystem health                                                                                                                                                                                                                           |
| <b>Addressed Threats</b>     | Wildfires, flooding, extreme weather, unsustainable activities, urbanization.                                                                                                                                                                                                                                      |
| <b>Challenges</b>            | Need for more contributions, and firm commitment to allocate funds to Indigenous groups.                                                                                                                                                                                                                           |

## 20. 6TH CENSUS REPORT ON MINOR IRRIGATION (MI) SCHEMES

### Context:

The Ministry of Jal Shakti has released the **6th census report on minor irrigation (MI) schemes, providing crucial data for effective planning and policy-making in this sector.**

### Key Highlights:

- The census reveals that there are a **total of 23.14 million minor irrigation schemes in India**, with **94.8% (21.93 million) being Ground Water (GW) schemes** and **5.2% (1.21 million) being Surface Water (SW) schemes.**
- **Uttar Pradesh** holds the **highest number of MI schemes**, followed by **Maharashtra, Madhya Pradesh, and Tamil Nadu.**
- The report **indicates a growth of 1.42 million MI schemes compared** to the previous census, with a **6.9% increase in GW schemes** and a **1.2% increase in SW schemes.**
- The ownership of **MI schemes is primarily private (96.6%)**, with a notable finding that **18.1% of individually owned schemes are owned by women.**

## 21. EMPEROR PENGUIN

### Emperor Penguin



**Context:** In late 2022, a tragic event unfolded in Antarctica's Bellingshausen Sea region where **four out of five emperor penguin colonies** experienced extensive breeding failure due to the loss of sea ice.

Emperor penguins' breeding cycle depends on stable sea ice. Loss of sea ice prevented chicks from developing waterproof wings and regulating body temperature, making them vulnerable to drowning or freezing.

#### Comparison of Emperor Penguin and other Penguins:

| Aspect                 | Emperor Penguin                                          | Penguins                                      |
|------------------------|----------------------------------------------------------|-----------------------------------------------|
| Description            | Largest, tallest, and heaviest penguin species           | Group of aquatic flightless birds             |
| Geographical Presence  | Endemic to Antarctica                                    | Primarily in the Southern Hemisphere          |
| IUCN Status            | Near Threatened                                          | Varies among species                          |
| World Penguin Day      | Observed on April 25th                                   |                                               |
| Flight Capability      | Flightless                                               | Flightless                                    |
| Diet                   | Fish, crustaceans                                        | A varied diet, including fish and krill       |
| Submergence Capability | Can remain submerged for around 20 minutes while hunting | Diverse submergence times                     |
| Breeding Season        | Breeds during the Antarctic winter                       | Varied breeding seasons                       |
| Lifespan               | Typically, around 20 years in the wild                   | Varies among species, up to 50 years observed |

### Why disappearance of sea ice cause catastrophic breeding failure of emperor penguins?

- Emperor penguins' breeding cycle heavily relies on stable sea ice, where they spend their entire breeding cycle. The sea ice, present from April to December, provides the necessary **platform for their breeding and fledging activities** (the stage in the development of young birds when they acquire the feathers and abilities necessary for flight.).
- As a result of the loss of sea ice, the penguin chicks were unable to develop their **waterproof adult wings** and regulate their body temperature. This led to their **vulnerability to drowning or freezing to death**.
- While emperor penguins usually adapt to localized ice loss by moving to stable sites, the extensive shrinking of sea ice extent makes this strategy unfeasible.
- This incident marked the **first recorded instance of widespread breeding failure** of emperor penguins across multiple colonies due to sea ice loss.

## 22. NATIONAL CARBON REGISTRY

### Context:

The UNDP (United Nations Development Programme) has created an **open-source software named the National Carbon Registry** for effectively **managing national data** and **processes related to trading carbon credits**.

- This software has received **accreditation as a digital public good (DPG)**, utilizing open-source code that **countries can adapt to their own requirements**.

- It comprises various **modules, software, and technical documentation** that can be customized by countries, potentially **reducing costs and timelines for implementation**.
- The registry aligns with **best practices and insights from countries**, supported by the **Digital4Climate Working Group, which includes UNDP, World Bank, UNFCCC, and EBRD**.
- This initiative aims to **build a digital public infrastructure for addressing climate challenges and carbon markets**. The software also aligns with the Paris Agreement's **Article 6 and NDCs, recognizing the growing interest in carbon markets worldwide for GHG emission reduction**.

### 23. ADDIS ABABA DECLARATION

#### Context:

**African environment ministers** have come to an agreement to establish **national and regional strategies aimed at minimizing the environmental impacts** associated with the **extraction and processing of critical mineral resources**.

- This decision stems from the **19th African Ministerial Conference on the Environment (AMCEN) held in Addis Ababa, Ethiopia**.
- The conference, themed “**Seizing Opportunities and Enhancing Collaboration to Address Environmental Challenges in Africa**,” resulted in the **Addis Ababa declaration**, which acknowledges **pressing environmental challenges like land degradation, desertification, and drought**.
- The declaration emphasizes actions to **combat climate change, plastic pollution, marine protection, biodiversity conservation, and natural capital, contributing to global goals of sustainable development and climate mitigation**.
- The conference saw the launch of the first **Africa UN Science- Policy-Business Forum** and discussions **encompassing Africa’s engagement in global environmental assemblies and conventions**.

### 24. HOLLONGAPAR GIBBON SANCTUARY

#### Context:

Primatologists have proposed a solution to **address the division caused by a 1.65-km long railway track** within the **Hollongapar Gibbon Sanctuary in eastern Assam**, dedicated to the **western hoolock gibbon**.

- The sanctuary, **home to about 125 hoolock gibbons**, is facing **habitat fragmentation due to the track’s presence**, which has **separated gibbon populations on either side**.
- To counter this, **scientists from the Wildlife Institute of India (WII) have suggested constructing an artificial canopy bridge to enable the gibbons to move across the railway line**.
- This would help **maintain genetic diversity and support the survival of the endangered gibbons**, which are **highly sensitive to disruptions in their canopy habitat**.



