

**GS | SCORE PLS**

**PERSONALISED LEARNING SYSTEM**

**MONTHLY  
CURRENT  
AFFAIRS  
MAGAZINE**



## – **Disclaimer** –

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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(NOVEMBER, 2023)

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## WESTERN ODISHA DEMANDING SEPARATE KOSHAL STATE

**Context:** The activists have been pressing for a separate Koshal state alleging neglect of the region by the Odisha government in various fields.

### Historical Background of Koshala:

- ◆ Dakshinkoshalis part of kingdom of **lord Raama**, Later on it was given to his son Kush.
- ◆ Samudragupta in the 4th century defeated King **Mahendra of Koshala**, the kingdom that included Sambalpur.
- ◆ During the 5th and 6th centuries Sambalpur came under the rule of **Sarbhapuriyas**.
- ◆ Towards the 7th century it passed in to the hands of **Panduvansi king Trivaradeva**.
- ◆ Towards the close of 9th century king **Janmajaya I Mahabhavagupta** extended his empire which comprised the modern districts of **Sambalpur and Bolangir**.
- ◆ After the British occupied Orissa and bitterness between the British and Marathas ripened, the former found a convenient route via Sambalpur and annihilated the
- ◆ Sambalpur was occupied by the British on **2nd January, 1804**. Finally it passed on to the **British in 1817**.

### Causes for demand:

- ◆ The modern orissa is consisting of three major area **kalinga, utkal and koshal**.
- ◆ The **Kosal state movement** is an effort by people of the Western Odisha region of India to secede from the state of Odisha.
- ◆ Prolonged underdevelopment and backwardness of this region.
- ◆ In the backward districts of **Kosal region—Boudh, Sonepur, Balangir and Nuapada** more than 60% of people live below the poverty line.
- ◆ Recurrent droughts, inadequate irrigation and uneven land distribution have made Kosal a "hunger belt" in Odisha since Independence.
- ◆ The region also experiences mining and environmental degradation and tribal displacement.
- ◆ The major language of the area is Sambalpuri. It is variously seen either as a dialect of Odia or as a language in its own right.

### Names of Odisha

Utkala	According to Mahabharata Utkala was a part of Kalinga.
Mahakantara	This name was found during Gupta period.
Udra	It was the kingdom which included coastal region of Odisha.
Odra	This name was given after Odra tribe.
Oddyana	This name was mentioned in Buddhist texts.

### Constitutional Provisions for States:

- ◆ **Article 2 is titled as:** Admission and establishment of new states.
- ◆ **Article 3 is titled as:** Formation of new states and alteration of areas, boundaries or names of existing states.
- ◆ **Article 4 is titled as:** Laws made under Articles 2 and 3 to provide for the amendment of the First and the Fourth Schedules and supplemental, incidental and consequential matters. I.e. a number of seats allotted in the Rajya Sabha for each state.
- ◆ Constitution will not treat any such law altering existing States or creating a new State, as the amendment.



## SOCIAL JUSTICE, SEXUAL EDUCATION, THE NEED OF OUR TIMES

**Context:** When education is a right, it is only natural that sexual education is a part of it, which will transform gender relationships in society.

### Background:

- ◆ Caste and gender are the **deepest social cleavages** in our society. The intersection of these two social identities plays havoc with the lives of adolescents/young adults in Indian schools and colleges.
- ◆ **Caste conflicts:** There are frequent reports in the media on the **caste conflicts among adolescents/young adults** as well as consensual sexual relationships between adolescents/young adults of different castes inviting criminal penalties and action.
- ◆ Education about social change and sexuality are closely related. Training young minds in critical thinking and social justice is essential to address this issue and to create a healthy society.



## Education for democracy

- ◆ In a hierarchical society, it is hard to create well-functioning democratic institutions based on equal rights for everyone. In the name of celebrating tradition, an emphasis on **racial purity and a protection of cultural values** only leads to the majority/powerful being dominant and aggressive towards the weak.
- ◆ Electoral democracy encourages and establishes affirmative action of distributing opportunities for the depressed communities.
- ◆ The state even **criminalises caste and gender-based discrimination**.
  - ▶ In reality, this has **little effect on destabilising unequal social codes and discrimination** in practice.
  - ▶ The state as an organisation reflects the structure of society and thus makes the rights of the depressed difficult to realise.
  - ▶ The idea of **citizenship in a democratic society** demands the empathetic understanding of the lives of fellow citizens and critical thinking about one's own life.
  - ▶ Enhancing empathetic understanding of others in a modern society that contains many divisions is the only hope of sustaining democratic institutions.
  - ▶ **Education for critical thinking** requires challenging our own lives, beliefs and faith and how they affect the lives of others in a complex world. This is what education is supposed to aim and achieve.
- ◆ **Self-help for children:** Parents and the elderly try to keep children comfortable and in the process, children learn that they can command others. On the contrary we should teach them that self-help and at the same time seeking help is not a sign of weakness.
  - ▶ Rather, weakness is something to be recognized as inevitable. When seeking help is not a shame, helping is a responsibility. That makes us more humane and sociable.
- ◆ Social and economic

settings: As a child enters adolescence, he realizes that vulnerability is not only because of one's physical frailties but also because of social and economic settings in life.

- ▶ Recognizing this aspect of vulnerability is a key step in attaining social justice.
- ◆ **Controlling Weak:** Education should remove the **narcissistic tendencies** that we may develop in our desire to control others, particularly women and the weak. Thus, children develop compassion and raise a supporting and critical voice for the weak.
- ◆ **Active Learning:** Socratic active learning is important in this education venture. Humanities and arts provide scope for active learning. Artists move beyond the mental confines of ideologies. Humanities give us the intellectual training to accept ideas and also search for alternative ideas.
- ◆ **Reasonable disagreements:** Rigorous training in logical reasoning and critical thinking creates the vision that lives in a democracy are full of reasonable disagreements among citizens of different religions, cultures, wealth, class, physical impairment, gender and sexuality.
- ◆ **Role of Teachers:** Teachers should understand and accept that social justice education is essential for a well-functioning democracy. Teacher absenteeism, blaming children for a lack of learning potential, discouraging children and physically abusing them are all outcomes of this lack of faith in social justice education.

## A different yet vital education

- ◆ **Sexual education:** It is also an important aspect of social justice education. More than providing knowledge about healthy sexual development and sex education, sexual education prepares students to respect gender identities and interpersonal relationships.



- ◆ **Sexual abuse:** The importance of consent in sexual intercourse and a respect for personal boundaries, as well as the ability to stop perpetrators of sexual abuse are important aspects of sexuality education.
- ◆ **Right to access sexual education:** In a recent judgment, the **Calcutta High Court** said that children have a right to access sexual education and sexual and reproductive health services. When education is a right, it is but natural that sexual education is a part of it.
- ◆ **Role of Sexual Education:** Research has shown that sexual education delays the time of the first sexual intercourse, reduces its frequency and curbs sexual abuse and risky sexual behaviour.
  - ▶ Sexual education **trains students to understand the social constructs of gender** and to respect others' sexual preferences. In this perspective it has a social justice content as boys and girls treat each other with respect and also develop a deeper understanding of other gender identities (LGBTQA+).
  - ▶ **Sexual education in school** will transform gender relationships at home and in society, and will be the most desirable outcome.

### Way Forward: Need for government support

- ◆ **Government Support:** As in the case of social justice education, sexual education requires a **strong impetus from the government**.
- ◆ Just as there is a questioning of caste and social hierarchy through social justice education, it is essential that through sexual education, children are given a perceptive understanding of gender relationship stereotypes, guard against abusive and risky sexual relationships.
- ◆ Though sex education is a small part of the general school education curriculum, sexual education has rarely been taught in Indian schools.
- ◆ The **Adolescent Reproductive and Sexual Health Strategy (ARSH) (2005)** and the are two recent initiatives by the Union government.

### Recent Debates:

- ◆ While courts in India are debating the **criminalising aspect of consensual sexual relationships of adolescents**, the education sector should inform the legal aspects of sexual relationships as well.
- ◆ There is **no dearth for curriculum design, teaching aids and pedagogy** for sexual education.
- ◆ Many **international and national bodies have created curricula**, reading materials and teaching aids.
- ◆ All that is needed is to **train teachers and implement**

**sexual education** as a **compulsory part** of the school curriculum.

### Committee Formulation:

- ◆ The Government of Tamil Nadu has instituted a committee (with Justice K. Chandru as Chairperson) to recommend measures to remove discriminations based on caste and community in schools and colleges.



## FEMICIDES AT 20-YEAR PEAK ACROSS THE GLOBE

**Context:** In India, Dowry related reasons are still prevalent as a main cause of Femicide.

### What does Femicide means?

- ◆ The issue of women being killed by their partners is a serious and concerning problem that affects many individuals and communities around the world, and they are increasing at an alarming rate in India.
- ◆ This type of violence, which is often referred to as intimate partner **homicide or femicide**, is a form of gender-based violence and a violation of women's human rights.

### Do you know?

Every **11 minutes**, a woman or girl falls prey to the hands of an **intimate partner or family member** and the increasing rate of femicide in India is an alarming trend that demands urgent attention and action.

- ◆ Research shows that women are more likely to be killed by their intimate partners than men and that such violence is often the culmination of a pattern of abuse that includes **emotional, physical, and sexual violence**.

### Stance of Femicide in India:

- ◆ According to the NCRB report, of around **19 metropolitan** cities including Ahmedabad, Bengaluru, Chennai, Coimbatore, Delhi City, Ghaziabad, Hyderabad, Jaipur, Indore, Kanpur, Kochi, Kolkata, Kozhikode, Lucknow, Mumbai, Nagpur, Patna, Pune and Surat, 179 women were killed aged between 18-30 years, while 149 women were murdered in the year 2021 ageing between 30-45 years.
- ◆ The report graph shows a total of **7739 female adult victims** being murdered in the year 2021 while a total of **8405 female victims** were murdered including children.

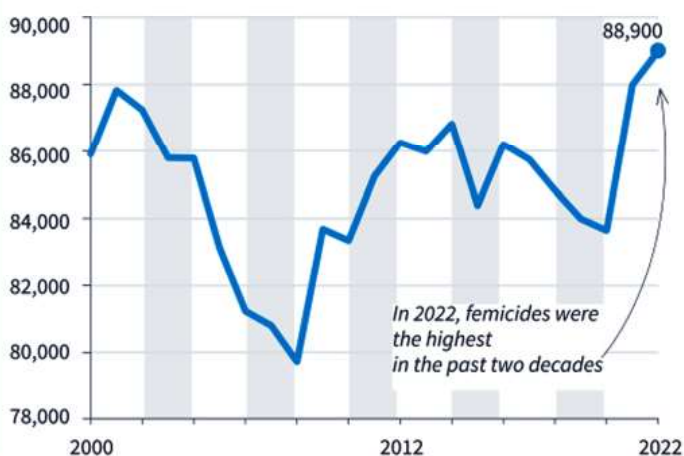
- ◆ The crime against women graph saw a surge in cases in the year 2021 with 428278 cases registered compared to 405326 cases and 371503 cases registered in the year 2019 and 2020 respectively.
- ◆ **In the year 2021;**
  - ▶ 284 cases were registered under murder with **rape/gang rape**,
  - ▶ 6753 cases under **dowry deaths**,
  - ▶ 5292 cases under abetment to **suicide of women**,
  - ▶ 136234 cases under **cruelty by husband or relatives** and
  - ▶ 507 cases under the protection of women from **domestic violence act**.

## Women in the cross hairs

The data for the charts were sourced from the report titled, "Gender-related killings of women and girls (femicide/feminicide)" published by the United Nations Office on Drugs and Crime (UNODC) and UN Women



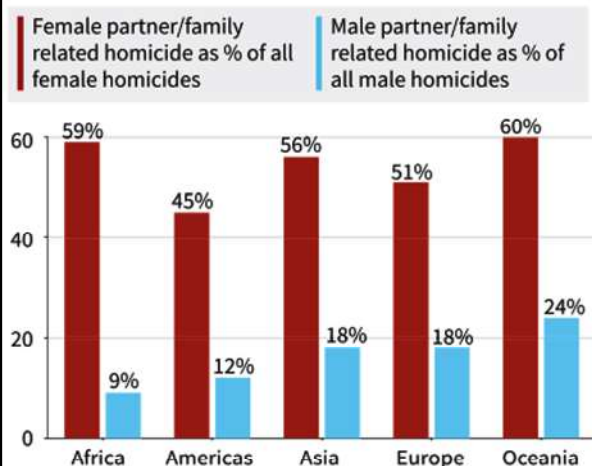
**Chart 1:** The chart shows the year-wise intentional murder of women/girls across the globe for gender-related reasons



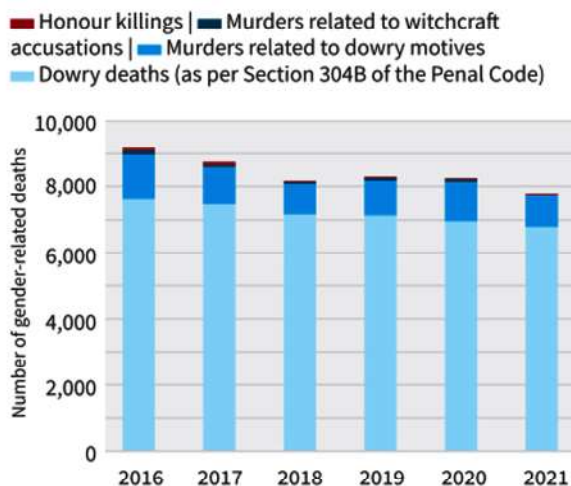
**Chart 2:** The chart shows male and female share of homicide victims. In general, victims of homicides worldwide tend to be men or boys



**Chart 4:** The chart shows the continent-wise split of the share of intimate partner/family-related homicides among all female and male homicides



**Chart 5:** The chart shows the number of gender-related deaths in India between 2016-2021 and the reasons behind it





### Factors contributing to Femicide:

- ◆ There are many factors that contribute to this problem, including;
  - ▶ Gender inequality,
  - ▶ Patriarchal norms and values, and
  - ▶ Lack of access to resources and
  - ▶ Support services for survivors.

### Concerns Associated:

- ◆ **Unclear definition in law:** The definition of femicide is unclear in India and in other parts of the globe, as gender relations and culture make for its different forms globally.
- ◆ In India, it exists as honour crimes, dowry murders, murders of women for marrying outside of caste and religion, amniocentesis tests and abortion of female foetuses and death of girls by discrimination and abuse, etc.
- ◆ **Lack of consistency in India's National Crime Records Bureau's data collection** and classification over the years, making the comparability of data over years challenging.
- ◆ **The lack of accountability and transparency** is especially concerning, given the alarming rate at which women in India face violence, harassment, and discrimination.

### Suggestive Measures:

- ◆ **Consolidation and Identification of Femicide Cases:** There needs to be an exercise involving **government representatives, scholars and activists** to understand how naming and proper **categorising of data** can help us in responding to homicides of women effectively in terms of preventive and corrective interventions.
  - ▶ The Crime in India bulletin has such categories as **"homicides", "murder with rape", "dowry deaths", "female foeticide", "female infanticide" and "suicide"** that need for instance to be consolidated in the case of women and girl victims to understand how many women and girls are being murdered or die due to unnatural causes.
  - ▶ Involve initiatives such as education and awareness-raising campaigns, stricter laws and law enforcement to hold perpetrators accountable, and increased access to support services for survivors.

## 11 LAKH CHILDREN IN INDIA MISSED 1ST MEASLES SHOT IN 2022: WHO

**Context:** Estimated 11 lakh children in India missed their crucial first dose of measles vaccine in 2022.: Report by the World Health Organization and US Centres for Disease Control and Prevention (CDC).



### Global Impact:

- ◆ **Immunization Decline:** Worldwide, measles immunization dropped to its lowest levels since 2008 during the pandemic.: Resulting in an 18% surge in cases and a distressing 43% increase in deaths.
- ◆ **India's Scenario:** India, one of 37 countries experiencing large outbreaks, reported 40,967 measles cases in 2022:- Reflecting the repercussions of vaccination gaps exacerbated by the pandemic.

### Challenges and Vulnerabilities:

- ◆ **Routine Immunization Dip:** Drastic declines in routine immunization occurred during 2020 and 2021 due to the pandemic, particularly affecting peri-urban areas and clusters.
- ◆ **Vulnerability Dynamics:** Missing even a single cohort of vaccination leaves individuals highly susceptible to measles, emphasizing the critical importance of maintaining routine immunization.

### Measles Characteristics and Impact:

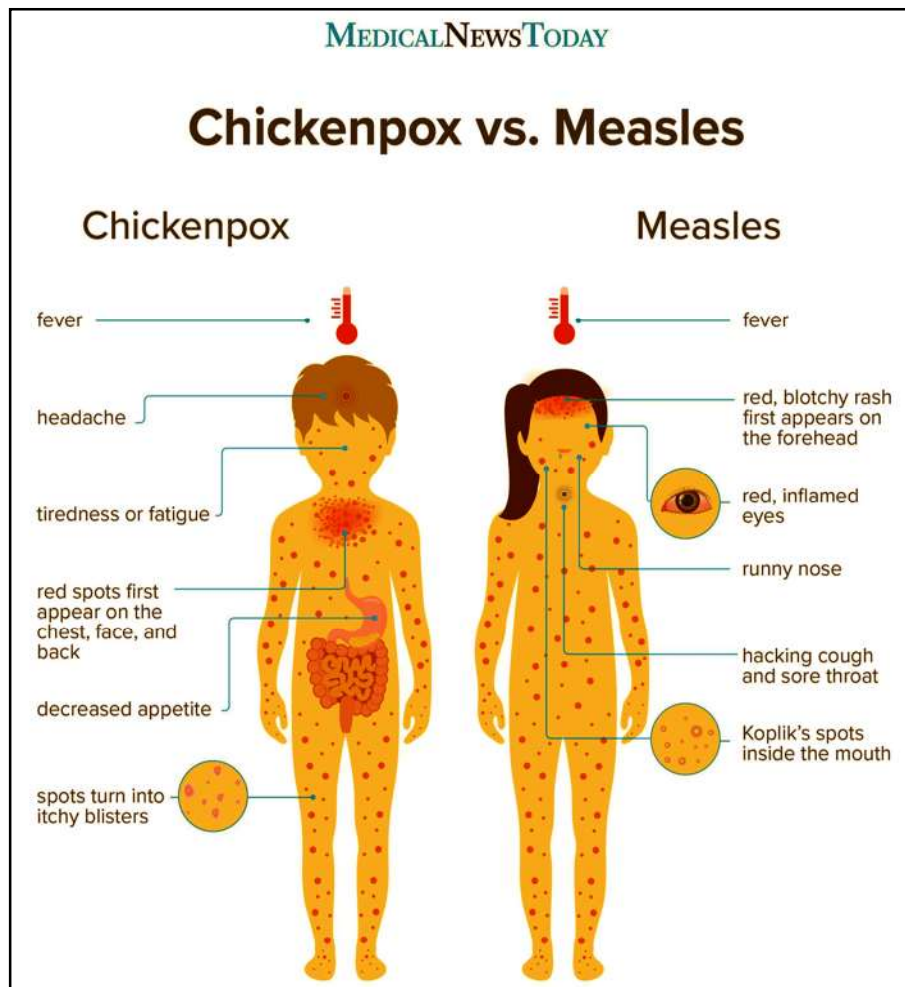
- ◆ **Vaccine Efficacy:** Two doses of the measles vaccine provide 97% protection for life, with a single dose offering weaker protection.
- ◆ **Clinical Manifestations:** Measles typically presents with high fever, cough, runny nose, and red rashes. Severe complications, including brain swelling, pneumonia, breathing difficulties, and severe diarrhoea, can lead to fatalities.