#### About Hoolock Gibbons:

- Gibbons, known as the **smallest and fastest of all apes**, inhabit **tropical and subtropical forests in Southeast Asia**.

#### Conservation Status:

- International Union for Conservation of Nature's Red List:
- Western Hoolock Gibbon: Endangered**
- Eastern Hoolock Gibbon: Vulnerable.**
- Schedule 1 of the **Indian (Wildlife) Protection Act 1972**.

The **Hollongapar Gibbon Sanctuary**, formerly known as the **Gibbon Wildlife Sanctuary or Hollongapar Reserved Forest** is an isolated protected area of **evergreen forest located in Assam, India**. The sanctuary was **officially constituted and renamed in 1997**.

The Hollongapar Gibbon Sanctuary contains **India's only gibbons – the hoolock gibbons**, and North-eastern India's only nocturnal primate – **the Bengal slow loris**.

## SCIENCE AND TECHNOLOGY

### 1. CHANDRAYAAN-3 SOFT LANDING

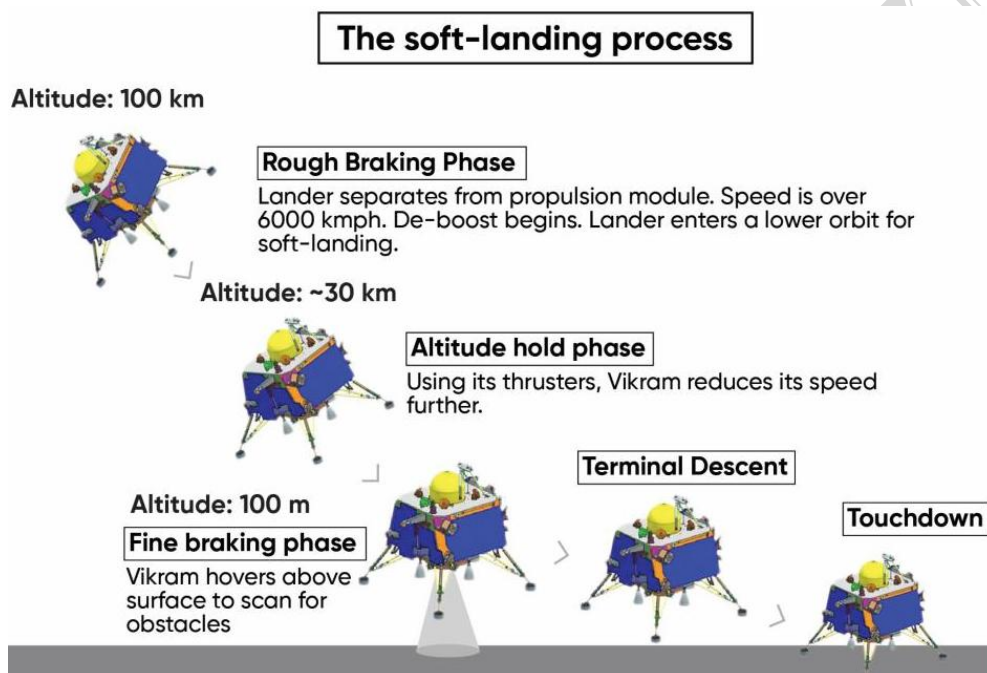
#### Context:

Chandrayaan-3 lander accomplished a 'soft landing' on the Moon's south pole.

#### More on news

- The spot where the Chandrayaan-3 Vikram lander made a soft landing would be named **Shiv Shakti Point**.
- The site where the Chandrayaan-2 lander crash-landed on the Moon's surface in 2019 would be known as **Tiranga Point**.
- August 23**, the day the Chandrayaan-3 lander touched down on the lunar surface, **would be celebrated as 'National Space Day'**.
- Chandrayaan-3 had 3 objectives:**

- **Accomplished:**
  - ✓ **Demonstration of a Safe and Soft Landing** on the Lunar Surface
  - ✓ **Demonstration of Rover roving** on the moon.
- **Underway:**
  - ✓ Conducting **in-situ scientific experiments**. (The lander and the rover, with a **mission life of one Lunar day** (14 Earth days), have scientific payloads to conduct experiments on the lunar surface.)
- **Chandrayaan-3 successfully underwent a 'hop experiment':** On command, it fired the engines, elevated itself by about 40 cm as expected and landed safely.
  - The success of this 'kick-start' experiment raises hopes for future missions such as sample return missions or human missions.



#### Know the term

**Plasma:** The Fourth state of matter. It is a gas that is so hot that some or all its constituent atoms are split up into electrons and ions.

It can be roughly viewed as a soup of positively charged particles (ions) and negatively charged particles (electrons).

#### Key findings made by Chandrayaan-3

- **Temperature:** Chandra's Surface Thermophysical Experiment (ChaSTE) payload onboard Vikram Lander measured the temperature profile of the lunar topsoil to understand the thermal behaviour of the Moon's surface.
  - It was believed that the **temperature** could be around 20 degrees centigrade to 30 degrees centigrade on the surface, **but it is 70 degrees centigrade**.
- **Elements on the moon:** Laser-induced breakdown Spectroscopy instrument onboard 'Pragyan' rover 'unambiguously confirmed' the **presence of sulphur** on the lunar surface near the south pole.

- **Other elements** like Aluminum (Al), Calcium (Ca), Iron (Fe), Chromium (Cr), Titanium (Ti), Manganese (Mn), Silicon (Si), and Oxygen (O) **were also detected**.
- **Thin plasma:** The ‘Langmuir probe’ (an instrument that measures the properties of plasmas) finds that there is thin plasma on the surface of the moon.
  - The discovery signifies that **radio waves can easily pass through space**, an important feature for **communication between lunar missions**.
- **Natural seismic activity:** Recording from the Instrument for Lunar Seismic Activity (ILSA) payload indicates a possibility of a quake on the moon, but its exact nature is currently under investigation.
- **Crater:** Chandrayaan-3 Rover identified a 4-meter diameter crater on the moon’s surface.

### Conclusion

Chandrayaan-3 represents not just a mission to the Moon but a giant leap for India’s space program and its contributions to our understanding of the cosmos.

## 2. FINGER MINUTIAE RECORD – FINGER IMAGE RECORD (FMR-FIR) MODALITY

### Context:

UIDAI (Unique Identification Authority of India) is employing artificial intelligence-based technology to **address fraud in the Aadhaar-enabled Payment System (AePS)**. The technology is called **Finger Minutiae Record–Finger Image Record (FMR-FIR) modality**.

### What is FMR-FIR?

- The Finger Minutiae Record–Finger Image Record (FMR-FIR) modality is an Artificial Intelligence / Machine Learning technology used by UIDAI to **prevent fraud in Aadhaar-enabled Payment System (AePS)**.

### How does it work?

- It **verifies the authenticity of fingerprints during authentication** by combining **finger minutiae (distinct ridge characteristics) and finger images**. This technology helps detect **cloned fingerprints**, ensuring that only real fingerprints are used for verification, thus enhancing security and preventing fraud.

### Need?

- In FY2023, the total number of fraud cases in the banking system was 13,530. Of this, almost **49 per cent or 6,659** cases were in the digital payment – card/internet – category.

### Significance:

- As payment-related frauds rise, this AI-based solution aims to enhance security and curb financial crimes associated with the AePS system

## 3. SUPERCONDUCTIVITY

### Context:

Recently, the claims of material **LK-99 depicting the room temperature superconductivity** proved inconsistent.

### More about the news

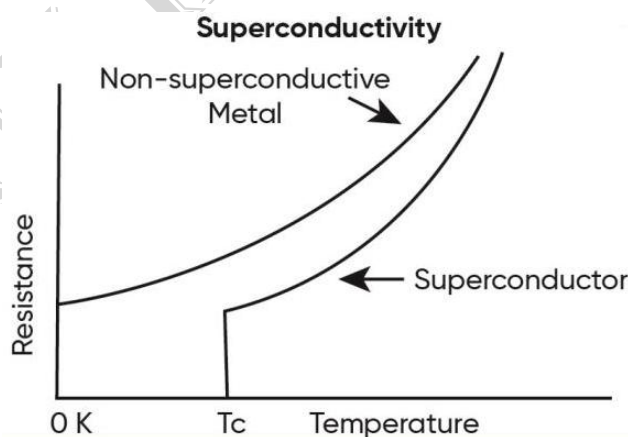
- Earlier, a group of **South Korean scientists** published **two research papers** claiming that they had discovered the room-temperature superconductivity phenomena in a material called LK-99.
- **LK-99 is a dark grey solid** created due to heating mixtures of powdered **compounds of lead, oxygen, sulphur and phosphorus** at very high temperatures.

### Do you know

- The Phenomena of Superconductivity was discovered by Heike Kamerlingh Onnes in 1911.
- He discovered a sudden drop in electrical resistance While Investigating the properties of mercury cooled to temperatures close to absolute zero ( $-273.15^{\circ}\text{C}$  or  $0\text{ K}$ )

### Superconductivity

- Superconductivity is a phenomenon in which **certain materials exhibit zero electrical resistance** and the **expulsion of magnetic fields** when **cooled below a critical temperature ( $T_c$ )**.
  - Critical temperature is the temperature at which **the materials suddenly change from a normal conducting state to a superconducting state**.
  - **Meissner Effect** is the **expulsion of a magnetic field** from a superconductor during its transition to the superconducting state when it is cooled below the  $T_c$ .
- Currently, **superconductivity** can be achieved only at very low temperatures, **more than 250 degrees Celsius below zero**.
  - **Materials like Mercury, Lead, Aluminum, Tin, Niobium**, etc., become superconducting at critical temperatures ( $T_c$ ).
  - In some cases, **materials can exhibit superconductivity at slightly higher temperatures** as well, but under increased pressure conditions.
  - Scientists are looking for a material that **can display superconductivity at room temperature**

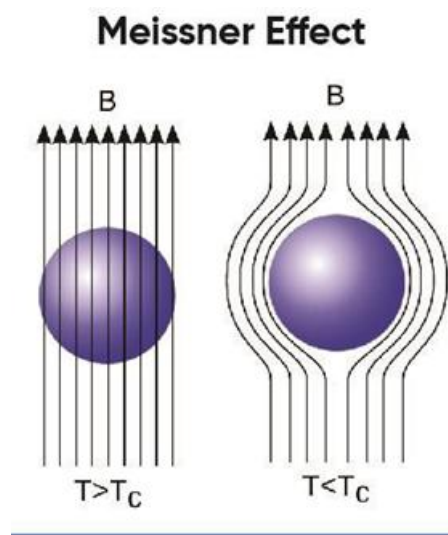


- **How is the zero resistance achieved?**
  - Under **normal conditions**, **electrons encounter resistance** when moving through a crystalline solid due to interactions with vibrating atoms in the crystal lattice.
  - However, in certain materials, **when the temperature is lowered below a critical level**, **electrons pair up into loosely bound pairs** known as **Cooper pairs**.

- The **individual electrons within a Cooper pair cannot be easily scattered** by the lattice vibrations, and hence, passing **electrons start to glide through the material unimpeded**, leading to superconductivity and zero resistance.

### Superconductivity at Room Temperature

- A **room-temperature superconductor** is a material capable of exhibiting superconductivity at operating temperatures, i.e. above 0 °C (273 K; 32 °F) - temperatures.
- Obtaining room temperature superconductivity is **affected by many aspects, like**
  - **Difficult to achieve conditions like extreme pressure conditions**, and materials may not be able to withstand these extreme conditions.
  - **Non-formation of Cooper Pairs** at higher temperatures.
  - At room temperature, **thermal energy is relatively high, making it difficult for electrons to form Cooper pairs** and overcome this energy barrier.