### Global Response and Sensitivity in India:

- ◆ **Global Challenges:** Over 33 million children globally missed either one or both doses of the measles vaccine in 2022.
- ◆ **India's Performance:** Despite challenges, India demonstrated commendable sensitivity in measles surveillance, outperforming global benchmarks by three to four times.

### Regional Outbreaks and Government Response:

- ◆ **Affected States:** Measles cases surged in five Indian states - Bihar, Gujarat, Haryana, Jharkhand, and Maharashtra.
- ◆ **Government Intervention:** Maharashtra, reporting 13 deaths in 2022, initiated an outbreak response immunization drive, vaccinating 13 lakh children between nine months and 15 years from affected states and neighbouring regions between November 2022 and May 2023.
- ◆ The measles outbreaks underscore the fragility of global health systems during crises, emphasizing the need for sustained immunization efforts to prevent the resurgence of vaccine-preventable diseases.



### What is Measles?

A highly contagious viral infection caused by the measles virus (MeV). It primarily affects children, but individuals of any age can contract the virus.

- ◆ **Transmission:** Measles spreads through respiratory droplets and is highly contagious, making it one of the most infectious diseases known.
- ◆ **Symptoms:**
  - ▶ **Early Symptoms:** High fever, cough, runny nose, and red, watery eyes.
  - ▶ **Later Symptoms:** A characteristic red rash that starts on the face and spreads.
- ◆ **Complications:**
  - ▶ **Common:** Diarrhea, ear infections.
  - ▶ **Severe:** Pneumonia, encephalitis (brain swelling), and, in rare cases, death.

### Impact of Measles:

- ◆ **Health Impact:**
  - ▶ **Severity:** While most recover fully, measles can be severe, especially in malnourished children or those with weakened immune systems.

### CASE COUNT IN FOUR YEARS

Year	Measles	Rubella
2022	1,804	175
2021	649	142
2020	1,251	514
2019	2,842	1,868

**Vax details**

- ▶ Three doses of MR vaccine is the best way to combat the infection
- ▶ First dose in nine months
- ▶ Second dose between 15 and 18 months
- ▶ Third dose between four and five years
- ▶ The roll-out on January 9 is aimed at covering all kids between the ages of nine months and 15 years, even if they have completed the vaccination

- ▶ **Fatalities:** Complications can lead to fatalities, particularly in populations with limited access to healthcare.

#### ◆ **Economic Impact:**

- ▶ The economic burden includes healthcare costs for treatment and complications.
- ▶ **Productivity Loss**-Parents may miss work to care for sick children.

#### ◆ **Public Health Impact:**

- ▶ Measles is highly contagious, leading to outbreaks, especially in communities with low vaccination rates.
- ▶ High vaccination rates create herd immunity, protecting vulnerable populations.

### Prevention and Control:

- ◆ **Vaccination:** The measles vaccine is highly effective and is usually administered in combination with vaccines for mumps and rubella (MMR).
- ◆ **Routine Immunization:** Routine immunization programs aim to achieve high population immunity and prevent outbreaks.

#### Elimination target:

THE REPORT comes at a critical juncture as India, along with other countries in the WHO South-East Asia Region, adopted the goal of measles elimination by 2023. While the government has tried to catch up after the pandemic with Indradhanush to achieve the elimination target, India would need to vaccinate 95% of the children

## INDIAN MINIATURE PAINTING TRADITION

**Context:** The Indian art historian BrijinderNathGoswamy, best known for his scholarship on Indian miniature painting tradition, passed away at 90.

### Who was BrijinderNathGoswamy?

- ◆ A Padma Bhushan recipient and former IAS officer, he first came under the spotlight after the publication of his ground-breaking 1968 article, '*Pahari Painting: The Family as the Basis of Style*'.
- ◆ In his piece, he unearthed family lineages of renowned artists who played an essential role in the development and continuation of miniature painting — the revelation was one of his biggest contributions to the history of miniature paintings in India.

### A look at the tradition of Indian miniature painting:

- ◆ Miniature paintings, characterized by their small size and vibrant colours, are intricately crafted handmade artworks.
  - ▶ The term "miniature" originates from "minimum," underscoring their diminutive scale. These artworks employ diverse materials, ranging from paper and palm leaves to wood and marble.
- ◆ The impetus behind the prevalence of miniature paintings can be traced to the religious teachings of Buddha, which included the depiction of his images inscribed on palm leaves.
- ◆ The necessity for these paintings to be compact arose from the need to accommodate them on palm leaves, the medium of their creation. Around 960 A.D., the Chalukya Dynasty kings introduced similar paintings to western India.
- ◆ Beyond their size, these paintings also portrayed religious themes, capturing the essence of spiritual narratives.
- ◆ The surge in the popularity of miniature paintings coincided with the Mughal Empire's expansion, fueled by Akbar's profound interest in this art form.

### Exploring the Tradition of Miniature Painting:

- ◆ **Historical Roots and Evolution:** The intricate art of miniature painting traces its origins back to the Buddhist **Pala dynasty**, flourishing during the 8th to 11th centuries in Bengal and Bihar.



- ▶ Initially, these paintings adorned religious texts, transitioning from palm leaves to paper between the 11th and 13th centuries.



► However, it wasn't until the Mughal Empire's rise in the early 1500s that the tradition gained prominence.

◆ **Mughal Influence and Decline:** Under the patronage of Humayun and his descendants, Mughal miniatures became synonymous with sophistication. These tiny, brightly colored artworks, often no larger than a few square inches, adorned manuscripts and art books.

► The meticulous details, some painted with brushes of a single hair, made them highly esteemed. However, the tradition saw a decline during Aurangzeb's rule, prompting skilled artists to migrate to princely courts in Rajasthan and the Himalayan regions.



◆ **Rise of Pahari Painting:** The shift led to the emergence of Pahari painting in places like Himachal Pradesh, Jammu, Tehri-Garhwal, and Rajasthan. Pahari paintings encompassed both religious and secular subjects, portraying detailed scenes from epics like Mahabharata and Ramayana. Unlike the Mughal court's diverse influences, Pahari paintings retained a distinctive family-based style.

◆ **Deccan Painting:** In the Deccan region between the 16th and 19th centuries, Deccani miniature paintings developed independently after the dissolution of the Bahmani Sultanate in 1520. Drawing inspiration from European, Iranian, and Turkish influences, Deccani paintings illuminated texts from the Holy Quran and

Surahs. Over time, indigenous elements and romantic themes were incorporated into this evolving art form.

**Goswamy's Contribution to Miniature Painting Knowledge Expansion:**

◆ **Family-Centric Styles:** Notably, art historian Goswamy, in a 1968 article focusing on Pahari painting, emphasized that painting styles were not tied to geographical regions but rather to families of painters. Unlike the Mughal court, where styles weren't family-centric, Goswamy's insights illuminated the family networks that shaped the distinctive Pahari style.

◆ **Reconstructing Artist Networks:** Goswamy's contribution extended beyond Pahari painting to encompass artists from various regions. Using a combination of detective work and intuition, he reconstructed entire family networks of renowned Indian miniature painters. By aligning inscriptions on miniatures with pilgrim records from Haridwar, he breathed life into previously obscure artists, giving them names and restoring their identities.

**Analyzing Goswamy's Impact:**

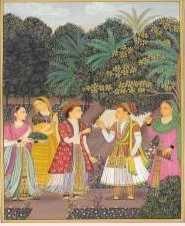



◆ **Historical Restoration:** Goswamy's work didn't merely delve into art; it became a historical restoration project. By piecing together fragments of evidence, he revived the dynasties and identities of artists who had faded into obscurity.

◆ **Recognition of Artistic Lineages:** His research not only identified individual artists but also traced the lineage of artistic families, acknowledging the collective contributions of generations. This recognition added depth and context to the understanding of miniature paintings.

◆ **Preservation of Cultural Heritage:** In restoring names and identities, Goswamy contributed to preserving the cultural heritage embedded in these miniature paintings. The artists, once nameless, became integral parts of India's artistic legacy.

**FAMOUS MINIATURE PAINTINGS IN INDIA**

School of Painting	Description
<p><b>Rajput School</b></p>	<ul style="list-style-type: none"> <li>• <b>Geographical Origin:</b> Rajasthan and the surrounding regions.</li> <li>• <b>Features:</b> Rich, bold colors, intricate detailing, and a focus on themes like love, nature, and religion.</li> <li>• Different sub-schools include <b>Mewar, Marwar, Bundi-Kota, and Kishangarh.</b></li> </ul>

<p><b>Mughal School</b></p> 	<ul style="list-style-type: none"> <li>• <b>Geographical Origin:</b> Flourished during the Mughal Empire, primarily in North India.</li> <li>• <b>Features:</b> Blend of <b>Persian and Indian styles</b>, realistic portrayal of subjects, fine detailing, and use of gold and vibrant colors. Known for historical and courtly themes.</li> </ul>
<p><b>Deccan School</b></p> 	<ul style="list-style-type: none"> <li>• <b>Geographical Origin:</b> Deccan plateau, including Golconda, Bijapur, and Ahmadnagar.</li> <li>• <b>Features:</b> Fusion of indigenous styles with Persian influences, vibrant colors, and intricate patterns. Often depicted <b>royal portraits, battle scenes, and hunting scenes.</b></li> </ul>
<p><b>Bengal School</b></p> 	<ul style="list-style-type: none"> <li>• Emerged in the late 19th century as a response to Western academic art. Emphasizes simplicity, use of wash technique, and incorporation of Indian themes. Nandalal Bose and Abanindranath Tagore were key figures.</li> </ul>
<p><b>Malwa School</b></p> 	<ul style="list-style-type: none"> <li>• <b>Geographical Origin:</b> Flourished in the Malwa region.</li> <li>• <b>Features:</b> Known for its distinctive use of bright colors, especially green, and depiction of rural life, festivals, and courtly scenes.</li> </ul>

### Conclusion

- ◆ Goswamy's meticulous work expanded our understanding of miniature paintings by revealing the intricate family dynamics that shaped these artistic traditions, ensuring that the legacy of these artists endures in historical narratives.



**Context:** Recently, the Chief of Naval Staff addresses the fourth edition of the Goa

**Maritime Conclave and highlighted importance of Indo-Pacific Maritime Domain Awareness (IPMDA) initiative for ensuring the security and stability of the Indian Ocean Region (IOR).**

### About Indo-Pacific Maritime Domain Awareness (IPMDA) initiative:

- ◆ IPMDA is a technology and training initiative to enhance maritime domain awareness in the Indo-Pacific region and to bring increased transparency to its critical waterways.
- ◆ **Proposed by:** At the **2022 Quad Leaders' Summit in Tokyo**, Quad Leaders announced the Indo-Pacific



Partnership for Maritime Domain Awareness (IPMDA) to enhance existing maritime domain awareness capabilities.

- ▶ The QUAD is committed to contributing to maritime domain awareness in the Indo-Pacific region, which is fundamental for stability and prosperity.

◆ **Purpose:**

- ▶ IPMDA is a technology and training initiative to enhance maritime domain awareness in the Indo-Pacific region and to bring increased transparency to its critical waterways.
- ▶ IPMDA harnesses innovative technology, such as commercial satellite radio frequency data collection, to provide partners across Southeast Asia, the Indian Ocean region and the Pacific with near real-time information on activities occurring in their maritime zones.

**Under the initiative:**

The Quad has launched a series of **regional pilots delivering radio frequency data** to maritime agencies in Southeast Asia, the Indian Ocean region and the Pacific.

- ◆ **India's approach:** IPMDA extends the "**Security and Growth for All in the Region**" (SAGAR) initiative initiated in 2015 by the Indian government.

**Objectives of the initiative:**

◆ **Tracking of Dark Shipping:**

- ▶ The International Maritime Organisation (IMO) requires all ships displacing over 300 tons and engaged in international voyages (and all cargo ships of over 500 tons displacement even if not engaged in international voyages) to be fitted with an Automatic Identification System (AIS).
- ▶ The system essentially enables **identification and tracking of vessels** (including by satellites). Designed initially for collision avoidance, AIS also enables monitoring of national merchant and fishing fleets, cargo tracking, infrastructure protection, search and rescue and EEZ security.

◆ **IUU Fishing:**

- ▶ China is by far the largest exploiter of the world's oceans for fish. In June 2020, its distant water fishing fleet was estimated as comprising 16,996 vessels, more than 5-8 times previous estimates
- ▶ Another report identified the area around **Seychelles and Mauritius** as the most vulnerable to IUU fishing, but this area is **not covered by the IPMDA**.
- ▶ Within the **Indian Ocean part of the IPMDA**,

India, Bangladesh, Myanmar, Indonesia and Thailand all maintain reasonable surveillance and response capabilities within their maritime zones.

- ▶ The benefit provided by IPMDA will be welcome but incremental.
- ▶ It is the smaller island nations in the **Central and Western Indian Ocean** that need the IPMDA most. India will have to work out how to extend its benefits to them.



## RUSSIA'S WITHDRAWAL OF ITS CTBT RATIFICATION

**Context:** As per a latest update, Russia's President Vladimir Putin has signed withdrawing its ratification of the global treaty banning nuclear weapons tests.

- ◆ Russia's deratification of the **Comprehensive Nuclear Test Ban Treaty (CTBT)** was said to be in line with USA, which signed but never ratified the treaty.

**Debate around Russia's withdrawal:**

- ◆ Since Russia's invasion of Ukraine in February 2022, Russian officials have emphasized their formidable nuclear arsenal, aiming to deter other countries from aiding Ukraine in resisting the invasion.
- ◆ Russia's recent decision to revoke its ratification of the Comprehensive Nuclear Test Ban Treaty (CTBT) marks a significant step, potentially leading to the **first Russian nuclear test** since 1990.
- ◆ The CTBT established a global network of observation posts to detect indicators of nuclear explosions, such as **sound, shock waves, or radioactive fallout**.
- ◆ The move is viewed as a concerning trend in recent years, where **arms control agreements** have been either **scrapped or suspended**, potentially undermining global efforts towards **non-proliferation and stability**.

**What is Comprehensive Nuclear Test Ban Treaty (CTBT)?**

- ◆ The CTBT is a **multilateral treaty** that bans all nuclear explosions, whether for military or peaceful purposes.
- ◆ Although it was adopted by the **United Nations General Assembly** in 1996, it's still in the ratification stage — **18 countries** are yet to ratify (the process by which a state indicates its consent to be bound to a treaty).

- While Russia ratified the agreement in 2000, the US is still to do so.

### Which key countries haven't ratified CTBT?

- Notably, for the treaty to enter into force, it must be signed and ratified by **44 specific nuclear technology** holder countries, eight of which have yet to ratify the agreement: **China, Egypt, India, Iran, Israel, North Korea, Pakistan and the United States.**

### How did CTBT come into being?

- The United States conducted the world's first successful nuclear weapons test in July 1945. Four years later, the Soviet Union tested their first nuclear weapon.
- These tests triggered a decades-long arms race between the two superpowers.
- Between **1945 and 1996**, more than **2,000 nuclear tests** were carried out — 1,032 of them by the United States and 715 of them by the Soviet Union.
- Britain carried out 45 tests, France 210 and China 45.
- The radioactive fallout from those tests drew criticism from around the globe. As a result, several attempts to curb the explosive tests were made.
  - Limited Nuclear Test-Ban Treaty (LTBT):** The 1963 LTBT prohibited nuclear testing in the atmosphere, outer space, and underwater, but underground tests were still permitted.
  - Threshold Test Ban Treaty (TTBT):** Six years later, the US and Soviet Union agreed to sign TTBT, which established a nuclear "threshold" by banning the two countries from conducting tests that would produce a yield exceeding 150 kilotons (equivalent to 150,000 tons of TNT).
  - Comprehensive Nuclear Test Ban Treaty (CTBT):** After the Cold War ended around 1990 and the disintegration of the Soviet Union, the geopolitical tensions simmered down. The UN took advantage of the situation and adopted the CTBT, which put a blanket ban on the explosive testing of nuclear weapons.

### Did the CTBT stop nuclear testing?

- Since the CTBT, **10 nuclear tests** have taken place.
- India** conducted two in 1998, **Pakistan** also two in 1998, and **North Korea** conducted tests in 2006, 2009, 2013, 2016 (twice) and 2017.
- The **United States** last tested in 1992, **China and France** in 1996 and the **Soviet Union** in 1990.
- Russia, which inherited most of the **Soviet nuclear arsenal**, has never conducted a nuclear test.



## INDIA-BHUTAN RELATIONS

**Context:** As per the latest update, Bhutan King JigmeKhesarNamgyalWangchuk began his maiden three-day visit to Assam, India.

### King Jigme Khesar Namgyal Wangchuk:

- Fifth King of Bhutan – His Majesty Jigme Khesar Namgyel Wangchuck was born on **21 February 1980** to His Majesty **Jigme Singye Wangchuck** and **Ashi Tshering Yangdon Wangchuck.**
- The king is the protector of all religions in Bhutan.
- The king is not answerable in a **court of law for his actions**, and his person is sacrosanct.
- However, the king is mandated to **protect and uphold the Constitution** "in the best interest and for the welfare of the people of Bhutan".



### About the information:

- The king of Bhutan was planned to visit the **Kamakhya Temple.**
- The King and his entourage will also visit the **Kaziranga National Park.**

**Strategic Significance:** India and Bhutan share a **649-km-long border**, of which a 267-km boundary is with Assam.

### India-Bhutan Ties:

- Diplomatic relations between India and Bhutan were established in 1968 with the appointment of a resident representative of **India in Thimphu.**
- Before this India's relations with Bhutan were looked after by our Political Officer in Sikkim.
- The basic framework of India – Bhutan bilateral relations is the Treaty of Friendship and Cooperation of 1949 between the two countries, which was updated and signed during the visit to India of JigmeKhesarNamgyelWangchuck in February 2007.
- Economic relations:**
  - India is Bhutan's largest trading partner, and Bhutan's major export destination.
  - Bhutan's hydropower potential is a significant source of revenue for the country, and India

has been instrumental in assisting Bhutan in developing its hydropower projects.

- ▶ India also provides Bhutan with financial assistance for its development projects.

### Why Bhutan is significant for India?

- ◆ Bhutan shares its borders with India and China, and its strategic location makes it an important buffer state for India's security interests.
- ◆ India has provided Bhutan with assistance in areas such as defense, infrastructure, and communication, which has helped to maintain Bhutan's sovereignty and territorial integrity.
- ◆ India has helped Bhutan build and maintain its border infrastructure, such as roads and bridges, to strengthen its defense capabilities and ensure its territorial integrity.
- ◆ In 2017, during the Doklam standoff between **India and China, Bhutan** played a crucial role in allowing Indian troops to enter its territory to resist Chinese incursions.

### Concerns:

- ◆ **China's Growing Influence:** China's increasing presence in Bhutan, particularly along the disputed border between Bhutan and China, has raised concerns in India.
  - ▶ India has been Bhutan's closest ally and has played a key role in protecting Bhutan's sovereignty and security.
  - ▶ However, China's growing economic and military influence in the region poses a challenge to India's strategic interests in Bhutan.
- ◆ **Border Disputes:** India and Bhutan share a 699 km long border, which has been largely peaceful.
  - ▶ However, there have been some incidents of border incursions by Chinese forces in recent years.
  - ▶ The Doklam standoff in 2017 was a major flashpoint in the India-China-Bhutan tri-junction. Any escalation of such disputes could strain India-Bhutan relations.

## MOBILITY AND MIGRATION PARTNERSHIP AGREEMENT BETWEEN INDIA AND ITALY

**Context:** Recently, the External Affairs Minister of India has signed the Mobility and Migration Partnership Agreement with Italy to facilitate movement of workers, students and professionals.

### About the Agreement:

- ◆ They signed Mobility and Migration Partnership Agreement and the Cultural Exchange Programme to enable seamless movement of workers, students and professionals and also address the challenges of illegal migration.
- ◆ The agenda focused on taking forward the renewed defence and security partnership.
- ◆ **Points of discussion:** India and Italy has agreed that potential in **agro-tech, innovation, space, defence and the digital** domain should be explored.
  - ▶ The two leaders also spoke about the **West Asia situation, Ukraine conflict** and the **Indo-Pacific landscape**.

### India-Italy Relations:

- ◆ **Historical and Cultural Ties:**
  - ▶ India and Italy are ancient civilizations but young states (Italy having been reunified only in 1861).
  - ▶ These two ancient civilizations have known, interacted and traded with each other for over **2000 years**.
- ◆ **Economic ties:**
  - ▶ Italy is among India's top 5 trading partners in the EU and the 12th largest investor in India. The balance of trade has been in India's favour since the early eighties.
  - ▶ Main items of import from Italy are general and special purpose machinery, machine tools, metallurgical products, and engineering items. Around **140 large Italian companies** are active in India.
- ◆ **Cultural Exchange, Scientific Co-operation etc.:**
  - ▶ The agreement for cultural cooperation was signed in 1976.
  - ▶ It includes the **Cultural Exchange Programme (CEP)** between Italy and India which entails exchange of students in language programmes as well as other academic courses.
  - ▶ There are several Universities/higher education institutions in Italy with highly qualified faculties which conduct courses in **Indian art, history and languages**.
  - ▶ Many of these institutions teach **Hindi and Sanskrit to Italian students**.

An ICCR Chair on Modern Indian History was also established in September 2011 in 'La Sapienza' University in Rome.

- ▶ An Agreement on **S&T Co-operation** exists since 1978.

- ▶ The Agreement envisages three yearly action plans under which joint research projects can be undertaken.

#### ◆ **Diaspora:**

- ▶ The Indian community in Italy is the **second largest community** of Indians in Europe after UK.
- ▶ As per the latest Italian official estimates, more than **1, 60,000 Indian nationals** are resident in Italy.
- ▶ As first generation migrants, majority of them are engaged in economic sectors such as **agriculture, dairy farming, leather industry, construction works and in service industry.**

### INDIA SIGNED FIRST INTERNATIONAL DECLARATION TO ADDRESS RISKS OF AI

**Context:** India, along with countries like the United Kingdom, United States, Australia and China, agreed to work to manage the risk that artificial intelligence poses, at a AI summit, Bletchley Park, London. **About 'Bletchley Park' Declaration:**

- ◆ The Declaration is the first International Declaration to manage AI's safe development.
- ◆ India was among the **28 countries** that signed **Bletchley Declaration** on the first day of the AI Safety Summit hosted by the UK government
  - ▶ Countries have agreed to work together on AI safety research.
- ◆ The Bletchley Park Declaration defines "**Frontier AI**" as advanced foundational generative AI models that could pose serious risks to public safety.
- ◆ It highlights the potential for significant harm, intentional or unintentional, from these AI models and emphasizes the need for international cooperation to address these risks.
- ◆ Future AI safety summits-
  - ▶ South Korea co-hosting a virtual summit and
  - ▶ France set to host an in-person summit

#### **Global Variance in AI Regulation**

- ◆ Various nations have responded differently to the emergence of generative AI tools.
  - ▶ The EU has proposed a stringent AI Act based on the AI's usage and associated risks.

- ▶ The UK opts for a more lenient, innovation-friendly approach.
- ▶ The US, through an executive order, is navigating toward defining a regulatory framework for AI, building on the Blueprint for an AI Bill of Rights.
- ▶ China has also introduced its own measures for AI regulation.

#### **President Biden's Executive Order:**

- ◆ Following the Bletchley Park Declaration, US President Joe Biden issued an executive order aiming to regulate AI technology and safeguard against potential threats.
- ◆ The order requires AI companies to share the results of safety tests before releasing new AI capabilities.
  - ▶ It empowers the federal government to intervene, adjust, or halt products if they're deemed unsafe.
  - ▶ The order also introduces the use of watermarks to flag AI-generated content like deepfakes, establishing industry guidelines that government agencies are obliged to implement.

#### **India's Evolving AI Stance:**

- ◆ India has notably shifted its stance on AI regulation.
  - ▶ India's leadership emphasizes the importance of addressing potential downsides of AI while leveraging its opportunities.
  - ▶ India now seems focused on formulating a "risk-based, user-harm" regulatory approach, setting up a domestic statutory authority to regulate AI, and advocating for global AI responsibility.
  - ▶ This summit reflected a global consensus on the need for responsible and safe AI, leading to policy moves and executive actions aimed at ensuring safety, security, and trust in AI technologies across nations.

### VOICE OF GLOBAL SOUTH SUMMIT

**Context:** Recently, the Prime Minister inaugurated the second Voice of Global South Summit.

#### **What is the Voice of Global South Summit (VoGS)?**

- ◆ The VoGS Summit is an Indian initiative that has been designed to provide a common platform for the countries of the Global South to share their perspectives and priorities on several major issues.

- ◆ It aims to find out solutions for common challenges faced by developing countries through talks.
- ◆ Inspired by PM's vision, '**SabkaSaath, SabkaVikas, SabkaVishwas, aurSabkaPrayas**', the summit follows India's philosophy of VasudhaivaKutumbakam.

### How did the summit start?

- ◆ The foundation of this unique initiative was laid considering the recent global developments that have severely impacted the developing world.
- ◆ These include events such as COVID pandemic, mounting debt, on-going Ukraine conflict, and challenges of food, energy security and others.
- ◆ Often, the worries of developing countries do not gain adequate attention and space on the global stage.
- ◆ The relevant existing platforms have proven to be deficient in handling the challenges and concerns of the developing nations.

### About Global South:

- ◆ **Global South** refers to countries in Asia, Africa, and South America, while **Global North** includes countries like the US, Canada, Europe, Russia, Australia, and New Zealand.
- ◆ It's a term used to categorize countries based on economic development and historical factors.

### Features of Global South:

- ◆ Mostly lower-income countries, often with colonial histories.
- ◆ Not strictly limited to the Southern Hemisphere; many are in the Northern Hemisphere.
- ◆ Used as a value-free alternative to "Third World."
- ◆ Major countries like Brazil, China, India, Indonesia, and Mexico are part of the Global South.

### Need for Classification:

- ◆ Helps describe economic and geopolitical differences.
- ◆ Overcomes the limitations of East/West or First/Second/Third World classifications.
- ◆ Recognizes the shared history of colonization.
- ◆ Acknowledges the emergence of economically powerful South countries.

### Indian Context:

- ◆ India aims to represent the underrepresented Global South in international forums.
- ◆ Calls for reform in multilateral institutions like the UNSC, UN, and IMF.

- ◆ Emergent economies like India and China seek cooperation with other Global South countries.
- ◆ Challenges the dominance of the Global North in international affairs.

### Criticism of Classification:

- ◆ Some find the term too broad and vague.
- ◆ Questions about whether elites of the Global South aim to challenge global capitalist structures.
- ◆ Concerns about the neglect of Africa in the rise of Asia.

### Significance of Global South:

- ◆ India aims to unite Global South nations to address common concerns.
- ◆ Potential for technical and idea exchanges and cooperation in various areas.
- ◆ Highlighting shared concerns like energy security and sustainable development.

### Challenges for Consolidation:

- ◆ Debate over climate reparations and exclusion of India and China.
- ◆ Impact of the Russia-Ukraine War on Least Developed Countries.
- ◆ China's increasing influence in the Global South through initiatives like the Belt and Road.

### Way Forward:

- ◆ India needs active engagement in regional politics within the Global South.
- ◆ Recognize differentiation within the Global South in terms of wealth, needs, and capabilities.



## MOTHER, CHILD AND THE POSHAN TRACKER

**Context:** The Poshan Tracker app helps improve last-mile delivery of nutritional services and could be a precursor for targeted investments in healthcare for women and children.

### Poshan Tracker App

- ◆ The rollout of the Poshan Tracker by the Government of India represents the largest mobile phone nutrition monitoring system in the history of global health.
- ◆ Other examples of **app-based nutrition monitoring systems** from around the world have been limited



one-off pilots with little, if any, integration into national systems.

- ▶ For example, **UNICEF's RapidSMS project** in Malawi or a small project in nine primary health centres by university researchers in the **Republic of Mauritius**.
- ◆ In contrast, in India, within two years of the inception of the Poshan Tracker, there has been universal uptake — nearly **1.3 million Anganwadi workers** have downloaded the app across all states and Union territories and are using it every day for **monitoring ICDS services**.
- ◆ Central to the **new Poshan 2.0 guidelines released by the Ministry of Women and Child Development**, the Poshan Tracker is a centralised ICT-enabled platform, developed to promote transparency and accountability of nutrition service delivery to the last mile.

### Data Monitoring through Poshan Tracker App:

- ◆ Going by the scale of operations, Poshan Tracker represents an unprecedented opportunity to monitor progress in **addressing malnutrition** in India.
- ◆ As per the latest data from the Poshan Tracker Dashboard, **the height and weight of 72 million children under five years of age** are being collected through the Poshan Tracker.
- ◆ If we compare it against a total of 113 million, which is the population of children under the age of 5 as per the UN Data Projections, this translates into **real-time monitoring of more than 50 per cent of children in the country**. Moreover, **94 per cent of beneficiaries** have been **Aadhar verified**.

### National, State and District Level Data level Monitoring:

- ◆ In addition to capturing beneficiary data, the Poshan Tracker dashboard captures national, state and district-level data on three sets of indicators.
- ◆ First, the Anganwadi infrastructure including the number of Anganwadi centres built, with **functional toilets or drinking water** and whether they have been **open for service delivery**.
- ◆ Second, **tracking the number of beneficiaries** who **received take-home rations** (not raw rations) and hot cooked meals.
- ◆ And third, **monitoring of nutritional outcomes**.

### Significance of Poshan Tracker App:

- ◆ The Poshan Tracker is designed to act as a **real-time feedback loop** for frontline functionaries to prevent

malnutrition by identifying children who are faltering at an early stage, targeting beneficiaries facing acute malnutrition, and monitoring the effective delivery of ICDS services.

- ◆ The various modules available on the Poshan tracker include —
  - ▶ Beneficiary registration
  - ▶ Daily tracking job aid module and home visit scheduler for the anganwadi worker
  - ▶ Growth monitoring (height/weight) as per WHO Standards
  - ▶ Migration facility for beneficiaries who move to another Anganwadi centre within or outside the state
  - ▶ A dashboard for monitoring key performance indicators of selected underperforming districts
  - ▶ A portal for reporting community engagements on nutrition promotion.
  - ▶ Further, separate modules for AWCs in tribal and border areas are also being developed.

### Challenges in Poshan Tracker App:

- ◆ Looking at the global experience, doubts about data quality have been identified as a major hindrance to using nutrition monitoring data for informed nutritional policies.
- ◆ Also, global experience shows that decision-makers do not place a high value on data that are three to five years old.
- ◆ Novel approaches such as the Poshan Tracker may be a solution, but the question is: Will the Poshan Tracker improve the accuracy and timeliness of nutrition monitoring in India?

### Accuracy of Poshan Tracker App data:

- ◆ With regards to accuracy, a 2015 evaluation of a mobile phone app built into the existing national growth monitoring system in Indonesia found that the mobile phone app improved the accuracy of growth monitoring for children — **particularly underweight — by 80 per cent**, on average.
- ◆ In the context of the Poshan Tracker, **the app automatically calculates whether a child has low height for age ("stunted"), low weight for height ("wasted"), or is underweight based** on the WHO growth charts.
- ◆ Thus, it has **significant potential to reduce errors in manual calculation** of these nutritional outcomes using field tables.
- ◆ Moreover, the granularity of Poshan Tracker data is **key in addressing the huge variability in malnutrition rates estimated through household-level surveys**.

- ◆ The Poshan Tracker makes **beneficiary-wise data** – that is observed on the ground, not modelled by academics – available for decision-makers for local and timely action.

### Way Forward:

- ◆ It is important to consider the fact that **Anganwadi workers are overburdened**, and extreme care must be taken to ensure that the Poshan Tracker is routinely updated based on their feedback to improve user-friendliness.
- ◆ **Ongoing skill-building and technical assistance will also be needed** to ensure the sustainability of this new monitoring system.
- ◆ India's Poshan Tracker represents a groundbreaking **initiative in monitoring the nutritional status of women and children on a large scale**.
- ◆ Nevertheless, it's crucial to understand that **data serves as a tool, not a goal in itself**.
- ◆ Therefore, **adequate investments must be directed towards delivering essential services** when malnutrition is detected in children or mothers.
- ◆ To fulfil the objectives outlined in Poshan 2.0 guidelines, the Poshan Tracker's data can thus **catalyse tangible and actionable outcomes at the grassroots**.

## CENTRE'S ACTION AGAINST 'PIRATED CONTENT' ON DIGITAL PLATFORMS

**Context:** Recently, the government has appointed nodal officers to order taking down pirated content from digital platforms and making stringent measure aimed at checking film piracy.



### Background:

- ◆ The decision came in the wake of the **Cinematograph Amendment Bill 2023**, which was passed in Parliament recently.
- ◆ Presently, there is **no institutional framework** in place to directly take action on **pirated film content** other than legal action under **the Copyright Act and the Indian Penal Code (IPC)**.

### About the Information:

- ◆ Government have appointed **12 nodal officers** in the Ministry of Information and Broadcasting and the Central Bureau of Film Certification (CBFC) with whom complaints related to film piracy can be lodged and action will be taken within **48 hours**.
- ◆ As per the ministries' order, those indulging in piracy could now be fined from **Rs.3 lakh to five per cent** of the gross audited value of production.
- ◆ An original copyright holder or anybody authorised by them can apply to a nodal officer to have pirated content removed.
- ◆ If a complaint is filed by someone who does not have the copyright or is not authorised by the copyright holder, the Nodal Officer may hold hearings to determine the complaint's validity before giving directives.

### What are the platforms?

- ◆ A statement by the Information & Broadcasting Ministry digital platforms – such as **YouTube, Telegram channels, websites or other online platforms** will be required by law to remove internet links with pirated content.

### What does content piracy means?

- ◆ Piracy refers to the unauthorized **duplication of copyrighted content** that is then sold at substantially lower prices in the 'grey' market.
- ◆ The ease of access to technology has meant that over the years, piracy has become more rampant.

### Reasons for Piracy of content:

- ◆ Piracy has increased due to the expansion of the **internet and the desire of practically everyone** to consume film content for free and this step would empower them to take immediate action in cases of piracy, providing relief to the businesses.

### Need for regulation:

- ◆ **Cinematograph Amendment Bill 2023:** According to the Union Minister, the Act aimed to curb film piracy, a measure which has been a long-standing demand of the film industry.

- ▶ The Act was amended after **40 years** to incorporate provisions against film piracy, including digital piracy after the last significant amendments were made in 1984.

#### Legal actions against piracy in India:

- **Indian Penal Code, 1860:** The act of counterfeiting or piracy will involve cheating under **Section 415 of IPC** and whoever cheats is liable to an imprisonment of one year or fine or both.
- **Cinematograph (Amendment) Bill, 2023:** The Bill has provisions for up to **three-year jail term** and a fine of up to **five per cent of the production cost** of a film for persons making pirated copies of movies.
- **Information Technology Act of 2000** is another piece of law that addresses digital piracy.
  - ▶ **Section 66 of the Information Technology Act** punishes unauthorized online distribution of copyrighted content with up to **3 years in prison** and fines of up to Rs.2 lakhs..

### MGNREGA AND SOCIAL AUDIT: A SAGA OF 'ON PAPER PERFECTION' AND 'ON GROUND PERFDY'

**Context:** Lack of compliance and fulfillment of Social Audit as part of the MGNREGA initiative.

#### The mandate of MGNREGA for Social Audit:

- ◆ Section 17 of the Mahatma Gandhi National Rural Employment Guarantee Act (**MGNREGA**) says the **gram sabha** "shall monitor the execution of works".
- ◆ Each State has **social audit units** which are supposed to work independent of the implementing authorities.
- ◆ The **auditing standards** laid down by the **Comptroller and Auditor General were issued only on December 19, 2016**.
- ◆ Every Social Audit Unit is entitled to **funds equivalent to 0.5% of the MGNREGA** expenditure incurred by the State in the previous year.
- ◆ The audit involves quality checks of infrastructure created under the MGNREGA, financial misappropriation in wages, and checking for any procedural deviations.