### Achieving a room-temperature superconductivity will lead to

- **High efficiency and low-cost energy transmission** through grids, thereby bringing down the cost of energy.  
Ex: Superconducting Generators, Superconducting magnetic energy storage, Transmission lines, Transformers etc
- **Better Magnetic Resonance Imaging (MRI) technology**, with enhanced image resolution and faster scanning, leading to more accurate diagnoses and improved patient outcomes.
- **Reduced cost for Magnetic levitation (Maglev) train technology** as the required conditions are easily achievable.
- **Efficient and less energy-consuming supercomputers** can be manufactured, which perform complex simulations, data analysis, artificial intelligence applications, etc.
- **Enable efficient and rapid energy storage and retrieval**, addressing the intermittency issues of renewable energy sources.
- **Science and research:** Utilised in accelerators and Nuclear Magnetic Resonance (NMR) for various experiments like the Large Hadron Collider

#### Noble Prizes received for research in superconductivity

- **Heike Kamerlingh Onnes (1913):** For his discovery of superconductivity in 1911.
- **John Bardeen, Leon Cooper, and Robert Schrieffer (1972):** For their development of the Braden Cooper and Schrieffer's theory (BCS theory), which explained the mechanism of superconductivity in conventional superconductors.
- **Brian D. Josephson, Leo Esaki and Ivar Giaever (1973):** For their prediction of the Josephson effect, observed in superconducting materials.
- **Pyotr Leonidovich Kapitsa (1978):** For his basic inventions and discoveries in the area of low-temperature physics.
- **K. Alexander Müller and J. Georg Bednorz (1987):** for their discovery of high-temperature superconductivity in copper oxide (cuprate) materials.

#### 4. AKIRA RANSOMWARE

##### Context:

The Akira ransomware is a type of ransomware **that targets both Windows and Linux devices.**

- It encrypts data on the affected devices, **appends filenames with the “.akira” extension**, and deletes **Windows Shadow Volume copies** to prevent data recovery.
- The ransomware also **terminates Windows services to ensure uninterrupted encryption**. After stealing and encrypting sensitive data, **the attackers demand a ransom, threatening to release the data on the dark web if their demands are not met.**

##### How it works?

- The **ransomware is spread through spear phishing emails with malicious attachments**, drive-by downloads, specially crafted web links in emails, and insecure Remote Desktop connections.
- It has **targeted various domains, including education, finance, real estate, manufacturing, and consulting, and once inside a corporate network, it spreads laterally to other devices using stolen Windows domain admin credentials.**

To protect against Akira ransomware and other similar threats, **users are advised to:**

- **Maintain up-to-date offline backups**
- **Keep operating systems and networks updated**
- **Implement strong password policies and multi-factor authentication**
- **Enforce data encryption**
- **Block attachment file types that are commonly associated with malicious code**
- **Regular security audits of critical systems**

## 5. GREEN HYDROGEN STANDARD

- **Ministry of New and Renewable Energy** notifies Indian Green Hydrogen Standard under National Green Hydrogen Mission (NGHM).
- Notification outlines **emission thresholds that must be met** in order to classify produced hydrogen as ‘Green’.
  - **Hydrogen** can be produced by **splitting water into hydrogen and oxygen using** fossil fuels or renewable energy.
- **Key highlights**
  - **Definition:** Green Hydrogen (GH) is **produced using renewable energy** including, production through **electrolysis or biomass conversion**.
  - **Emission thresholds: Well-to-gate emission** (i.e., water treatment, electrolysis, gas purification, etc.) **of not more than 2 kg CO<sub>2</sub> equivalent/kg H<sub>2</sub>**.
  - **Nodal Authority: Bureau of Energy Efficiency** shall accredit agencies for the monitoring, verification, and certification of GH production projects.
- **About NGHM**
  - **Aim:** To make India a **Global Hub for producing, utilizing, and exporting GH**.
  - **Programs**
    - ✓ **Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)** for financial incentive.
    - ✓ **Strategic Hydrogen Innovation Partnership (SHIP)** PPP framework for R&D.

## 6. GRAPHENE-AURORA PROGRAM

- **The Ministry of Electronics & Information Technology (MeitY)** launched the ‘Graphene-Aurora program’.
- **Implementation:** Digital University Kerala with joint funding from MeitY and Kerala government and industry partner.
- **Aim:** To bridge the gap between graphene research and commercialization
- **About Graphene**
  - Graphene is a **single layer of carbon atoms arranged in a hexagonal lattice**, forming a twodimensional structure discovered in 2004.
  - **Properties:** ultimately thin, mechanically very strong, transparent, and flexible.
  - **Application:** can be used in touch screens, light panels, solar cells, faster DNA sequencing, drug delivery, etc.

## 7. LOW-PUNGENT MUSTARD

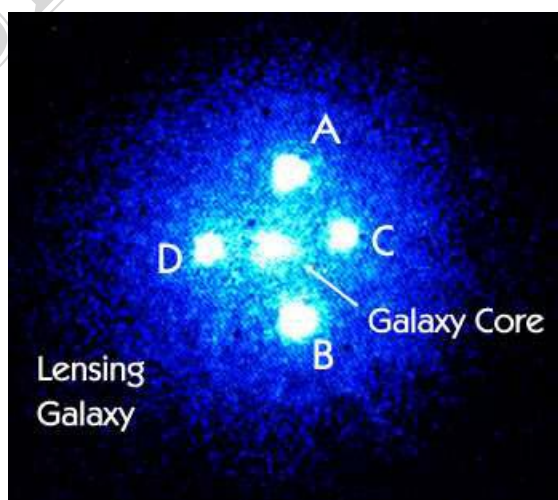
- **Indian researchers developed** the first ever lowpungent mustard using Genome Editing (GE)
- New mustard variety is less pungent as it has **lesser quantity of glucosinolate** at par with the Canola quality limit (30 parts per million or PPM dry weight).

- **Glucosinolates** is a group of **sulphur and nitrogencontaining** compounds contributing giving characteristic **pungency to mustard products**.
- It **protects plants** from invading pathogens, animals, etc.
- However, **high glucosinolates** make it unpalatable, and **causes goiter and internal organ abnormalities** in livestock.
- **Indian mustard** (*Brassica juncea*) contains **120-130 ppm of glucosinolates**.
- It is produced through **gene editing of 'Varuna'**, a highyielding Indian mustard variety, **using CRISPR/Cas9 gene editing technology**.
- Unlike GMOs, **Gene Editing** incorporates modification of **existing genetic material** to improve the quality.
  - **Genetically modified organisms (GMO)** have **transgene** (foreign genes) for improvement in quality.
  - **Dhara Mustard Hybrid-11 (DMH-11)**, is a GM variant of mustard developed in India.
- GE crops **require** clearance only from the **Institutional Bio-Safety Committee (IBSC)** of concerned institution.
  - IBSC has a **nominee from Department of Biotechnology**.
  - GM crops require clearance from the **Genetic Engineering Appraisal Committee of the Ministry of Environment, Forest, and Climate Change**.

## 8. EINSTEIN CROSS

### Context:

- Astronomers have discovered a rare example of an “Einstein cross,” a phenomenon predicted by **Albert Einstein in 1915**.
- In this case, a **foreground elliptical galaxy**, located around **6 billion light-years from Earth**, has **distorted and split a beam of light from a background galaxy about 11 billion light-years away**.
- The result is a **pattern of four blue smudges** around the **orange glow of the foreground galaxy**.
- The background light likely **originates from a quasar, a young galaxy with a supermassive black hole at its core emitting intense radiation**

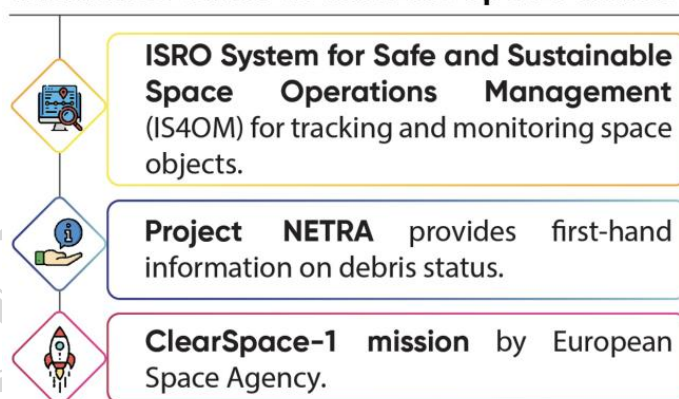


Einstein’s theory of general relativity **explains how massive objects warp space-time, and the strong gravity of the foreground galaxy curved the light from the quasar**, creating the Einstein cross pattern.

## 9. SPACE DEBRIS

- Indian Space Research Organisation (ISRO) rocket debris found on **Australian shore**.
- Space debris encompasses both **natural (meteoroid)** and **artificial (man-made)** particles. Meteoroids are in orbit about the sun, while **most artificial debris is in orbit about the Earth**.
  - **Russia, followed by USA, China and France** are top contributor to space debris.
  - In 2021, a large chunk of a 25-tonne Chinese rocket fell into Indian Ocean.
- **Impact of Space debris**
  - **Threat to marine life, and a source of pollution.**
  - **Thousands of discarded launch vehicles** float around in space, **risking collision** with satellites or space station
- **Regulations governing space debris**
  - **Convention on International Liability for Damage Caused by Space Objects 1972** (Liability Convention) deals with **damage caused by space objects to other space assets, and by falling objects on earth**.
    - ✓ **Convention provides for procedures** for settlement of claims for damages.
    - ✓ As of 1st January 2023, **98 States (including India)** have ratified it.
    - ✓ It was adopted to **reinforce the framework set by Outer Space Treaty (OST) 1967**.
  - **OST** governs activities of states in peaceful **exploration of outer space, including moon and other celestial bodies**.

### Initiatives taken to address Space debris



## 10. ISRAELI SPIKE NON-LINE OF SIGHT (NLOS) ANTI-TANK GUIDED MISSILES

### Context:

- The Indian Air Force (IAF) has **acquired Israeli Spike Non- Line of Sight (NLOS) anti-tank guided missiles**, capable of **hitting targets up to 30 km away**.
- It is developed and designed by Israeli company Rafael Advanced Defense Systems

### Features:

- Lightweight, **fire-and-forget tactical precision-guided missiles** using electro-optical and fibre-optic technologies.

- The missiles will be integrated with Russian-origin **Mi-17V5 helicopters**, enhancing the **IAF's ability to engage hidden targets** behind mountains or hills.

**Significance:**

- The delivery of these missiles follows the IAF's interest in them due to **concerns over border tensions, particularly near the Line of Actual Control (LAC)** with China.
- The IAF aims to bolster its **arsenal through indigenous production and foreign acquisitions** to address security threats, as demonstrated by this acquisition of long-range anti-tank missiles

## 11. NEERAKSHI

**Context:**

India has introduced an **innovative Autonomous Underwater Vehicle (AUV)** named '**Neerakshi**' designed for mine detection (currently in the prototype stage) **Developed by:** Garden Reach Shipbuilders and Engineers (GRSE) Ltd and AEPL, an MSME entity.

**Features:** 2.1-meter-long cylindrical AUV, weighing around 45 kg, can perform various tasks such as mine detection, disposal, and underwater surveys.

It has an **endurance of four hours and a depth of up to 300 meters**, making it a versatile tool for ensuring coastal safety and protection.



## 12. CHROMODOMAIN HELICASE DNA BINDING PROTEIN 1 LIKE (CHD1L)

- A study has revealed that **CHD1L gene variant is likely to control Human Immunodeficiency Virus (HIV).**
- A **variant of CHD1L gene** is specifically present in **African population**
- .
- **African population.**
  - **CHD1L gene variant** has been linked to **reduced viral load (amount of HIV in blood)** of HIV-1 (most common).
  - The gene variant **CHD1L is found on chromosome1.**
  - People carrying this variant in their body **had lower risk of spreading the virus and also had slowed progress of their own illness.**

### 13. BELEM DECLARATION

#### Context:

- Leaders from **eight Amazonian countries, including Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela**, were **unable to reach an agreement** on the protection of the Amazon rainforest during the Amazon Summit organized by the **Amazon Cooperation Treaty Organization (ACTO)**.
  - The goal proposed by Colombia to **protect 80% of the Amazon from deforestation and degradation by 2025** did not garner unanimous support.
- The leaders focused **on initiating a dialogue about the sustainability of mining and fossil fuel-related activities but failed to commit to stopping oil drilling in the region.**
- This lack of consensus has implications for global biodiversity goals, including those set under the Convention on Biological Diversity's Global Biodiversity Framework in 2022, **where countries agreed to protect 30% of land and sea by 2030.**

#### About Belem Declaration:

- The Belem Declaration is a statement released during the **Amazon Summit**, involving leaders from Amazon countries.
- It emphasizes the **importance of Indigenous knowledge** for biodiversity conservation and calls for Indigenous Peoples' participation in decision-making.
- The declaration promotes **sustainable forest use and diverse economic solutions**, addressing concerns about deforestation and degradation in the Amazon region.
- It also underlines the need to **protect land rights to prevent deforestation** and preserve biodiversity within Indigenous territories.