#### Reasons for lack of Compliance:

- ◆ High rate of corruption is one of the primary complaints against the scheme and social audit is the inbuilt anti-corruption mechanism in the Act.
- ◆ Lack of Functional Social Audit Teams

- ◆ Lack of Training and capacity building of Teams
- ◆ Lack of awareness about social audit.
- ◆ Ritualistic nature of the social audit process.
- ◆ 5% of the MGNREGA is too little for the Process.

#### The numbers and all pervasive problems:

- ◆ Other than **Kerala** the only States to cross the **50%** mark are **Bihar** (64.4%), **Gujarat** (58.8%), **Jammu and Kashmir** (64.1%), **Odisha** (60.42%) and **Uttar Pradesh** (54.97%).
- ◆ Only three States have covered **40%** or more villages — **Telangana** (40.5%), **Himachal Pradesh** (45.32%) and **Andhra Pradesh** (49.7%).
- ◆ Other than **Telangana**, among the poll-bound States, the numbers are really low — **Madhya Pradesh** (1.73%), **Mizoram** (17.5%), **Chhattisgarh** (25.06%), and **Rajasthan** (34.74%).
- ◆ **The problem is uniform irrespective of the party in power across the country.**
- ◆ **Social audit is the inbuilt anti-corruption mechanism in the Act.**

(Statistics are sourced from the Management Information System (MIS) on Social Audit maintained by the Union Ministry of Rural Development (MoRD) as on November 10. )

#### Concept: Social Audit:

- ◆ Social Audit is the **examination and assessment** of a programme/scheme conducted with the **active involvement of people** and comparing official records with actual ground realities.
- ◆ Social Audit is a powerful **tool** for **social transformation, community participation and government accountability.**
- ◆ Social audits are conducted in **partnership with civil society organisations**, with auditors emerging from among scheme beneficiaries, **who are trained over a period of time** on how to conduct a social audit.
- ◆ Since **awareness generation is an important component** of these audits, it becomes necessary to have conduits that can be relied upon to transfer factually correct information.

#### Mechanisms of Social Audit:

- ◆ The **Department of Rural Development** in states like Andhra Pradesh, Telangana and Meghalaya has set up its Society for Social Audit and Transparency which are autonomous institutions that conduct social audits of the MGNREG Scheme.
- ◆ This is in furtherance of the **Social Audit Manual of**



**the Ministry of Rural Development** which requires every State to set up an independent Social Audit Unit consisting of resource persons from the State, District and Village as well as experts on relevant themes.

- ◆ **Other related Initiatives: The Meghalaya Community Participation and Public Services Social Audit Act, 2017.**
- ◆ **Meghalaya** became the **first state** in India to operationalize a law that makes social audits of government programmes and schemes a part of government practice.

### Centre-State and Social Audit:

- ◆ The Centre has, multiple times, reminded the States that if the social audits are not conducted regularly, then the **funds under the MGNREGS will be withheld.**
- ◆ The States complain that the **audit is delayed** because the **Centre does not release the funds** for the social audit units, which work independent of the State governments, in time.
- ◆ There are recurrent **complaints of delayed salaries for the village-level auditors.**

### Silver Lining:

- ◆ Kerala is the only State to cover 100% gram Panchayats.
- ◆ State holds **periodic Social Audit Public Hearings (JanakeeyaSabhas) at the panchayat level** to subject the audit reports to close public scrutiny.
- ◆ The goal of deepening of democracy and democratic decentralization will continue to remain a pipe dream till initiatives like Social Audit are implemented in letter and spirit.



## CENTRE EXEMPTS CERT-IN FROM AMBIT OF RTI ACT

**Context:** According to the latest update, the Central government has exempted the Computer Emergency Response Team (CERT-In) from the ambit of the Right to Information (RTI) Act.

### About the information:

- ◆ The CERT-IN, which functions under the **Ministry of Electronics and Information Technology**, is the national nodal agency for responding to computer security incidents.
- ◆ It has also been tasked to **perform emergency measures** for handling cyber security incidents

besides issuing guidelines and advisories for their prevention.

- ◆ The Personnel Ministry has amended **Section 24 of the RTI Act** and put "Indian Computer Emergency Response Team" or CERT-In under the list of organisations exempted from the purview of the RTI law.

There are already **26 intelligence** and security organisations, which are exempted from providing information under the RTI Act except for matters related to the allegations of **corruption and human rights violations.**

### Which are the other organisations being exempted from the RTI law?

- ◆ The organisations exempted under the RTI Act includes;
  - ▶ The Intelligence Bureau,
  - ▶ Research and Analysis Wing,
  - ▶ Directorate of Revenue Intelligence,
  - ▶ Aviation Research Centre and
  - ▶ Enforcement Directorate, among others.

### What are the criteria to get an exclusion/exemption from RTI's ambit?

- ◆ **Section 8(1) of RTI Act**, lists all of the exemptions:
  - ▶ Information, disclosure of which would prejudicially affect the security, **sovereignty and integrity of India;**
  - ▶ information which may constitute **contempt of court;**
  - ▶ information that would cause a breach of **privilege of Parliament or the State Legislature;**
  - ▶ information including commercial confidence, trade secrets or intellectual property, the disclosure of which would harm the competitive position of a third party, unless the competent authority is satisfied that **larger public interest warrants the disclosure of such information;**
  - ▶ information available to a person in his fiduciary relationship, unless the competent authority is satisfied that the larger **public interest warrants the disclosure of such information;**
  - ▶ information received in confidence from **foreign government;**
  - ▶ information, the disclosure of which would endanger the **life or physical safety of any person;**

- ▶ information which would impede the process of **investigation or apprehension or prosecution of offenders**;
- ▶ cabinet papers including records of deliberations, which come under the specified exemptions;
- ▶ Information which relates to personal information the disclosure of which has not relationship to any public activity or interest, or which would cause **unwarranted invasion of the privacy**.

### Others Situations of Relaxation:

- ◆ **According to the Section 8(1)(g) of RTI Act :** If the disclosure would endanger the **life and physical safety of any person or identify the source of information** or assistance given in confidence for law enforcement or security purposes, then public authority is exempted from **disclosure of such information**.
  - ▶ **Meaning of LIFE under Article 21** is given an expansive and liberal construction such as to include, the right to live with dignity, right to shelter, right to basic needs and even the right to reputation. This meaning is applicable for section 8(1)(g) the RTI Act.
  - ▶ **'PHYSICAL SAFETY'** means the likelihood of assault to physical existence of a person.
  - ▶ Information putting an individual's **safety or liberty at risk**, e.g., the identity of people who blow the whistle on corruption inside their organization should be protected, because otherwise they may be targeted for discrimination or even violence.
- ◆ **Section 8(1)(h) of the RTI Act :**
  - ▶ **Public authority** is not under obligation to furnish information that would impede the process of investigation or apprehension or prosecution of offenders.
  - ▶ Definition of **"investigation"** under CrPC can be applicable for RTI Act also. It would mean all actions of **law enforcement, disciplinary proceedings, enquiries, adjudications** and so on.

### Right to Information (RTI Act) 2005:

- ◆ The RTI Act empowers citizens to seek time-bound information on governance-related matters from government organisations by filing an application.
- ◆ **The objectives of the Right to Information Act 2005:** To encourage transparency in all public bodies. To ensure accountability in public and government bodies.

### Right to Information (Amendment) Act, 2019:

- ◆ It provided that the **Chief Information Commissioner** and an **Information Commissioner** (of Centre as well as States) shall hold office for such term as prescribed by the Central Government.
  - ▶ Before this amendment, their term was **fixed for 5 years**.
- ◆ It provided that the **salary, allowances and other service conditions** of the Chief Information Commissioner and an Information Commissioner (of Centre as well as States) shall be such as prescribed by the Central Government.
  - ▶ Before this amendment, the salary, allowances and other service conditions of the Chief Information Commissioner were similar to those of the Chief Election Commissioner and that of an Information Commissioner were similar to those of an Election Commissioner (State Election Commissioners in case of States).
- ◆ It removed the provisions regarding deductions in salary of the **Chief Information Commissioner**, an Information Commissioner, the State Chief Information Commissioner and a State Information Commissioner due to pension or any other retirement benefits received by them for their previous government service.
- ◆ The RTI (Amendment) Act, 2019 was criticized on grounds of diluting the law and giving more powers to the central government.

### Computer Emergency Response Team (CERT-In):

- The constituency of CERT-In is the **Indian Cyber Community**.
- CERT-In is the **national nodal agency** for responding to computer security incidents as and when they occur.
- CERT-In has been designated to serve as the national agency to perform the following functions in the area of cyber security:
  - ▶ Collection, analysis and dissemination of information on cyber incidents.
  - ▶ Forecast and alerts of cyber security incidents
  - ▶ Emergency measures for handling cyber security incidents
  - ▶ Coordination of cyber incident response activities.
  - ▶ Issue guidelines, advisories, vulnerability notes and whitepapers relating to information security practices, procedures, prevention, response and reporting of cyber incidents.
  - ▶ Such other functions relating to cyber security as may be prescribed.



## TURMERIC BOARD SET TO BE A REALITY

**Context:** As recently announced by the Prime Minister, National Turmeric Board is set to work at its capacity to boost the turmeric production and help tribals who are cultivating it.

### National Turmeric Board Overview:

- ◆ **Legal Status:** The National Turmeric Board operates as a **non-statutory body**.
- ◆ **Administrative Oversight:** It falls under the purview of the Ministry of Commerce & Industry.
- ◆ **Board Composition:**
  - ▶ **Chairperson:** Appointed by the Central Government, responsible for providing strategic direction to the Board's activities.
  - ▶ **Secretary:** Appointed by the Department of Commerce, responsible for the day-to-day administration of the Board.
- ◆ **Board Members:**
  - ▶ **Ministry Representatives:** Officials from the Ministry of AYUSH, Departments of Pharmaceuticals, Agriculture & Farmers Welfare, Commerce & Industry of the Union Government to offer governmental perspectives.
  - ▶ **State Government Representatives:** Senior officials from three states on a rotational basis to ensure regional considerations.
  - ▶ **Research and Industry Experts:** Representatives from select national/state institutions involved in turmeric research and industry.
  - ▶ **Turmeric Stakeholders:** Representatives from turmeric farmers and exporters to advocate for the community's interests.

### Objectives of the National Turmeric Board:

- ◆ **Increasing Awareness and Consumption:** Initiate awareness campaigns promoting the health benefits of turmeric to elevate its consumption within India.
- ◆ **Collaborate** with the **Ministry of AYUSH** to encourage the use of turmeric in traditional medicine systems like Ayurveda.
- ◆ **Developing International Markets:** Conduct market research to identify potential international markets for turmeric and its products.
- ◆ Facilitate **Indian turmeric exporters'** participation in international trade fairs and exhibitions.
- ◆ Collaborate with the Ministry of Commerce &

Industry to negotiate favourable trade agreements benefiting turmeric exports.



- ◆ **Research and Development:** Invest in research and development to create new turmeric-based products, exploring both culinary and medicinal applications.
- ◆ **Document and preserve** traditional knowledge related to turmeric for future generations, ensuring ethical use.
- ◆ **Capacity Building and Skill Development:** Organize **training programs for turmeric growers**, emphasizing modern cultivation techniques, sustainable farming practices, and post-harvest handling.
- ◆ **Provide workshops** to enhance **farmers' skills** in areas such as organic farming, pest management, and irrigation practices.
- ◆ **Ensuring Quality and Food Safety:** Develop and enforce quality standards for turmeric and its products to comply with international regulations.
- ◆ **Implement food safety measures** across the turmeric supply chain to ensure products meet high-quality standards.



## DRAFT NATIONAL PHARMACY COMMISSION BILL

**Context:** Health Ministry releases draft National Pharmacy Commission Bill.

### Objectives of the bill

- ◆ A significant move intending to replace the Pharmacy Act of 1948.
- ◆ The primary objectives is to enhance access to affordable and high-quality pharmacy education
- ◆ Ensuring the availability of pharmacy professionals across the country, and promote equitable healthcare by making pharmacy services accessible to all citizens.

### Important Provisions:

- ◆ **Periodic Assessment:** The Bill calls for transparent and periodic evaluations of pharmacy institutions.

- ◆ **Pharmacy Register:** A National Pharmacy Register will be maintained to ensure transparency in the details of pharmacy professionals.
- ◆ **Research Integration:** Professionals are encouraged to integrate the latest research into their practice and contribute to on-going research efforts.
- ◆ **Ethical Standards:** Upholding high ethical standards is emphasized for pharmacy professionals.
- ◆ **Grievance Redressal:** An effective mechanism for grievance redressal in relevant matters is proposed.
- ◆ **Commission Establishment:** The Bill proposes the establishment of a commission headquartered in Delhi.
- ◆ **Flexibility and Adaptability:** It emphasizes flexibility to adapt to evolving needs, reflecting a forward-looking approach.
- ◆ **Pharmacy Ethics and Registration Board:** It introduces a Pharmacy Ethics and Registration Board tasked with maintaining the National Pharmacy Register.
- ◆ **Transparency and Accessibility:** The focus is on making pharmacy services transparent and accessible to the broader population.

### Nationwide Impact:

- ◆ With a nationwide scope, the Bill aims to have a positive impact on pharmacy education, healthcare accessibility, and professional standards across India.
- ◆ It presents a comprehensive approach towards equitable healthcare in the country.



## OFFICE OF GOVERNOR AND DISCRETION

**Context:** The Supreme Court has agreed to hear Tamil Nadu, Kerala pleas against their Governors and use of discretionary powers.

### About the News-

- ◆ Tamil Nadu Governor R. N. Ravi has 'withheld' assent for certain Bills passed by the Tamil Nadu Legislative Assembly.
- ◆ This follows the Supreme Court expressing 'serious concern' over inaction by the Governor on Bills presented for his assent.
- ◆ The court expressed displeasure on similar delays by Governors of Telangana, Punjab and Kerala.

### What does the Constitution say?

- ◆ **Article 200** of the Constitution outlines four options

available to a Governor when a legislature-passed Bill is presented for assent:

- ▶ Grant assent immediately.
- ▶ Withhold assent.
- ▶ Return the Bill to the legislature, requesting reconsideration of the Bill or specific provisions.
- ◆ If the legislature reapproves the Bill, with or without accepting Governor-suggested amendments, the Governor is constitutionally obligated to grant assent.
- ◆ Alternatively, the Governor may reserve the Bill for the President's consideration.
- ◆ In the case of Presidential consideration i.e. Article 201 the decision to grant or withhold assent is made by the President. Notably, there is no specified timeframe for the President to decide on the Bill's outcome.

### Do Governors have discretion?

- ◆ Governors did have discretion to return Bills before the first provision in the draft Article 175(now Article 200).
- ◆ This was amended by the Constituent Assembly in 1949.
- ◆ The first provision to Article 200 is thus a saving clause and retains the discretion over the fate of the Bill solely in the hands of the State Cabinet.
- ◆ Article 163 makes it clear the Governor is not expected to act independently.
- ◆ The Supreme Court in the Shamsher Singh case verdict has held that a Governor exercises all his powers and functions conferred on him by or under the Constitution on the aid and advice of his Council of Ministers save in spheres where the Governor is required by or under the Constitution to exercise his functions in his discretion.
- ◆ The assent or return of the Bill does not involve the discretion of individuals occupying the Governor's post.

### Can a Governor in practice actually sit on a Bill forever?

- ◆ Granting assent to Bills is among the limited areas where the Governor has discretionary powers. However, the exercise of this discretion must adhere to constitutional principles, relying on compelling reasons rather than personal preferences.
- ◆ Notably, Article 200 employs the term "shall," suggesting that the Constitution framers intended a mandatory requirement for Governors in this regard.



### What were the recommendations of different commission?

- ◆ The Sarkaria Commission (1987) has emphasized that the Governor's power to reserve Bills for the President's consideration is a rare and implied discretionary authority, primarily applicable in cases of unconstitutionality.
- ◆ In all other instances, the Governor should adhere to Article 200, acting on ministerial advice.
- ◆ The commission suggested that the President should resolve such Bills within a maximum of six months, communicating reasons for withholding assent when possible.
- ◆ Despite recommendations from the Punchhi Commission (2010) to decide on Bills within six months, these proposals remain unimplemented.

### What are various Supreme Court observations w.r.t Governor?

- ◆ **Purushothaman Nambudiriv's State of Kerala (1962):**
  - ▶ The Constitution Bench clarified that no specific time limit is imposed by the Constitution for the Governor to provide assent to Bills.
  - ▶ Emphasized that the Governor must align actions with the will of the Legislature and operate in harmony with their Council of Ministers.
  - ▶ The Supreme Court asserted that withholding assent to a law validly passed by the Legislature constitutes a direct attack on the federal structure of the Constitution.
  - ▶ Noting that causing delays in assenting to Bills would be an arbitrary exercise, contradicting the constitutional spirit.

### What is the other Constitutional Position related to Governor?

<b>Article 153 of the Indian Constitution</b>	It mandates the appointment of a Governor in each state. The 7th Amendment to the Constitution however, allows for the appointment of the same person as Governor of two or more states.
<b>Article 154</b>	The Governor shall have executive power over the state, which he shall exercise either directly or through officers subordinate to him in conformity with this Constitution.
<b>Article 163</b>	There shall be a council of ministers, led by the Chief Minister, to assist and advise the Governor in the exercise of his powers, except when he is compelled to execute his functions at his discretion.
<b>Article 164</b>	The council of ministers is collectively responsible to the state's legislative assembly. <b>This provision is the cornerstone of the state's parliamentary system of governance</b>

The Governor has the same Executive, Legislative, Financial, and Judicial authorities as the President of India. However, the Governor's power is restricted in several ways compared to that of the President, as the Governor lacks the President's military, diplomatic, and emergency authorities.

### Electoral bonds to end large cash payments in election finance.

- ◆ **Scheme of electoral bonds:**
  - ▶ A publicly owned commercial bank, with the largest network of branches is the only designated vendor.
  - ▶ Bonds remain valid for 15 days within which they can be encashed through the bank account of the selected political party.
  - ▶ The purchaser-donor enjoys tax credits on the purchased bonds as in any other donation to charities.
- ◆ **Association of democratic records:** The idea was to facilitate large donors, preferring anonymity whilst donating funds for elections, with an alternative to cash payments.