### 14. BHU-VISION (KRISHI-RASTAA) PLATFORM

- It is an **Internet of Things (IoT) based automated soil testing and agronomy advisory platform**, which can **conduct 12 key soil parameter tests** (like pH value, electrical conductivity etc).
- It can **immediately send the summary of results in a soil health card** to mobile devices and **will help to quickly identify the deficiencies.**
- **Developed by:** ICAR-IIRR (Indian Council of Agricultural Research - Indian Institute of Rice Research), Hyderabad and KrishiTantra (an Agri-tech start-up).

## 15. AROMATIC RICE ‘MUSHKBUDJI’



### Context:

- An aromatic rice named “Mushkbudji” from Kashmir received a Geographical Indication (GI) Tag recently.
- Mushkbudji rice, which was granted the GI tag along with eight other products from Jammu and Kashmir, is known for its short, bold grains and rich aroma.
- In the past, the consumption of this aromatic rice was restricted to special events due to its limited availability and high cost.
- The government’s efforts to revive this rice variety in 2007 after its decline in the 1970s due to blast disease have also contributed to its resurgence. More farmers are now drawn to cultivate this unique and fragrant rice variety due to its promising qualities and potential for higher income.

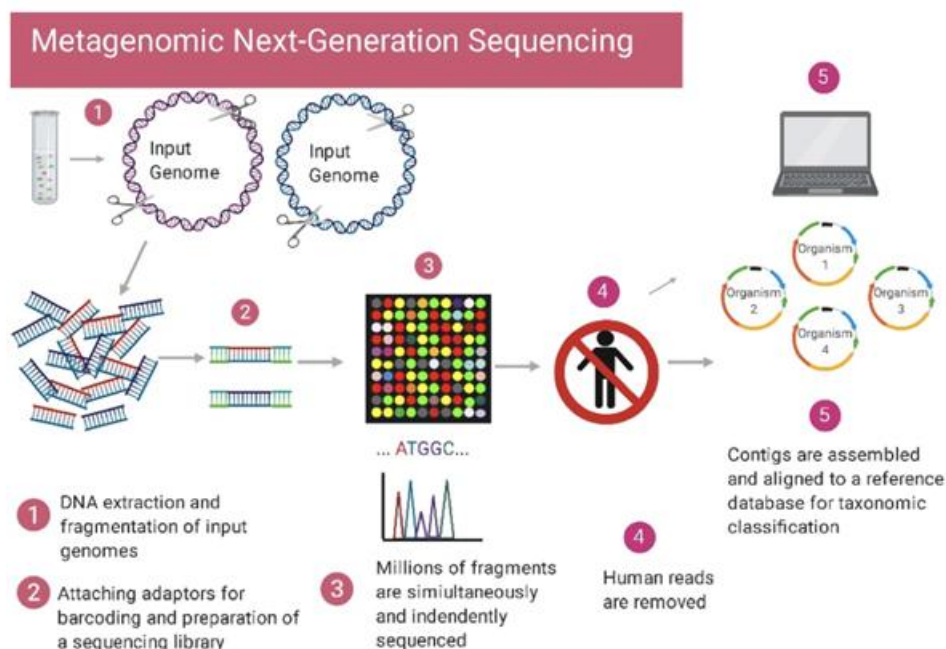
## 16. METAGENOME SEQUENCING

### Context:

- The pandemic led to the development of rapid and unbiased genome sequencing techniques for pathogen surveillance.
- The metagenomic approach, used to directly sequence patient samples without prior knowledge of the infectious agent, quickly identified SARS-CoV-2 as the cause of COVID-19.
- This genomic approach, termed metagenomics, has revolutionized pathogen identification and surveillance. The widespread adoption of genome sequencing techniques birthed numerous technologies, including the CovidSeq assay, which facilitated national and international genome surveillance efforts.
- Genome sequencing has also been employed to track avian influenza, a prime candidate for genomic surveillance due to its potential for rapid spread and impact on both animals and humans.

## What is Metagenome sequencing?

- Metagenome sequencing is a technique that directly analyzes genetic material from samples without prior knowledge of the organisms present. It's used to identify and study the entire genetic diversity of microbial communities, enabling the detection of known and unknown pathogens in a high-throughput manner.



## 17. INDIA'S FIRST DRONE COMMON TESTING CENTRE

### Context:

- Tamil Nadu** is establishing the country's first **Common Testing Centre for Unmanned Aerial Systems** (drones).
- The initiative is **led by the Tamil Nadu Industrial Development Corporation (TIDCO)** as part of the **TN Defence Industrial Corridor**, aimed at **nurturing the aerospace and defence industry ecosystem**.
- The lack of a Common Testing Centre** has been a barrier for organizations in this sector. TIDCO has initiated the setup of such testing centres **under the Centre's Defence Testing Infrastructure Scheme**.
- This initiative **aligns with Tamil Nadu's commitment to fostering a robust defence and aerospace manufacturing ecosystem**, attracting investors and contributing to the self-reliance of the country in the aerospace and defence sector.

## 18. FIRST-EVER GLOBAL SUMMIT ON TRADITIONAL MEDICINE

### Context:

- The **World Health Organization (WHO)**, in collaboration with the Ministry of Ayush, is organizing a **unique global summit on Traditional Medicine**.
- This unprecedented event will **bring together experts, practitioners, and dignitaries to explore the latest scientific advancements and evidence-based knowledge in the field of traditional medicine**.