## ELECTION FUNDING: QUESTION ON ITS SOURCE AND STATE FUNDING

**Context:** Supreme Court's consideration of electoral bonds has brought back the focus on State Funding of Elections.

### What is State Funding of Elections?

State funding of elections means that the government provides funding to political parties or candidates to participate in elections.

### What is the cause of concerns over the electoral bonds?

- ◆ **Anonymity of the electoral bonds:** The anonymity afforded by the bonds is primarily versus citizens.
- ◆ **Bond vendor is a government owned bank:** SBI is a government-owned bank, which can be persuaded by the government into sharing data informally regarding the bond purchases and encashment by political parties.

### Benefits of the State Funding of Elections

- ◆ Candidates with questionable histories often succeed despite their reputations in large parts because they can afford to do so. State funding will put an end to this practice.
- ◆ Since candidates won't be overly dependent on the party for funding, parties will become more democratic internally.
- ◆ State funding ensures that some influential people or groups don't have undue influence over electoral processes.
- ◆ A level playing field can enable the promotion of healthy competition by ensuring equality between large, well-known political parties and small parties and independent candidates.
- ◆ It can break up the corporate-political connection those results from the need for funding to win elections. If political parties are not financially influenced by the huge corporate sector, citizen-centric decisions will be encouraged.
- ◆ Equitable funding distribution among all candidates will ensure fairness in pre-election spending.
- ◆ Public funding can increase transparency in the party and thereby help curb corruption.
- ◆ When elections are held fairly, the chosen candidates maintain the principles of openness, responsibility, and honesty, among other things, bringing about good governance.
- ◆ It is unreasonable to expect the majority of the population in a nation with a low per capita GDP to contribute money to political parties.

### The argument against State Funding of elections:

- ◆ The amount of money spent by the government on important goals like nutrition, education, and health is incredibly small. Funds being diverted to finance elections may hinder state welfare programs and the development of the weaker sections.
- ◆ The gap between political leaders and average citizens would widen as a result of state sponsorship.

- ◆ Elections funded by the state won't stop parties from lobbying and receiving illicit additional cash from the business world. This will lessen the purpose of state funding for elections.
- ◆ It will be challenging for the state to finance elections with a fiscal deficit of GDP.
- ◆ Public funding may influence many people to enter politics solely to receive state subsidies rather than run for office and engage in development work.
- ◆ In India, elections are held on a massive scale, and keeping track of expenses in the digital age is exceedingly difficult. Procedures for funding elections need to be drastically changed.
- ◆ The time is not yet right to choose public funding of elections unless fundamental reforms like decriminalizing politics, comprehensive electoral finance reforms, robust transparency, audit, and strict legal framework for the enforcement of anti-corruption laws are appropriately implemented.

### Views of various Commissions/committees on State Funding of Elections

#### The Indrajit Gupta Committee on State Election Funding (1998):

- ◆ To create a level playing field for parties with limited resources, the Indrajit Gupta Committee recommended state funding of elections in 1998.
- ◆ The Committee advised placing two restrictions on state funding.
- ◆ Firstly, only national and state parties with a symbol should receive state funding. Independent candidates should not.
- ◆ Secondly, only recognized political parties and their candidates should get short-term state funding in kind in the form of specific infrastructure.
- ◆ The Committee noted that at the time of the report, the nation's economic climate was only conducive to partial, not complete, public funding of elections.

#### Law Commission Report on Electoral Law Reform (1999):

- ◆ According to the Law Commission of India's 1999 report, state funding of elections is "desirable" as long as political parties are not allowed to accept money from other sources.
- ◆ Additionally, it strongly recommended that the appropriate regulatory framework should be put in place.
- ◆ The Commission agreed with the Indrajit Gupta Committee that, given the economic situation of the nation at the time, only partial public assistance was practicable.

### The National Commission to Review the Working of the Constitution, 2001:

- ◆ It did not endorse state funding of elections.
- ◆ But it agreed with the 1999 Law Commission report that there is a need for an appropriate framework for the regulation of political parties.
- ◆ It needs to be implemented before the state funding is taken into consideration.

### Second Administrative Reforms Commission (2008):

- ◆ The Second Administrative Reforms Commission's "Ethics in Governance" report from 2008 advocated partial state funding of elections to cut down on "illegitimate and excessive funding" of election costs.

### What are the suggestions for better governance of the political parties?

- ◆ **Strict Supervision of political parties:** Poor Intra-party governance is concentrated in the Registered Unrecognized Political Parties (RUPP). Most are in breach of their undertaking to fight an election within five years and remain active thereafter.
- ◆ **Strengthen the Regulatory compliance:** The benefit of income tax exemption should only be available after registered parties demonstrate a five-year record of compliance with the regulations.
- ◆ **Enforce inner-party democracy and avoiding conflict of interest:** Making party members occupying party positions, ineligible for holding executive positions in government. This is necessary to create a complete segregation of functions within the ruling party and the government
- ◆ **Empower ECI to regulate political parties:** The misuse of the fiscal privileges afforded to political parties can be minimized through targeted regulatory tweaks, within the existing construct of private financing and the inner functioning of parties improved through targeted regulation.

### Conclusion:

- ◆ "Secrecy is darkness where corruption gets nurtured". Funding to the political parties need to be transparent. Transparent funding will pave the way for level playing field for all the political parties.



**Context:** Recently, the Chief Justice of India D Y Chandrachud has asked for that 'the doctrine constitutional morality' should not be rejected.

### More about the news:

- ◆ Chief Justice of India D Y Chandrachud underscores the significance of constitutional morality, asserting that it shouldn't be dismissed due to potential conflicts with existing social practices.
- ◆ Emphasizing the universal acceptance of certain constitutional values, he highlights the intentional incorporation of provisions from other jurisdictions into the Indian Constitution.
- ◆ Chandrachud views the Constitution as a dynamic document, evolving through over a hundred amendments to address India's unique challenges.
- ◆ He advocates understanding it as embodying universal values while adapting to local needs.
- ◆ The Chief Justice stresses that constitutional morality aims to reform societal practices, preventing dominance based on religion, caste, or ethnicity.
- ◆ Addressing diversity in judicial appointments, he notes the changing demographics in the legal profession and underscores the need to support exceptional candidates overcoming gender, religious, and caste prejudices.
- ◆ Regarding the role of courts in social dialogue, he sees a complementary relationship with Parliament, both contributing to societal transformation within their institutional boundaries.

### What is Constitutional Morality?

- ◆ Constitutional morality pertains to the principles and values that form the foundation of the constitution, directing both government and citizens in their conduct.
- ◆ It encapsulates the concept that the constitution is not solely a legal instrument but also a moral guide, mirroring the collective values and dreams of a society.
- ◆ Additionally, it emphasizes the importance of interpreting and executing the constitution in alignment with these core principles and values, rather than merely adhering to it as a technical, literal document.
- ◆ **The term "Constitutional Morality" is not mentioned in the constitution.**

### What are some significant Supreme Court judgments relating to Constitutional Morality?

Constitutional morality has been referenced in multiple instances by the Supreme Court, including:

- ◆ **SP Gupta Case/First Judge Case (1982):** The Supreme Court labeled constitutional violations as a grave breach of constitutional morality.

- ◆ **Naz Foundation vs. Government of NCT of Delhi (2010):** The Court prioritized constitutional principles over societal perceptions concerning the legitimacy of same-sex relationships.
- ◆ **Manoj Narula vs. Union of India (2014):** The Chief Justice of India emphasized constitutional morality as a commitment to constitutional norms, discouraging actions contrary to the rule of law or reflective of arbitrary conduct.
- ◆ **NCT of Delhi vs. Union of India (2018):** The Supreme Court aligned constitutional morality with the essence of the Constitution, emphasizing strict adherence to its principles.
- ◆ **Navtej Singh Johar vs. Union of India (2018):** The Court distinguished between constitutional and public morality, asserting that constitutional morality prioritizes justice over societal acceptance, leading to the decriminalization of homosexuality under Section 377 of IPC.
- ◆ **Joseph Shine vs. Union of India (2019):** Upholding gender equality and the right to equality, the Supreme Court annulled Section 497 of IPC, criminalizing adultery, emphasizing that constitutional morality should guide laws rather than the state's prevailing common morality.
- ◆ **Indian Young Lawyers Association & Ors vs. The State of Kerala & Ors., (2019) (Sabarimala Case):** The Court ruled that barring women aged 10-50 from the Sabarimala temple violated key principles of constitutional morality i.e. Justice, Liberty, Equality, and Fraternity. It clarified that the term "morality" in Articles 25 & 26 of the Constitution pertains to constitutional morality, not popular morality.

## NEED FOR QUICK TRIAL AGAINST MPS AND MLAS

**Context:** The Supreme Court recently asked High Courts to set up special benches for quick trials against MPs and MLAs.

### More about the news:

- ◆ **Pending cases against MPs & MLAs:**
  - ▶ The SC noted that "as many as 5,175 subject cases (were) pending" against MPs and MLAs "as of November 2022".
- ◆ **Supreme Court's directives for quick trials:**
  - ▶ **Special benches:** The Supreme Court has asked High Courts to set up special benches to monitor trials in over 5,000 such cases for their speedy disposal.
  - ▶ **Prioritising cases:** A three-judge bench led

by Chief Justice of India D Y Chandrachud said **criminal cases:**

- "Punishable with death or life imprisonment" should be given priority,
- Followed by "cases punishable with imprisonment for five years or more, and then other cases".
- ▶ **Condition for adjournment:** The bench has also said that the trial should not be adjourned, except for rare and compelling reasons.
- ▶ **Registration & hearing of case:** In its directions, the SC asked the HC Chief Justices to register a suomotu case with the title, "**In Re designated courts for MPs, MLAs**",
  - The case may be heard by the Chief Justice, or a bench assigned by him.
- ▶ **Ensuring infrastructure facility:** The apex court has asked the principal district and sessions judge to ensure sufficient infrastructure facility for the designated court and enable it to adopt the necessary technology for effective and efficient functioning.
- ◆ **Significance of the move:**
  - ▶ Apex court has noted that criminal cases pending against members of Parliament and State Legislatures "have a **direct bearing on our political democracy**".
  - ▶ Confidence and trust of the constituency in their political representative, be it an MP or MLA, is necessary for an **interactive, efficient and effective functioning** of a parliamentary democracy.
  - ▶ However, such confidence is difficult to expect when figures, as indicated in the above referred table, loom large in our polity.

### Criminalization of Politics

- ◆ **Meaning:** It means the participation of criminals in politics. This means that persons with criminal backgrounds contest in the election and get selected as a member of parliament or state legislature
- ◆ **Major Reasons:**
  - ▶ Criminalization of political parties is a result of the connection between criminals and politicians and vote-bank politics
  - ▶ Lack of enforcement of laws and judgments
  - ▶ lack of ethics, and values, and loopholes in the function of the election commission.
  - ▶ It is also linked to political control of state machinery and corruption
  - ▶ The political system is unwilling to change the law or the system.



## Issues of Criminalization of Politics

### ◆ Elected members with criminal records:

- ▶ Nearly 40 percent of members of the current Parliament have criminal cases pending against them.
- ▶ Most of them do not feel vulnerable or threatened as they are aware that **it will take years for trials to conclude**.

### ◆ Question of safety & security:

- ▶ The main purpose of governance is to provide safety and security to citizens who elect their representatives for this role.
- ▶ But if the elected members themselves have criminal records, would they be interested in a criminal justice system that is prompt and efficient?

### ◆ Low conviction rate:

- ▶ As per the **National Crime Records Bureau's 2021 report**, only 10,416 cases of murder were disposed of during the year with just a 42.4 per cent conviction rate.
- ▶ The Law minister has admitted to more than 4.7 crore cases pending in various courts.

### ◆ Situation in police stations:

- ▶ Politicians play a very powerful role at police stations, compromising both the integrity and impartiality of field staff.
- ▶ In due course, ordinary criminals graduate to be dreaded ones and form gangs extorting money, grabbing land, threatening witnesses in criminal cases, etc.

## Suggestions & way ahead

### ◆ Rightful demands:

- ▶ In this bleak scenario, our reaction as citizens should be to demand more courts, judges and judicial infrastructure and not to encourage "encounters", which we seem to be applauding.

### ◆ Stopping the electability of criminals:

- ▶ Checking the nexus between crime, money, and muscle power will be among the first few steps required to be taken.
- ▶ The growing dependence of political parties on criminals for muscle power and "electability" must be stopped.
- ▶ It is high time all political parties came together and developed a consensus on keeping criminals — some with serious charges including kidnapping, rape, murder, grave corruption, and crimes against women — out of the system.

### ◆ Vigilant voters:

- ▶ Voters also need to be vigilant about the misuse of money, gifts, and other inducements during election.

### ◆ Efficient Use of technology:

- ▶ The use of technology as often stated by the current Chief Justice of India, is a potent weapon to ensure speedy trials.
- ▶ Citizens need to build up public opinion for the introduction of online court hearings at all levels.
  - Courts shall curtail frequent adjournments and reduce the trial duration. Court production of jail inmates can also be online and relieve police from escort duties.
  - For minor ailments, telemedicine facilities can be used for persons in custody.
  - This will result in more police persons being available on the ground.

### ◆ Regular training of Police force:

- ▶ Police officers need to be regularly trained about the **Constitution and human rights** so that they do not resort to their guns.
  - It is unfortunate that after their basic police training, very few officers undergo in-service courses either in law or investigation.

### ▶ Online training:

- Of late, online training is becoming popular in many state police organisations.
- As per the Bureau of Police Research and Development, vacancies in police all over the country range at around 20 percent. Police station **officers are thus reluctant to relieve their field staff** for training in police academies.
- **Online training modules can bridge the gap.**

## SEBI TO INTRODUCE REGULATORY FRAMEWORK FOR INDEX PROVIDERS

**Context:** A regulatory framework will be introduced for the index providers to foster transparency and accountability in governance and administration of financial benchmarks in the securities market.

### Key Highlights –

- ◆ Flexibility for NPO Fundraising

- ▶ SEBI grants flexibility to **Not for Profit Organisations (NPOs)** in raising funds through the social stock exchange.
- ▶ The minimum issue size for public issuance of **Zero Coupon Zero Principal Instruments (ZCZP)** on the social stock exchange is reduced to Rs 50 lakh from Rs 1 crore.
- ◆ Regulatory Framework for Index Providers
  - ▶ SEBI decides to introduce a regulatory framework for index providers in the securities market.
  - ▶ The aim is to enhance transparency and accountability in the governance and administration of financial benchmarks.
- ◆ **Public Issuance Changes for NPOs**
  - ▶ NPOs on the **social stock exchange** can now issue ZCZP with a reduced minimum size of Rs 50 lakh.
  - ▶ This move is expected to facilitate easier fundraising for Not for Profit Organisations.
- ◆ **Governance and Transparency Focus**
  - ▶ Sebi's decision to regulate index providers underscores a commitment to improving governance and transparency in financial benchmarks.
  - ▶ The regulatory framework aims to ensure responsible and accountable practices in the administration of indices.
- ◆ **Market Development and Social Impact**
  - ▶ The approval for flexibility in NPO fundraising aligns with efforts to develop the social stock exchange and promote social impact initiatives.
  - ▶ These decisions collectively contribute to creating a more conducive environment for both financial markets and socially responsible activities.

### Who are market index providers?

- ◆ Index providers are companies that design and calculate indexes.
- ◆ They have the responsibility to set the rules that decide what securities to include in each index, how the index will be managed and how securities will be added or removed from that index over time.

The most prominent indices in India are the Nifty50 by NSE Indices, and Sensex provided by a venture of S&P Dow Jones Indices and BSE Ltd.

### How they help investors?

- ◆ The process of listing usually determine how stocks can be classified, e.g. are a particular stock a

Healthcare or an Oil & Gas stock, or are it a Developed or Emerging market stock.

- ◆ An index allows investors and other stakeholders to get a snapshot/idea of the market.

### What are index funds?

- ◆ An index fund is a portfolio of stocks or bonds designed to mimic the composition and performance of a financial market index.
- ◆ Index funds have lower expenses and fees than actively managed funds.
- ◆ Index funds follow a passive investment strategy.
- ◆ Index funds seek to match the risk and return of the market based on the theory that in the long term, the market will outperform any single investment.

### Need for regulation:

- ◆ SEBI had stressed the need for greater oversight on currently unregulated index providers like NSE Indices (a National Stock Exchange subsidiary) and the Asia Index Pvt. Ltd. citing their growing dominance due to the "proliferation" of index funds.
- ◆ The firms associated with investors could "exercise discretion through changes in methodology resulting in exclusion or inclusion of a stock in the index or change in the weights of the constituent stocks" and their decisions can impact the volumes, liquidity and price of such stocks, as well as investors' returns from index funds.

As of January 2023, almost 16% of the mutual fund industry's 41 lakh crore assets under management were in index and exchange traded funds (ETFs), including from large investors like the Employees' Provident Fund Organisation (EPFO) which oversees formal sector workers' retirement savings.

### Significance:

- ◆ Portfolios of index funds only change substantially when their benchmark indexes change.
- ◆ Thus, regulating the market index providers could directly impact the index funds.

- Weighting is a method that balances out the influence of any single holding in an index or a portfolio.

### Role of Securities Exchange Board of India (SEBI)

- ◆ It is the regulator for the securities market in India. It was established in 1988 and given statutory powers on 30 January 1992 through the SEBI Act, 1992.

- ◆ It has empowered to exercise on following areas;
  - ▶ To approve by-laws of Securities exchanges.
  - ▶ To require the Securities exchange to amend their by-laws.
  - ▶ Inspect the books of accounts and call for periodical returns from recognized Securities exchanges.
  - ▶ Inspect the books of accounts of financial intermediaries.
  - ▶ Compel certain companies to list their shares in one or more Securities exchanges.
  - ▶ Registration of Brokers and sub-brokers.

## STATE OF STATE FINANCES REPORT 2023-24

**Context:** As per the report on State finances, it has been found that States face substantial challenges in their finances, marked by high committed expenditure and a persistent revenue deficit.

### Background:

- ◆ Recently, the Union **Ministry of Statistics and Programme Implementation** has also released figures for the Gross State Domestic Products.
  - ▶ The economies of **19 states and Union Territories** exceeded their pre-Covid levels, with 7 recording double-digit growth rates during 2021-22.
  - ▶ The growth rates of 11 states including Gujarat and Maharashtra were not available for 2021-22.

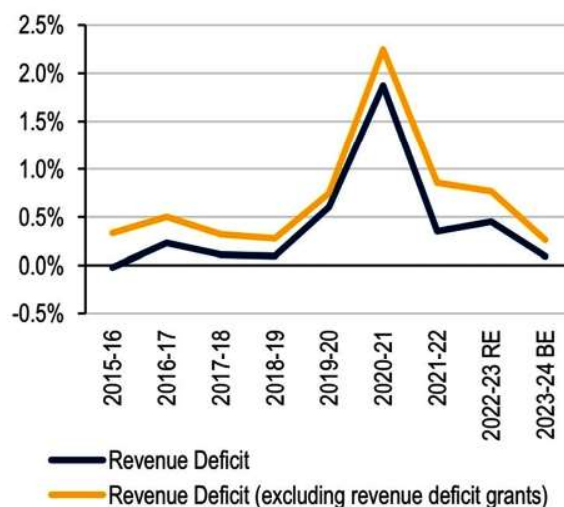
### About the Report:

- ◆ The findings are based on the '**State of State Finances**' report by PRS Legislative Research.
- ◆ **Objective:** The report is shedding light on the complex fiscal landscape for states **Post-GST and Post-pandemic**.

### Key Findings:

- ◆ State GST (SGST) accounts for over 40% of states' own tax revenue but SGST to **GSDP ratio** continues to be lower than pre-pandemic level.
- ◆ SGST revenue is also lower than the level of guaranteed revenue for five years.
- ◆ In FY24, 11 states have budgeted a revenue **deficit-gap** between revenue expenditure and receipts. Of these, Andhra Pradesh, Himachal Pradesh, Kerala, Punjab, and West Bengal did so after accounting for revenue deficit grants.

**Figure 1: States' aggregate revenue deficit (as % of GDP)**



Note: Negative revenue deficit indicates a surplus.  
Sources: RBI; State Budget Documents; MoSPI; PRS.

### About Gross State Domestic Product (GSDP):

- *Gross State Domestic Product (GSDP) is a measure in **monetary terms**, the sum total volume of all finished goods and services produced during a given period of time, usually a year, within the geographical boundaries of the State, accounted without duplication.*
  - ▶ *The **State Domestic Product** is classified under three broad sectors such as **Primary sector, Secondary sector and Tertiary sector** and is compiled economic activity wise as per the methodology prescribed by the National Accounts Division, National Statistical Office, Ministry of Statistics & Programme Implementation, and Govt. of India.*

- ◆ Over the past several years, states have spent around **8-9%** of their revenue receipts on subsidies, with a significant portion on power subsidy.

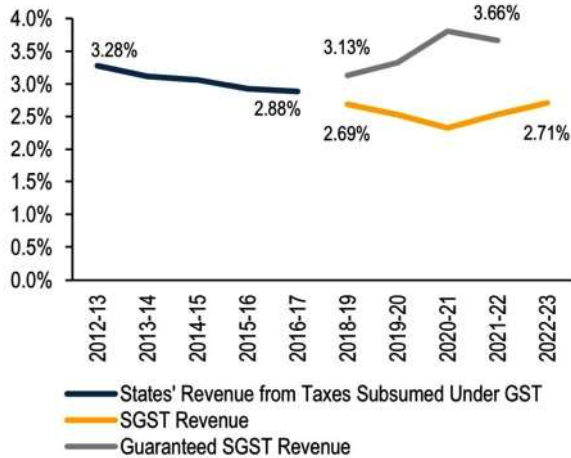
### Report Outcomes:

- ◆ Despite overall state revenue returning to pre-pandemic levels, GST collections as a percentage of Gross State Domestic Product (GSDP) remain below the pre-GST era.
- ◆ The cessation of GST compensation grants in June 2022 has adversely affected some states, highlighting the need for revenue rationalization.

### Challenges Highlighted:

- ◆ States grapple with high committed expenditure and persistent revenue deficits.

**Figure 3: States' tax to GSDP ratio in pre and post GST periods (in %)**



Note: The chart excludes Arunachal Pradesh, Gujarat, and Haryana as pre-GST revenue is not available and Jammu and Kashmir as the state was bifurcated into two UTs in 2019. It excludes 2017-18 as GST was introduced for part of the year.

Sources: CAG, State Budget Documents; MoSPI; PRS.

- ◆ Non-merit subsidies have increased, pension reforms are being reversed, and state-owned discoms face financial strain.

## UNDERSTANDING WORKER PRODUCTIVITY

**Context:** Recently, the Infosys founder N.R. Narayana Murthy sparked a debate urging young Indians to work 70 hours per week and noted that India's worker productivity is one of the lowest in the world.

### Worker vs. Labour Productivity:

- The only conceptual difference between the two is that the 'work' in worker productivity describes **mental activities** while the 'work' in labour productivity is mostly associated with **manual activities**.

### Intent behind this statement:

- ◆ Citing Japan and Germany as examples of countries that grew because their citizens worked harder and for longer hours to rebuild their nations in the aftermath of the Second World War, urging young Indians to work 70 hours per week. He noted that India's worker productivity is one of the lowest in the world.

### What is worker productivity?

- ◆ Worker productivity refers to how much an employee

can accomplish within a set amount of time.

- ◆ Productivity can look different for different individuals and roles.
- ◆ On the other hand Labour productivity is a measure of economic performance that compares the amount of output with the amount of labour used to produce that output.

### Re-evaluating Productivity: The Role of Human Capital in Redefining Work Hours and Worker Well-being

- ◆ However, in certain types of services, especially ones involving intellectual labour, measuring the value of the output independently is very difficult, so the income of workers is usually taken as proxies to suggest productivity.
- ◆ Productivity in a more sophisticated usage is an attribute not of time but of skill. Human capital (a more reductionist version of Human Development) including education, training, nutrition, health etc., enhances the ability of labour to become more productive, or churn out greater quantum of value within the same number of working hours.
- ◆ Based on this understanding, the reduction in the number of working hours does not hamper the value of output produced, but in turn enhances the leisure and quality of life of workers in real terms, while the value added to the economy could still be increasing, nominal wages remaining the same.

### Link between worker productivity and economic growth

- ◆ Analyzing the Complex Relationship between Productivity and Economic Prosperity: A Case Study of India (1980-2015)
- ◆ In the period from 1980 to 2015, India witnessed a remarkable increase in its Gross Domestic Product (GDP) from 200 billion dollars to over 2,000 billion dollars. This growth may suggest overall economic prosperity, but a closer look at income distribution reveals a more intricate story.
- ◆ During this same period, income distribution in India underwent significant changes.
  - ▶ The share of national income held by the **middle-income group (40%)** and the **low-income group (50%)** decreased from 48% to 29% and 23% to 14%, respectively. In contrast, the top 10% of income earners saw their share rise from 30% to 58%.
- ◆ This implies that the income of the bottom 50% of the population increased by 90% from 1980 to 2015, while the top 10% experienced a much more substantial increase of 435%. The top 0.01% and top



0.001% witnessed even more dramatic increases of 1699% and 2040%, respectively.

- ◆ What's particularly interesting is that these substantial increases in income for the wealthiest individuals can't be solely explained by their productivity. Instead, this prosperity appears to be linked to inherited wealth generating substantial returns (referred to as patrimonial capitalism) or the extravagant compensation packages of a select "super managerial" class, which often appear disconnected from their actual productivity.

### Does India have one of the 'lowest worker productivity' in the world?

- ◆ As incomes are seen as a proxy for productivity, there is a fallacious inference about productivity of workers in India being low. The question as to why over the years, beginning with the 1980s, the share of wages and salaries have declined while the share of profits has increased, perhaps is linked to the informalisation of employment, labour laws and the development and regulation regime becoming unfavourable to workers.
- ◆ A U.S based multi-national workforce management firm, has in fact observed that Indians are among the hardest working employees in the world.
- ◆ Picodi.com an international ecommerce platform has observed that India ranks one of the lowest in terms of average wages per month globally. Therefore, statement does not seem to be backed by facts. It seems to be part of an effort to push further labour reforms unfavourable to the workers by creating a false narrative.

### Does having a high informal labour pool complicate the calculation of worker productivity and its correlation to GDP?

- ◆ Informal employment has grown in both organized and unorganized sectors due to economic reforms. Claims of increased formalization are limited to tax compliance and haven't improved labor standards.
- ◆ Even in formal manufacturing, labor-intensive Micro-Small-Medium Enterprises (MSMEs) dominate, cutting costs through lower wages. This is driven by the profit motive, leading to worker exploitation. Large corporations also outsource to these smaller units, a trend seen in India and globally, including the IT sector.

### How far the comparison is tenable?

- ◆ These comparisons don't seem to enable serious analysis. Japan and Germany are neither comparable in terms of the size nor quality of labour force nor in terms of the nature of their technological trajectories

or their socio-cultural and political structures. India presents a unique case and any arbitrary comparison would only lead to dubious analytical inferences and fallacious policy prescriptions.

- ◆ Enhancing social investments, focusing on exploring domestic consumption potential for increased productivity with a human centric assessment of development achievements is the way to a more sustainable and desirable outcome.

### Way forward

- ◆ The advice to work longer hours to accelerate India's development, while drawing inspiration from other nations, must be considered in a more nuanced context.
  - ▶ Worker productivity is not solely defined by working longer hours; it encompasses various factors, including skill development and human capital.
- ◆ Furthermore, the informal labour sector's growth and income inequality in India complicate the correlation between worker productivity and GDP.
- ◆ It is crucial to prioritize policies that promote equitable growth, improve working conditions, and address income disparities.
- ◆ These measures, rather than arbitrary comparisons, will lead to a more sustainable and desirable outcome for India's economic development, fostering a society where prosperity is accessible to all.

## CLIMATE-PROOFING AGRICULTURE: THE VITAL ROLE OF SMALLHOLDER FARMERS IN INDIA

**Context:** Smallholder farmers are indispensable to the global agricultural ecosystem, yet their challenges and contributions are often overlooked.

### Climate change vulnerabilities:

- ◆ Despite efforts to mitigate its impact, human-induced climate change is yielding perilous and extensive disruptions in natural systems and affecting billions of lives globally.
- ◆ Particularly vulnerable are those communities and ecosystems least equipped to withstand these challenges.
- ◆ This crisis is intricately interwoven with agriculture. Droughts, storms and soaring temperatures ravage farming fields, food stocks and biodiversity affecting health as well as livelihoods imminently threatening

sustenance and rendering many more people food insecure.

### Agriculture contribution to climate change:

- ◆ Paradoxically, agriculture is also among the sectors which are major contributors to greenhouse gas emissions.
- ◆ Agriculture currently accounts for 19 per cent-29 per cent of global greenhouse gas emissions and that is projected to rise with population growth and increasing food demand.
- ◆ Efforts such as natural farming, climate-smart agriculture and regenerative agriculture along with subsidies to encourage sustainable practices are being explored by stakeholders from academia, government, civil society and more to mitigate agriculture's contribution to greenhouse gas emissions.

### Small holders Farmers in India:

- ◆ Smallholder farmers with 1-3 acres of irrigated land or 3-7 acres of rainfed land, who **constitute 27 per cent of the agricultural workforce in India**, are most vulnerable to the impact of climate change.
- ◆ In the past three years, **76 per cent of rainfed smallholder farmers and 52 per cent of irrigated smallholder farmers have lost half or more of their crops** due to erratic rainfall patterns.

### Increased Pesticide Use in India:

- ◆ **Pests, diseases and weeds:** It have become more rampant, leading 76 per cent of farmers to increase their use of pesticides resulting in a drastic doubling of their chemical usage over the past five years.
  - ▶ The widespread application of chemicals harms the environment, damages soil fertility and compromises human health.
  - ▶ However, transitioning from conventional arming to alternative practices is not always straightforward for smallholder farmers due to their limited land and resources.
- ◆ **Green Solutions:** Recognising these challenges, scientific research is actively being carried out in exploring alternatives to conventional pesticides, such as organic and biological solutions, which are both effective and eco-friendly.
- ◆ **Soil Fertility:** Many farmers are aware of the need to improve soil fertility and are working towards achieving it.
  - ▶ More than three-quarters of smallholder farmers are using cow dung as manure to improve soil fertility.

- ▶ Significant use of crop rotation further demonstrates their awareness about maintaining soil health and enhancing yields.

- ◆ **Smart Agriculture:** The proliferation of smartphones and digital resources has enabled farmers to become more knowledgeable about climate change and enhance their agricultural practices.
  - ▶ Emerging agri-tech enterprises are making strides in offering services such as real time local climate insights, remote sensing technologies and guidance on planting and irrigation strategies.
  - ▶ However, the consistency of these services varies and they have yet to effectively penetrate the realm of smallholder farmers.
- ◆ **Integration of technology and agriculture:** The integration of technology is promising, it is crucial to ensure that the solutions and opportunities are universally accessible, sustainable and beneficial to all farmers regardless of their land size.
  - ▶ Recommendations of shifting towards indoor farming or cultivating diverse crops may be challenging for smallholder farmers due to their limited arable land.
  - ▶ To address this, agri-tech companies and climate organisations must focus on scalable and affordable solutions that also cater to the needs of small-scale farmers.

### Small holder farmers Centric Farming:

- ◆ Owing to their noticeable contribution to agricultural produce and the proportion of rural India that it constitutes, it is time that the smallholder farmers' perspectives are placed at the centre of our efforts to combat climate change.
- ◆ It is necessary to acknowledge the importance of supporting them in our collective pursuit of building resilient and sustainable food systems.
- ◆ Adequate financial support, innovative technological solutions and philanthropic efforts are essential to empower smallholder farmers and facilitate their transition to climate-resilient practices.

### Way Forward:

- ◆ The path ahead should involve collaboration among various stakeholders including governments, NGOs, philanthropies, academia and the private sector.
- ◆ Smallholder farmers are indispensable to the global agricultural ecosystem, yet their challenges and contributions are often overlooked.
- ◆ Embracing sustainable alternatives, leveraging technological advancements and amplifying their voices are key steps towards climate-resilient agriculture.

- ◆ By creating an enabling environment for their needs, a brighter and more equitable future for smallholder farmers and a more sustainable planet awaits the next generation.

## INDIA'S FIRST NATIONAL SECURITY STRATEGY

**Context:** The National Security Council Secretariat (NSCS) is going to draft a comprehensive National Security Strategy in consultation with several Central ministries and departments.

- ◆ The final draft has been put forward for the Cabinet's approval.

### About:

- ◆ This is the first time that India will come out with a national security strategy.
- ◆ **Objective:** The document is aimed at putting together India's national security objectives and the ways to be adopted to achieve or realise them.
- ◆ The strategy may include other stakeholders to tackle the many **non-traditional threats** and vulnerabilities identified across domains such as **civil society organisations, academia, media, think tanks and other institutions**.

### Why it's needed?

- ◆ Given the complex nature of the various traditional and non-traditional threats, especially when rising geopolitical tensions have given way to uncertainties; it was felt that there was an urgent need to draft a national security strategy.
- ◆ This would draw in from the **comprehensive national power** of the country.
- ◆ A National Security Strategy document outlines the country's security objectives and the ways to be adopted to achieve these.
- ◆ **Significance:**
  - ▶ It would help in optimal utilisation of the military's resources for future wars and operations. Without such a well-defined strategy, military reforms would be like "putting the cart before the horse".

### Process and stake holders

- ◆ Several Central ministries and other stakeholders have their roles cut out for the various facets of national security, the vulnerabilities and threats and the ways to plug them. It would be updated regularly, based on emerging situations and newer threat assessments.

- ◆ Document will consolidate and put together the challenges and threats unique to India and develop strategies to address them in the immediate and near future. This could include earmarking of resources, considering the existing internal and global situation.

### Importance in contemporary Period

- ◆ **Deterrence:** A well-defined strategy acts as a deterrent against potential adversaries. It sends a clear message that any hostile actions will be met with a strong and organized response, which can help prevent conflicts.
- ◆ **Resource Allocation:** A National Security Strategy helps in the efficient allocation of resources. It prioritizes various security needs, helping the government allocate budgetary resources to strengthen defense capabilities, intelligence agencies, and disaster management.
- ◆ **Counterterrorism:** Given India's vulnerability to terrorism, a National Security Strategy is essential for counterterrorism efforts. It outlines the measures to combat terrorism, including intelligence sharing, law enforcement, and border security.
- ◆ **Cybersecurity:** In the digital age, cybersecurity is a crucial aspect of national security. A strategy provides a framework for protecting critical infrastructure, sensitive information, and maintaining the integrity of cyberspace.
- ◆ **Disaster Management:** Natural disasters and pandemics can also pose significant threats to national security. A strategy includes measures for disaster preparedness, response, and recovery.
- ◆ **Economic Security:** National security is closely linked to economic security. A strategy considers economic stability and prosperity as vital components of security, addressing issues such as trade, energy security, and critical infrastructure protection.
- ◆ **Geopolitical Influence:** A well-crafted strategy can enhance India's influence and standing in the global geopolitical arena. It allows India to assert its interests effectively and contribute to regional and global security.

### Conclusion

National Security Strategy is essential for India's safety, prosperity, and influence on the global stage. It provides a roadmap for addressing a wide range of security challenges, from traditional military threats to emerging issues such as cyber security and climate change. By formulating and implementing an effective strategy, India can better protect its citizens and interests while contributing to regional and global stability.

## THE IMPACT OF AIR POLLUTION ON ECONOMIC GROWTH

**Context:** As the increasing pollution level in both Delhi and Mumbai, studies have shown a direct and serious impact of air pollution on GDP growth and per capita income levels.

### Background:

- ◆ Given that **GDP growth rates and per capita income levels are generally seen as having a direct trade-off with emissions levels**, conventional wisdom tends to dismiss air pollution as an unavoidable by-product of economic growth. And this tends to limit the urgency for formulating a policy response to the problem.
- ◆ **A slew of new research**, however, points to exactly the opposite, that **air pollution has a direct, and a particularly debilitating impact on GDP growth and per-capita income levels by way of reduced worker output, lower consumer footfall in consumption-led services, hampered asset productivity, and a surge in health expenses and welfare allocations, especially in the productive age groups.**
- ◆ This is particularly worrying for a country like India, where **key economic hubs such as Delhi NCR are now prone to a recurrent annual cycle of high pollution with the onset of every winter, and Mumbai is struggling to cope with a polluting haze after the withdrawal of the southwest monsoon.**

### The Impact on economic output:

- ◆ The **Reserve Bank of India's Department of Economic and Policy Research (DEPR)** said in its latest **report on Currency & Finance 2022-23** that up to **4.5% of India's GDP could be at risk by 2030 due to lost labour hours** from climate change issues, including extreme heat and humidity.
- ◆ If the impact of **recurrent annual cycles of pollution** in key manufacturing and services hubs is added to that estimate, the drain on economic productivity is far higher.
- ◆ A June **2023 World Bank paper** authored by **A Patrick Behrer, Rishabh Choudhary, and Dhruv Sharma** pointed to clear evidence that the well-documented **micro-level impacts of air pollution** on health, productivity, labour supply, and other economically relevant outcomes aggregate to

"macro level effects that can be observed in year-to-year changes in GDP".