- This summit **highlights the strides India has made in blending traditional practices with contemporary approaches**, ultimately showing a path toward achieving universal health coverage through traditional medicine systems.
- The summit will also feature an **exhibition showcasing traditional medicine systems from around the world, including the Ministry of Ayush's contributions**.
- This exhibition will spotlight the **relationship between Traditional Medicine and the natural environment** and demonstrate scientific and technological advancements led by various WHO regional centres and the Ministry of Ayush.
- The **summit signifies a significant step in the realm of traditional medicine**, especially following the **establishment of the WHO Global Centre for Traditional Medicine in 2022** with the support of the Indian Government. This collaborative initiative **will play a pivotal role in shaping global health policies related to traditional medicine research, practices, and public health**.

## 19. STEREO (SOLAR TERRESTRIAL RELATIONS OBSERVATORY) MISSION

### Context:

- The **STEREO (Solar TERrestrial RELations Observatory)** mission launched **twin spacecraft, STEREO-A and STEREO-B**, in 2006, **to study the Sun**.
- This mission achieved several milestones, **including capturing the Sun as a complete sphere for the first time by reaching a 180-degree separation in their orbits**.
- STEREO-A's recent approach to Earth **offers a unique opportunity for scientific observations**. By combining its views with other spacecraft, **including the Solar and Heliospheric Observatory (SOHO) and Solar Dynamics Observatory (SDO)**, STEREO-A will provide 3D views of the Sun.
- This stereoscopic vision allows scientists to **gain depth perception and explore features like active regions and coronal loops in unprecedented detail**.
- STEREO-A's passage through Earth's vicinity also **allows for an in-depth study of solar eruptions, known as coronal mass ejections (CMEs), which can impact Earth's technology**.
- This approach provides **multipoint measurements to understand the evolution of CMEs' magnetic fields**. Additionally, as solar activity increases towards the predicted solar maximum in 2025, STEREO-A's observations will shed light on the **changes in the Sun's behaviour during different phases of its cycle**.

## 20. ADITYA-L1

### Context:

India's first solar mission, **Aditya-L1**, intended for launch by the end of August or early September, has arrived at the Sriharikota spaceport.

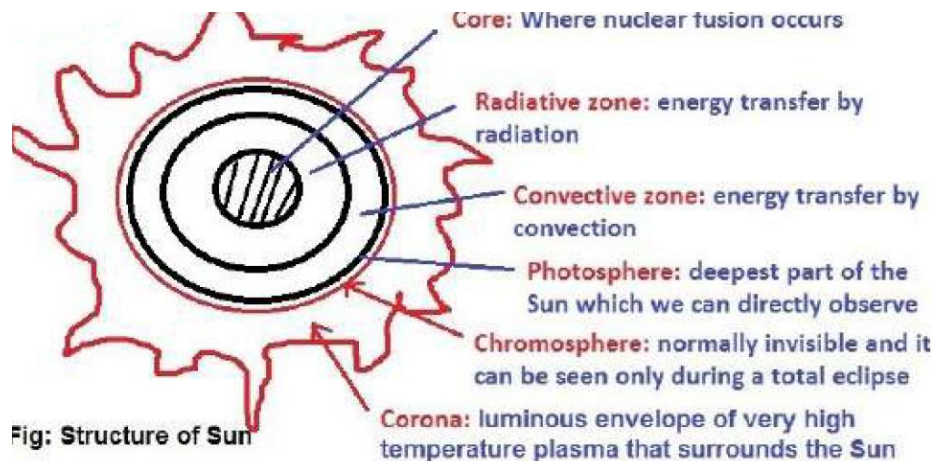
The Aditya-L1 mission will be launched to the L1 orbit (which is the first Lagrangian point of the Sun-Earth system)

- Aditya-L1 is the **first Indian space mission** to observe the Sun and the solar corona
- **L1 orbit allows** Aditya-L1 to look at the Sun continuously

- It will be launched aboard a **PSLV-XL launch vehicle**

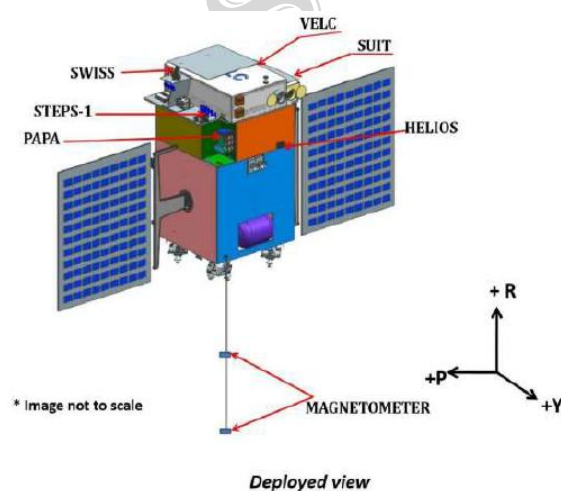
#### The objective of the mission:

To study solar upper **atmospheric (chromosphere and corona) dynamics** and understand the physics of the solar corona and its heating mechanism.



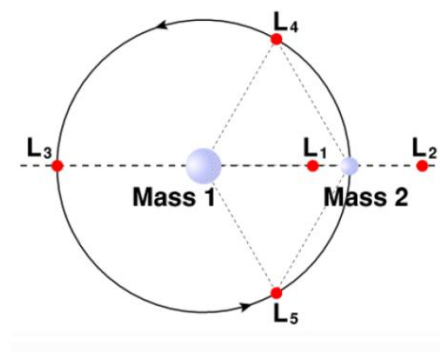
#### Payloads:

- Aditya-L1 has seven payloads in total, of which the primary payload is the **Visible Emission Line Coronagraph (VELC)**.
- VELC is a solar coronagraph capable of simultaneous **imaging, spectroscopy and spectro-polarimetry**
- **Significance:** No other solar coronagraph in space has the ability to image the solar corona as close to the solar disk as VELC can. It can image it as close to 1.05 times the solar radius.



#### About Lagrange points:

The **Lagrange points** are points of equilibrium for small mass objects under the influence of two massive orbiting bodies. At Lagrange points, the **gravitational pull of two large masses precisely equals the centripetal force** required for a small object to move with them. These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.



## 21. INS 'VINDHYAGIRI'

### Context:

- The **President of India**, Smt Droupadi Murmu, attended the launch ceremony of the Vindhyagiri, the **sixth ship of Project 17A** of the Indian Navy at Garden Reach Shipbuilders Engineers Limited in Kolkata.
- The President highlighted that this **launch signifies progress in boosting India's maritime capabilities and contributes to the goal of Atmanirbhar Bharat (self-reliant India) through domestic shipbuilding.**
- Project 17A showcases India's commitment to **self-sufficiency and technological advancement, showcasing indigenous innovation in cutting-edge technology.**
- In terms of security, the **President highlighted the multifaceted nature of security challenges in the Indian Ocean Region and the wider Indo-Pacific.** She stressed the need for the **Navy to proactively address these security threats to maintain stability and safety in these regions.**



## 22. DEMON PARTICLE

### Context:

- Researchers at the University of Illinois have discovered a **massless particle**, often referred to as a "**demon particle**," which could pave the way for the **development of superconductors capable of functioning at room temperature.**
- Superconductors, which can **conduct electricity without resistance**, currently require extremely low temperatures, **often below 100 degrees Fahrenheit.**
- This new discovery could **potentially lead to the creation of superconductors that work at room temperature**, revolutionizing various **fields, including computing and medical imaging.**

- The team identified the potential existence of the demon particle while **investigating the properties of the metal strontium ruthenate**, which is similar to high-temperature superconductors.

#### About Demon Particle:

- The prediction of the demon particle was first made by **theoretical physicist David Pines in 1956**. Pines theorized that electrons passing through a solid would exhibit unique behaviours.
- **This particular particle is intriguing because it lacks mass, making it possible for it to exist and form plasmons (collective units of electrons) at room temperature**, where larger particles wouldn't typically form plasmons.

#### Why it is named a 'Demon' particle?

- This name was chosen because the particle's properties, including being massless, chargeless, and not interacting with light, seemed to **defy conventional understanding**, much like a mythical or supernatural entity. The term "demon" was used metaphorically to convey the **unusual and counterintuitive nature of this theoretical particle**.

### 23. NAMOH 108

#### Context:

- The Lucknow-based **CSIR-NBRI (National Botanical Research Institute)** has reportedly developed a **new variety of lotus flowers called 'Namoh 108,'** characterized by **having 108 petals**.
- The name "Namoh 108" is a combination of the **religious significance of the 'lotus flower' and the digit '108,'** which holds importance in Hinduism.

#### Features of Namoh 108:

- The lotus variety flowers from March to December and is rich in nutrients.
- It's the first lotus variety in India to have its **genome completely sequenced for its characteristics**.
- The release also included products derived from the lotus, **such as apparel made from lotus fibre and a perfume called 'Frotus' extracted from lotus flowers**.



## 24. 1ST HYDROGEN BUS IN LEH

### Context:

India's largest power producer, NTPC Ltd, has begun a **trial run of its first hydrogen bus in Leh** as part of the **Green Hydrogen Mobility Project**.

### The programme:

- This initiative aims to achieve **carbon-neutral status for Ladakh**.
- NTPC plans to establish a **hydrogen fuelling station**, and a solar plant, and deploy five fuel cell buses **for intracity routes in Leh**. Notably, these buses are designed to operate in **sub-zero temperatures and high-altitude conditions**.
- **NTPC Limited** (founded 1975; HQ: New Delhi; Maharatna Company) is a major Indian Central Public Sector Undertaking owned by the Ministry of Power and the Indian Government.

## 25. 23RD AUGUST WILL BE CELEBRATED AS THE NATIONAL SPACE DAY

### Context:

The Prime Minister visited the **ISRO Telemetry Tracking and Command Network (ISTRAC)** in Bengaluru and **addressed the ISRO team about the success of Chandrayaan-3**.

### Key Highlights from PM speech:

- The Prime Minister celebrated the achievement of Chandrayaan-3 as a **significant scientific milestone that demonstrates India's prowess in space exploration**.
- He also announced that the point of **Chandrayaan-3's landing would be known as 'Shiv Shakti'**.
- He acknowledged the **contribution of women scientists** and referred to the **Chandrayaan-2 landing site as 'Tiranga'**, highlighting its significance in **inspiring efforts and overcoming failures**.
- He announced that **August 23rd will be observed as 'National Space Day'** to celebrate science, technology, and innovation.
- He emphasized the **role of space technology in governance, linking it to initiatives like Swachh Bharat Abhiyan, education, healthcare, and disaster management**. He encouraged ISRO to organize hackathons on **'Space Technology in Governance'** to make governance more effective.

## 26. NABHMITRA

### Context:

- **ISRO's Space Applications Centre in Ahmedabad** has developed a device called **'Nabhmitra'**, which has been successfully tested.
- This device is aimed at **enhancing the safety of fishermen**.
- It operates through **satellite-based communication and enables two-way messaging between boats at sea and authorities on land**.
- The system can convey **weather alerts, cyclone warnings, and other information in the local language**.

- In cases of emergencies like **boat accidents or fires**, **fishermen can activate the device to alert the control centre**. The control centre receives the boat's location and the crew onboard gets a response from the control centre.
- Additionally, the device provides **details about shipping routes, maritime boundaries, and fishing areas**.

## 27. BENGALURU: INDIA'S FIRST 3D-PRINTED POST OFFICE

- It has been inaugurated in **Bengaluru's Cambridge Layout**.
- The post office was constructed in just 43 days, ahead of schedule, with technological support from IIT Madras and guidance from **Professor Manu Santhanam**.
- 3D printing, also known as additive manufacturing, involves creating **three-dimensional objects** layer by layer using a computer-created design. This process is used in various industries, and its popularity has grown due to advancements that have **reduced errors and increased efficiency**.
- The technology has been used in sectors **like automotive, aerospace, and healthcare**, enabling the creation of objects ranging from simple items to complex moving parts.
- **Usage:** The example can be used in the S&T question on Additive Manufacturing