- ◆ These results, **based on data from about 550 districts in some 25 states and Union Territories** (which contribute, the report said, to **90% of India's real GDP**), were consistent with well documented micro effects of heat generating aggregate-level effects.

### Loss of GDP due to Air Pollution:

- ◆ A 2021 paper in **The Lancet Planetary Health**, which studied the direct impacts of air pollution in India on mortality and morbidity, found large inter-state variations in **economic loss as a proportion of the state GDP — from 0.67% to 2.15% — with the biggest losses in the low per-capita GDP states of Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, and Chhattisgarh.**
- ◆ This is especially relevant since **RBI data suggest that 50% of India's GDP comes from sectors that are exposed to heat**, which is a rough approximation for the share of GDP generated by outdoor work. In comparison, **less than 25% of European GDP is generated by the same sectors**, European Central Bank figures show.
- ◆ A first-of-its-kind report from **Dalberg Advisors**, in partnership with **Clean Air Fund, Blue Sky Analytics, and the Confederation of Indian Industry**, had estimated that air pollution entailed costs of about \$95 billion annually for Indian businesses, which is about 3% of India's GDP.

### The cost of poor Air Quality:

The costs of poor air quality were manifested in six distinct ways:

- lower labour productivity
- lower consumer footfall
- lower asset productivity
- increased health expenses
- welfare losses
- premature mortality

To calculate the impact of air pollution, the analysis used big data analytics, a primary survey, existing literature, and inputs from diverse stakeholders including academic experts in air pollution, along with cross-sectoral business heads and service providers.

### Recent Data on Economic Loss due to Air Pollution:

- ◆ **Footfall in Mumbai's Linking Road shopping district dropped by 5%** during the highly polluted period between November and January



- ◆ A rooftop solar company reported a **13% decrease in the productivity** of its solar panels on high pollution days, thereby reducing economic viability for solar in India
- ◆ Employees at Bengaluru's tech hub, **Whitefield Corporate Zone**, reported an **8-10% reduction in productivity at work**.

### The challenge for India

- ◆ Air pollution is an **urgent prerogative in India**, as more than **20 of the world's 30 cities** with the worst air pollution are in the country.
- ◆ **Delhi has the poorest air quality among cities globally**, with **PM2.5 concentration levels pegged at nearly 10 times the WHO target**.
- ◆ A paper in **The Lancet** had listed **Delhi as the city with the highest level of per-capita economic loss due to pollution** among major Indian cities.

#### Supporting Facts:

##### Greenpeace Southeast Asia and the Centre for Research on Energy and Clean Air;

- A report by Greenpeace Southeast Asia and the Centre for Research on Energy and Clean Air said **the costs of air pollution from fossil fuels, burning gas, coal, and oil results in three times as many deaths as road traffic accidents** worldwide.
  - According to the study, **air pollution has an economic cost of \$2.9 trillion**, about **3.3 per cent of the world's GDP**.
- ◆ With the air quality plummeting to the "**severe plus**" category, emergency measures has been taken, including a **ban on trucks and all types of construction** are set to be enforced in the National Capital Region.
- ### Impact on Service Sector:
- ◆ The paper '**The Effect of Pollution on Worker Productivity: Evidence from Call-Center Workers in China**' (**NBER Working Paper 22328**) by Tom Chang, Joshua Graff Zivin, Tal Gross, and Matthew Neidell, measured data on the daily productivity of 5,000 workers at the Shanghai and Nantong call centres of Ctrip, China's largest travel agency in 2016, against the government-reported daily air pollution index (API) for each city.
  - ◆ The study found that for each **10-unit increase in the API, worker productivity, measured by the number of calls handled, fell by 0.35%**. While the average duration of individual calls was not impacted by pollution levels, the time workers spent on break went up.

### Way Forward:

- ◆ To control vehicular pollution through policy mechanism.
- ◆ Reducing Stubble burning and directing it to better use.
- ◆ Use clean fuel for economic growth.
- ◆ Adapt sustainable development principles in planning and urbanization.



## ECOLOGICAL THREAT REPORT 2023

**Context:** Recently, the **Ecological Threat Report 2023** has been released by the **Institute for Economics & Peace (IEP)**.

#### Institute for Economics & Peace (IEP):

- IEP is an **international and independent think tank** dedicated to shifting the world's focus to peace as a positive, achievable, and tangible measure of human well-being and progress.
- It has offices in **Sydney, Brussels, New York, The Hague, Mexico City and Harare**.

### About the Report:

- ◆ This is the **fourth edition of the ETR** which covers **228** independent states and territories.
- ◆ **Objective:** The report analyzes global ecological threats, identifying **30 high-risk countries** with 1.1 billion people affected.
- ◆ **Need for assessment:**
  - ▶ Without action, ecological degradation worsens, exacerbating conflicts and forcing migration whereas 30 countries face severe threats with low resilience.
  - ▶ Recent food price pressures intensify challenges for ecologically threatened countries, exacerbating existing food insecurity concerns.
- ◆ **Significance:**
  - ▶ The ETR is unique in that it takes a multi-faceted, machine learning approach to combine measures of resilience with the most comprehensive ecological data available to shed light on the countries least likely to cope with extreme ecological shocks, now and into the future.

### Key Findings:

- ◆ Ecological threats, such as rapid **population growth, water risk and food insecurity** will be compounded by climate change, causing mass displacement of people and conflict.

- ◆ A 25% rise in food insecurity increases the **risk of conflict by 36%**.
- ◆ Similarly, a **25% increase** in the number of people without access to clean drinking water increases the likelihood of conflict by 18%
- ◆ 1 billion people are living in **42 countries** that currently face severe food insecurity
- ◆ 1 in 4 people globally do not have regular access to safe drinking water
- ◆ By 2050, 2.8 billion people will reside in countries facing severe ecological threats, compared to 1.8 billion today
- ◆ More than **60% of the world's megacities** are growing rapidly and are in countries with high levels of violence or conflict.
- ◆ These cities lack the **financial resources** to cater for their population growth.
- ◆ **Hotspot Countries:**
  - ▶ Three new countries have emerged as 'hotspots'.
  - ▶ They are **Niger, Ethiopia, and Myanmar**, all of which have entered a detrimental cycle of increasing ecological threats, lower societal resilience and escalating conflict.
  - ▶ **Each has faced famine and violence in the last 12 months:** Ethiopia's ongoing conflict, Niger's recent military coup, and Myanmar's violence following its coup in 2021.
- ◆ **Conflict, Food and Water Stress:**
  - ▶ Global food prices have increased by 33% since 2016, placing further stress on the most vulnerable. Currently, 42 countries face severe food insecurity, with almost **four billion people** living in areas with high or severe food insecurity. Most of these countries are in **Sub-Saharan Africa**.
- ◆ **Megacities: Rising Pollution and Population:**
  - ▶ The number of megacities<sup>^5^</sup> are on the rise and projected to increase from **33 to 50 by 2050**.
  - ▶ Over **267 million people** currently live in the world's least peaceful megacities.
  - ▶ These cities will experience rapid growth over the next 30 years, but lack the financial resource to manage their expansion, resulting in increases in crime, poverty, traffic congestion, and pollution.
- ◆ **Conflict & the Green Economy**
  - ▶ Countries that rely heavily on fossil fuels will struggle without assistance during the forthcoming green transition. For example, **DRC, Libya, Iraq, Angola, and Timor Leste** derive over 25% of their GDP from fossil fuels.

- ▶ Confronted with major ecological challenges and low societal resilience, these countries may face a decline in GDP of up to 60% between 2030 and 2040.



## COMPOSITE WATER MANAGEMENT INDEX' REPORT

**Context:** NITI Aayog weighs discontinuing key water report launched 5 years ago. It brought India's water challenges into spotlight and ranked states in terms of efficacy based on 28 parameters.

### What is Composite Water Management Index' report (CWMI)?

- ◆ NITI Aayog has developed the CWMI to enable effective water management in India and states in the face of this growing crisis.
- ◆ The CWMI is envisioned to bring about much-required improvements in water resource management and conservation in India as it provides an annual snapshot of the water sector status and the water management performance of the different states and UTs in India.
- ◆ It will **measure both the overall progress made by states in water management** and the incremental improvement in performance across time.
- ◆ The Index comprises nine themes (each having an attached weight) with **28 different indicators covering groundwater and surface water restoration**, major and medium irrigation, watershed development, participatory irrigation management, on-farm water use, rural and urban water supply, and policy and governance.
- ◆ The report was prepared in association with **three ministries — Water Resources, Drinking Water & Sanitation, and Rural Development**.
- ◆ The **first edition** launched five years ago in **June 2018** and the **second edition** launched in **August 2019** was for 2017-18.

### Why this index was launched and what its significance?

- ◆ India is suffering from the **worst water crisis** in its history and millions of lives and livelihoods are under threat. Currently, **600 million Indians face high to extreme water stress** and about two lakh people die every year due to inadequate access to safe water.
- ◆ The crisis is only going to get worse. **By 2030, the country's water demand** is projected to be **twice the available supply**, implying severe water scarcity for

hundreds of millions of people and an eventual ~6% loss in the country's GDP.

- ◆ **As per the report of National Commission for Integrated Water Resource Development** of MoWR, the water requirement by 2050 in high use scenario is likely to be a milder 1,180 BCM, whereas the present-day availability is 695 BCM.
- ◆ The United Nations University – **Institute for Environment and Human Security (UNU-EHS)**, had **warned that India** is close to reaching its **groundwater risk tipping point**. Environmental tipping points are **critical thresholds in the Earth's systems**, beyond which abrupt and often irreversible changes occur.
- ◆ Thus, there is an imminent need to **deepen our understanding of our water resources** and usage and put in place interventions that make our water use efficient and sustainable.

### What are latest observations?

- ◆ The latest report **maps the performance of states for 2018-19 and 2019-20**, and points out that water scarcity is a "national problem". The average annual per capita water **availability is expected to reduce to 1,486 cubic meters per person per year by 2021 from 1,545 cubic meters per person per year in 2011**.
- ◆ As per the annual water availability norms, the availability value of less than 1,700 cubic meter/person/year indicates water shortage. **Water availability below 1,000 cubic metre/capita/year is considered as "scarcity"**.
- ◆ In the 2019-20 report, **Gujarat leads in performance**, with Rajasthan improving significantly and Goa dropping from fourth to tenth place. Punjab's rank has also declined.

### The need for water governance in India and How such Index helps?

- ◆ Water governance refers to the **management, regulation, and distribution** of water resources in the country. It encompasses policies, institutions, and **practices that ensure sustainable and equitable water use**.
- ◆ **Scarcity issues** due to uneven distribution, **over-exploitation, and pollution** of water sources.
- ◆ Growing population and an **increasing demand**, sectors such as agriculture, industry, and urban areas, compete for water resources.
- ◆ **Pollution of rivers and groundwater sources** further necessitates governance to ensure water quality and protect public health.

- ◆ **Changing weather patterns, increased** droughts, and floods due to **climate change require adaptive water management** strategies and governance.
- ◆ Thus a sustainable and **equity based water governance** is required.
- ◆ The Index to promote the **spirit of 'competitive and cooperative federalism'** in the country, and ensure sustainable and effective management of water resources.
- ◆ The index was meant to foster "a culture of evidence and data-backed policy-decisions for efficient management of water resources".

### Why the index is weighing to be discontinued?

- ◆ CWMI is **not widely used or applied** in Planning, Decision making, Policy Formulation or Research by public or private stakeholders concerned with water sector.
- ◆ One view regarding the continuation of CWMI was that **other channels also need to be explored to undertake the task of indexing** rather than relying only on CWMI.
- ◆ On the other hand consultations are ongoing regarding next round of release or its efficacy. A consultation in December 2022, chaired by NITI Aayog member and Jal Shakti Ministry officers, discussed the release of a combined report for CWMI rounds 3.0, 4.0, 5.0, and 6.0.
- ◆ It was also felt that the coverage should be extended to districts. Finally, on the continuation of CWMI itself, there was a view that other channels also need to be explored to undertake the task of indexing.



## COP28: WHAT IS CARBON DIOXIDE REMOVAL?

**Context:** CDR methods require appropriate governance and policies as they can also cause adverse side-effects apart from the predicted benefits.

### COP 28 and CO2 removal:

- ◆ Ahead of the 2023 Climate Summit, the United Nations Environment Programme (UNEP) in a press release said that countries must go further than the current pledges under the 2015 Paris Agreement to limit global warming to 1.5°C with no or low overshoot during this century.
- ◆ According to the Emissions Gap report, delaying greenhouse gas (GHG) emissions reduction will further increase the future dependence on carbon dioxide removal (CDR) from the atmosphere.



### Carbon Dioxide Removal:

- ◆ **CDR:** Carbon dioxide removal, or CDR, is using technologies, practices, and approaches to remove carbon dioxide from our atmosphere through deliberate and intentional human actions.
- ◆ **Traditional Methods:** This includes traditional methods like afforestation, as well as more sophisticated technologies like direct air carbon capture and storage (DACCS).
- ◆ **Natural Processes:** Natural processes, like the growth of a natural forest, are not CDR methods.
- ◆ **Carbon Storage:** CDR also includes durable and efficient storage of extracted carbon dioxide in natural reservoirs like soil and vegetation, or in manufactured products like carbonated drinks.

### CDR methods:

- ◆ **Afforestation/reforestation:** Converting abandoned or degraded agricultural lands into forests can contribute to negative emissions. Additional plants and trees can sequester more carbon dioxide from the atmosphere into the soil.
  - ▶ According to the Intergovernmental Panel on Climate Change (IPCC), afforestation is a relatively cheaper method of CDR, costing approximately under \$240 per tonne of CO<sub>2</sub>. The storage time can last from decades to centuries.
- ◆ **Biochar:** Biochar is the substance produced by burning organic waste from agricultural lands and forests in a controlled process called pyrolysis. Although it resembles common charcoal in appearance, the production of biochar reduces contamination and is a method to safely store carbon.
  - ▶ IPCC estimates biochar as a CDR method costs \$10-345 per tonne of CO<sub>2</sub>. The downside of the technology includes negative impact from dust, and increased competition for biomass.
- ◆ **BECCS: Bioenergy with carbon capture and storage,** or BECCS, is similar to biochar in the sense that it also uses biomass to produce energy while

preventing the release of carbon dioxide into the atmosphere. However, BECCS involves bioenergy production, often through combustion to generate electricity or heat. The resulting CO<sub>2</sub> emissions from this combustion are captured and stored underground, preventing them from contributing to the greenhouse effect.

- ▶ According to IPCC, BECCS costs \$50-200 per tonne of CO<sub>2</sub>. Growing energy crops for BECCS can also lead to increased competition for land.
- ◆ **DACCS: Direct air carbon capture and storage,** or DACCS (also called DACS), extracts CO<sub>2</sub> directly from the atmosphere at any location. This captured CO<sub>2</sub> is then permanently stored in deep geological formations or used for other applications.
  - ▶ According to an update from the International Energy Agency (IEA), 27 DACCS plants have been commissioned worldwide till 2023, capturing almost 0.01 Mt CO<sub>2</sub>/year.
  - ▶ DACCS is also the most expensive form of CDR. Atmospheric CO<sub>2</sub> exists in a very diluted form, leading to high costs and energy needs for efficient extraction.
- ◆ **Enhanced rock weathering:** This CDR method involves pulverising silicate rocks to bypass the conventionally slow weathering action. The resultant product, usually a powder, has higher reactive surface area, which is then spread on agricultural lands for further chemical reactions.
- ◆ Estimated cost for enhanced rock weathering stands at \$50-200 per tonne of CO<sub>2</sub>, according to IPCC. Dust emissions and potential for increased GHG emissions from energy generation are a few drawbacks of the technology.
- ◆ **Ocean alkalinity enhancement:** Like forests and green patches on land, oceans are also vast natural sinks for carbon. Ocean alkalinity enhancement is a CDR method that involves adding alkaline substances to seawater to accelerate this natural sink.
- ◆ The process costs approximately **40-260 Dollars per tonne** of CO<sub>2</sub>, according to IPCC. However, it also comes with certain risks, like potential for increased GHG emissions from **mining, transport, and deployment**. Weathering of alkaline materials can also release byproducts like trace metals, impacting fragile marine ecosystems.

### Way Forward: CDR as a policy

- ◆ According to IPCC, CDR methods require appropriate governance and policies as they can also cause adverse side-effects apart from the predicted benefits. To accelerate research and development and incentivise CDR deployment, a political commitment to formal integration into existing climate policy frameworks is



required, including reliable measurement, reporting, and verification of carbon flows.

- ◆ According to IPCC, CDR methods require appropriate governance and policies as they can also cause adverse side-effects apart from the predicted benefits.

## COMMUNITY RIGHTS AND FOREST CONSERVATION

**Context:** The recently passed Forest (Conservation) Amendment Act, 2023 brings substantial legislative changes to the Forest (Conservation) Act of 1980, a crucial environmental law in India governing forest conservation. However, it has received limited attention and little discussion about its impact on forests and their inhabitants.

### Background:

- ◆ **Forest Conservation Amendment Act of 2023:**
- ◆ From the colonial forest law in 1865 to the Forest Conservation Amendment Act, 2023, more than fifteen laws, Acts, and policies have been formulated interlinking forests with legal and policy frameworks.
- ◆ **Rights of indigenous communities:** There is little to no recognition of the rights of indigenous communities in these Acts, who are the rightful inhabitants of forest lands.

### What is the new amendment?

- ◆ **Critical Issues:** At first glance, the amendment primarily aims to tackle the critical issues of climate change and deforestation's adverse effects, focusing on effective management and afforestation.
- ◆ **Forest use for economic drive:** The law further aims to determine how forests can be utilised for economic gain, and the manner in which it seeks to achieve this goal is outlined in the legislation.
  - ▶ The primary method used to achieve this objective involves removing forests from the law's jurisdiction, thereby facilitating various forms of economic exploitation.
  - ▶ As per the amendment, the forest law will now apply exclusively to areas categorised under the 1927 Forest Act and those designated as such on or after October 25, 1980.
  - ▶ **Non-applicability of Act:** The Act will not be applicable to forests that were converted for

**non-forest use** on or after December 12, 1996 and land which falls under 100 kilometres from the China and Pakistan border where the central government can build linear projects.

- ▶ **Security infrastructure:** To establish security infrastructure and facilities for surveillance, the central government is authorised to construct security measures in areas up to ten hectares.
- ▶ **Vulnerable regions:** This provision also applies to areas (up to five hectares) which are designated as vulnerable.
- ▶ **New Initiatives:** Initiatives like ecotourism, safari, environmental entertainment, and more may be implemented in these areas. The main objective of these initiatives is to improve the livelihoods of those reliant on forest resources, a goal that has drawn criticism from tribal communities and human rights activists.

### Why was the amendment brought in?

#### The Godavarman Thirumulkpad case:

- ◆ **Interpretation of forest land:** A prominent legal dispute that came before the Supreme Court in 1996, led to an interpretation of forest land in accordance with its 'dictionary meaning'.
- ◆ **All Private Forest:** Subsequently, all private forests were brought under the ambit of the 1980 law.
- ◆ **Restrictive use of forest land:** This has been a subject of debate as it was argued that the legislation primarily aims to restrict forest land from being used for various non-forest purposes, including the conversion of land for large-scale industries.
- ◆ **Opposition to law:** The law has faced significant opposition, especially from private landowners, individuals, and organisations involved in forest conservation, for its perceived adverse impact on the country's industrial progress.
- ◆ **Exclusion of forest and industrial growth:** In other words, the need to exclude forest land from the legal framework was mainly driven by the requirements of the industrial classes in the country.

#### What did the JPC recommend?

- ◆ Of the 31-member JPC addressing the issue, only six individuals were from the opposition. The critical comments from the committee members and public appear to have been largely disregarded; reduced to dissenting notes, holding a minority viewpoint on the Bill.
- ◆ A few days after the Act was enacted, the Odisha government revoked the "deemed forest" status in the State but had to later cancel the order due to public outrage and cited that it is waiting for



detailed rules and guidelines from the concerned Central Ministry.

- ◆ If the government were to **remove the forests from the purview of the Forest Conservation Act**, it would **effectively obstruct indigenous communities** from asserting their rights.

### What happened to the stipulation of 'prior consent'?

- ◆ **Prior Consent:** The Forest Conservation Act underwent important amendments in 2016 and 2017, which stipulated that **prior consent** from the **tribal gramasabha** was mandatory for any alterations to forests for non-forest purposes.
- ◆ **Removal of Prior Consent:** However, the recent revisions to the legislation have removed the **necessity for such consent**. Nevertheless, in this situation, State governments can proactively engage in specific activities within this framework through the inclusion of gramasabhas, particularly in matters of land acquisition for various purposes, by establishing State-level steering committees.
- ◆ **Adivasigramasabhas** : But numerous State governments might hesitate on this aspect, as they hold a preconceived notion that **Adivasigramasabhas** are '**anti-development**,' and they fear that their decisions could hinder economically lucrative afforestation initiatives.

### What is compensatory afforestation?

- **Compensatory afforestation**, as outlined in the new legislation, encompasses various projects and schemes that can be undertaken by both private individuals and organisations (including large corporations) for afforestation or reforestation purposes.
- The Compensatory Afforestation Act encountered **significant challenges** in the past, primarily due to **ambiguities in the original legislation** and shortage of available land.
- The **goal of the new amendment** is to streamline the process. However, there is apprehension regarding the potential environmental implications of this amendment.
- The law mandates that for **every parcel of land that is lost due to afforestation efforts**, an equivalent amount of land must be afforested elsewhere. It does not specify the type of trees that should be planted, leaving room for discretion.

### How does this affect the Forest Rights Act (FRA)?

- ◆ **Impact of FRA:** The FRA has had notable impacts in various regions, such as the **Mendha-Lekhain Maharashtra**, **Loyendi in Odisha**, and **Malakkappara in Kerala**.

- ◆ **Low Enthusiasm of Government:** Despite the initial enthusiasm, it appears that **both the Central and State governments have become less enthusiastic** about implementing the FRA in their States.
- ◆ **Convert forest land for non-forest purposes:** Many consider the Act as an impediment to convert forest land for non-forest purposes. The State government and its bureaucracy hold the view that granting community rights under the FRA could weaken the State's authority over the forest.
- ◆ **Limit Adivasi Claims:** The government has opted to reduce or dilute the extent of forest areas, rather than amend the FRA, thereby limiting the potential for additional Adivasi claims.
- ◆ **Human-animal conflicts:** The amendment also fails to address the growing issue of human-animal conflicts in forest areas, particularly in the Adivasi hamlets of the Western Ghats region. This conflict not only endangers the livelihoods of the Adivasis but also poses a threat to wildlife.

### What are the problems?

- ◆ **Challenges to forest dwelling communities:** Once the law is put into practice, it presents substantial challenges to forest dwelling communities and government agencies.
- ◆ **Conflicting ideas of governance:** The concept of afforestation, which offers considerable financial incentives to private individuals and institutions for afforestation projects, fundamentally clashes with the idea of forest governance.
- ◆ **Decentralised forest governance:** It contradicts the concept of decentralised forest governance as forests in the country fall under the concurrent list. Such governance practices are against the spirit of federal norms.
- ◆ **Security Threat:** Moreover, defining strategic linear projects becomes exceptionally complex and vague. Unlike external security threats like border disputes and cross-border skirmishes, internal environmental security should also be considered a significant concern, especially in States that consistently face natural disasters.

**WORLD TO GET WARMER  
BY NEARLY 3°C BY END OF  
CENTURY: UN REPORT**

**Context:** The Emissions Gap Report noted that in 2023, 86 days have breached the 1.5 degree Celsius temperature threshold.

### What UN Report says?

- ◆ **Breach of 1.5 degree Celsius:** As many as 86 days this year so far have already breached the 1.5 degree Celsius temperature threshold, as global greenhouse gas emissions scaled a record high in 2022.
- ◆ **3 degree Celsius:** With current climate policies of countries, the world was set to become warmer by at least 3 degree Celsius by the end of the century.
- ◆ **World CO2 emission:** The world, together, emitted 57.4 billion tonnes of carbon dioxide in 2022, a 1.2 per cent increase over the previous year and higher than the previous record achieved in 2019, according to the Emissions Gap Report by UNEP.

### World CO2 emission analysis:

- ◆ The emissions of **China and the United States, the world's two biggest emitters**, also rose in 2022, as did that of **India, the third largest emitter**.
- ◆ But the **European Union, Russia and Brazil** saw **emissions go down** a bit.
- ◆ If all the climate actions as per the current promises were carried out, global emissions in 2030 would still be at least **19 billion tonnes of CO2 equivalent higher than the level required to keep global warming within 1.5 degree Celsius** from pre-industrial times.

### How this emission gap can be tackled:

- ◆ **CO2 emission decline:** To meet this gap, global emissions would need to drop by at least 8.7 per cent every year from 2024 (instead of the 1.2 per cent rise that happened in 2022).
- ◆ **Proactive world actions:** The failure of the world to take early action on climate had brought it into a situation where meeting the 1.5 degree Celsius target looks extremely difficult.
- ◆ **Annual emission reductions:** The annual emission reductions necessary to achieve emission levels consistent with the below 2°C and 1.5°C scenarios by 2030 would have been only 0.7 per cent and 3.3 per cent on average.
- ◆ **Below 2°C pathway:** To reach emission levels consistent with a below 2°C pathway in 2030, the cuts required per year are now 5.3 per cent from 2024, reaching 8.7 per cent per year on average for the 1.5°C pathway.

### Way Forward:

- ◆ The **impacts of inaction** are already evident with the year 2023 all **set to emerge as the hottest ever**, overtaking the previous record of 2016.
- ◆ According to an assessment by the **World**

**Meteorological Organisation**, one of the next four years is almost certain to **breach the 1.5 degree Celsius threshold** for the annual average as well.



**Context:** In theory, the argument switching to renewable energy will generate investments and jobs are elegant but reality is something else.

### Energy Dynamics:

- ◆ **Dependency on Fossil Fuel:** The world is highly dependent on fossil fuels, which produce 80% of the total energy supplied.
- ◆ **World's total energy:** In 2022, oil, coal, and gas accounted for 30%, 27%, and 23% of the world's total energy, while solar and wind energy sources together contributed only 2.4%.
- ◆ **Per capita energy:** Further, the per capita energy supplied in India during 2022 was 37% of the global average, and only 26% of that of China.
- ◆ **Human Development Index:** Since per capita energy is directly related to the Human Development Index, we can expect that India's energy needs will continue to grow in the foreseeable future.

### Energy Security:

- ◆ **Energy from renewables:** Only 10.4% of the 36.44 exajoules of India's primary energy consumption in 2022 are from renewables (hydroelectric, solar, and wind); coal and oil gas account for 55.1% and 33.3%, respectively.
- ◆ **Coal-fired thermal power plants (TPPs):** It generated 74.3% of India's electricity during FY 2022-2023; generation by TPPs continues to grow to meet demand.

### Emissions from India:

- ◆ **Emissions from Fossil Fuels:** India's cumulative emissions from fossil fuels and industry between the start of the industrial revolution in 1750 and the end of 2021 are only 3.3% of the global total.
- ◆ Far behind those of Europe (31%), the U.S. (24.3%), and China (14.4%).

### The coal and renewable energy's place in the electricity sector:

- ◆ **Renewable energy capacity:** According to **Central**

**Electricity Authority (CEA)** projections for FY 2031-2032, India's national grid can absorb 924 TW of electricity from various renewable energy sources by progressively adding 47 GW of battery storage capacity and 27 GW of pumped storage projects by FY 32.

- ◆ **Battery storage capacity:** Any major increase in battery storage capacity in India will require the **import of critical minerals** like lithium, cobalt, nickel, and graphite, which are controlled by other countries (mainly China), posing significant **risks to India's energy security**.
- ◆ **Domestic coal:** **Ninety-six percent of the coal** used by TPPs in India comes **from domestic mines** and is key to why electricity is so affordable in India.

### Does coal transport have environmental impacts?

- ◆ **Transport of raw Coal:** The transport of unwashed raw coal to TPPs located **more than 500 km from the mines** also means **transporting millions of tonnes of ash-producing non-coal material**.
- ◆ **Supply of washed coal:** The **government can mandate** miners to supply only washed coal to all TPPs located more than 500 km from mines or ports **to reduce carbon dioxide emissions** and **other environmental pollution**.

### What's the issue with flue-gas desulphurisers?

- ◆ **Low sulphur content in India:** Indian coal – other than that from Assam and Meghalaya – has **lower sulphur content** than that **mined in other coal-rich countries**.
- ◆ **Effect of Sulphur emission:** According to the U.N. IPCC, historical sulphur dioxide emissions have created a cooling effect by producing sulphate aerosols that block some of the incoming solar radiation and enhance cloud formation, **masking global temperature rise by 0.5 degrees Celsius**.
- ◆ **Power plant pollutants:** The government can implement a **'graded priority'** of power plant pollutants: particulate matter, carbon dioxide, sulphur dioxide, nitrogen oxides, and mercury, in that order.
- ◆ **Reduction in particulate emissions:** This way, India can reduce particulate emissions by 99.97% by installing the cost-effective, high-performance electrostatic precipitators and reserve FGDs for TPPs near urban areas.

### Are there other low-carbon development strategies?

- ◆ **Supercritical technologies:** Some 30% of the current

TPP capacity in the country is from supercritical or ultra-supercritical technologies, which are also being installed in the 35 TPPs under construction.

- ◆ **Advanced ultra-supercritical technology (AUSC):** TPPs based on advanced ultra-supercritical technology (AUSC), with a proven efficiency of 46%, will also reduce carbon dioxide emissions by 15% compared to TPPs equipped with supercritical technology.

### Low Carbon Development:

- ◆ **Common But Differentiated Responsibilities:** Such a challenge can be tackled according to the principle of **'common but differentiated responsibilities and respective capabilities'** enshrined in the UNFCCC and in the Paris Agreement.
- ◆ **Long-term Low-Emissions Development Strategy:** For India, low-carbon development is not a choice but a necessity, and the steps to achieve this are reflected in the **'Long-term Low-Emissions Development Strategy'** it submitted to the UNFCCC.

### Way forward:

- ◆ The developed countries will take the lead in combating climate change and provide new and additional climate-specific financial resources and technology transfer to developing countries as under the provisions existing under the UNFCCC and the Paris Agreement.

## NEED TO CHECK PLASTIC POLLUTION

**Context:** Traces of microplastics have been found in breast milk, tap water and the bloodstream of humans.

### UNEP Report:

- ◆ According to a **United Nations report**, the **world is producing around 430 million tonnes of plastics every year** of which two-thirds are for short-term use.
- ◆ The production and consumption of plastic products have **grown exponentially** since the 1950s.
- ◆ A **2022 report** by the **Organisation for Economic Co-operation and Development (OECD)**, titled **'Global Plastics Outlook: Policy Scenarios to 2060'**, states that if the present trends persist **global plastic production will triple and exceed 1 billion tonnes by the year 2060**.

### Plastic Waste generation and its Impact:

- ◆ About **350 million tonnes** of plastic waste are

generated every year of which less than 10 percent is recycled, about 15 percent is incinerated while the remaining is dumped in landfills or littered on land, rivers, lakes, and the oceans.

- ◆ This has led to adverse economic, social, environmental and health impacts.
  - ▶ **Health:** Plastics can take up to 500 years or more to decompose and emit harmful pollutants that degrade the environment and are harmful to humans, and animals including livestock, aquatic, and marine life.
  - ▶ **Environment:** Plastic waste dumped in soils affect soil quality, soil biodiversity, and groundwater aquifers.
  - ▶ **Biodiversity:** Cases of wild animals, birds and cattle dying due to the ingestion of microplastics are not uncommon.
- ◆ A news report in 2017 stated that about a thousand cows die every year in Lucknow alone from ingesting plastic and other waste.

### Microplastics in humans:

- ◆ Traces of microplastics have been found in **breast milk**, tap water and the **bloodstream of humans**.
  - ▶ A study conducted by **Environment International in 2022** found the presence of microplastics in **80 percent of the blood test samples** of the surveyed population.
  - ▶ According to the study, people may be ingesting **3,000-4,000 microparticles of plastics** through their tap water every year.

### Microplastics traces over World:

- ◆ The study found the **contamination rate of tap water** with microplastics to be the **highest (94 percent)** in the US, followed by Lebanon and India.
- ◆ A study conducted in 2017 found that **83 percent of tap water samples** from around the world contained **plastic pollutants**.

### Microplastics in Ocean:

- ◆ It is estimated that **11 million tonnes of plastics** enter the oceans every year and this is projected to triple in the next two decades.
- ◆ **Plastic waste**, apart from **other debris** such as abandoned fishing nets and gear caused by poorly regulated commercial fisheries, have been found in all oceans and at all depths.
- ◆ Over the period **1970 to 2019**, an estimated 30 million tonnes of plastic waste have accumulated in the oceans while over 100 million tonnes have accumulated in rivers and lakes.

- ◆ **Plastics account for 85 percent of marine litter** and have aggravated marine pollution and affected marine species and coastal activities.
- ◆ Experts suggest that around **100,000 marine mammals** such as whales, dolphins, seals, and turtles **die every year due to marine plastic pollution**. Every year about a million sea birds die due to ingestion of microplastics or getting entangled in plastic debris. Some studies even suggest that by the year 2050, we may find more plastics in the seas than fish.

### Plastic Pollution and Global Warming:

- ◆ **Annual Social and Environmental costs:** According to a 2023 report by the **UN Environment Programme (UNEP)** on 'Turning off the tap: How the world can end plastic pollution and create a circular economy', the **annual social and environmental costs** of plastic pollution are estimated to range \$300-600 billion a year, with some suggesting it to be still higher at around \$1.5 trillion a year.
- ◆ **Plastics and Greenhouse gas:** Plastic pollution will also contribute to global warming. The UNEP report states that under a business-as-usual scenario, **plastics will contribute about 19 percent of greenhouse gas emissions by 2040**.
- ◆ **Poor most vulnerable:** The adverse costs and impacts of plastic pollution will fall disproportionately on the poor.

### Reuse, Recycle and Reorient

- ◆ **Changed Approach:** To tackle the crisis, the **UNEP report** has proposed a systematic approach of relying on the well-known **3R strategy—reuse, recycle and reorient**—plus diversify and tackle the legacy of such pollution.
- ◆ **Employment:** The report states that these measures could lead to an **80 percent reduction in plastic pollution** and a net **increase of 700,000 jobs by 2040**.
- ◆ **Opportunities in Informal Sector:** It will create new opportunities in the informal sector as well as encourage innovation. Apart from reducing the annual greenhouse gas emissions by 0.5 gigatonnes of carbon-dioxide-equivalent, it could lead to a \$1.3 trillion in savings in direct public and private costs between 2021 and 2040, and avoid \$3.3 trillion of environment and social costs due to plastic pollution.

### Circular Economy:

- ◆ The **OECD report suggests** a host of measures to tackle the adverse environmental impacts of plastic use and encourage a **circular economy**.



- ◆ **Taxation:** These include **raising taxes on plastics and plastic packaging**; giving **incentives to reuse and repair plastic items**; **mandating targets for recycled content** in new plastic products; providing extended producer responsibility schemes; improving waste management infrastructure and hiking litter collection rates.

### Way Forward:

- ◆ **Plastic Ban:** Although most countries in the world, including India, have banned the manufacture and use of single-use plastics, this addresses only a fraction of the problem.
- ◆ **Legally Binding Global Plastics Treaty:** The fifth UN Environment Assembly, which met in Nairobi in March 2022, resolved to enact a legally binding global plastics treaty by 2024 to tackle the crisis—this was endorsed by all the 193 member countries. This will, hopefully, move us on the path to a zero-pollution world sought to be achieved by 2050.

## GWP100 OR GWP\*: MEAT, DAIRY LOBBY PUSHING FOR NEW METHANE METRIC AND ENABLING GREENWASHING

**Context:** New method takes current methane emissions as baseline to present minor reductions as negative emissions or cooling.

### About GWP\*:

- **GWP\* was developed in 2016** by a team of researchers from **Oxford University**, led by two academics who argued it was more accurate than the current systems used to report national methane emissions at the international level.
- It was then **introduced in 2018 at 24th Conference of Parties (COP24)** to the **United Nations Framework Convention on Climate Change**.

### Greenwashing:

- **Greenwashing** is the process of conveying a **false impression or misleading information** about how a company's products are environmentally sound.
- Greenwashing involves making an **unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly** or have a greater positive environmental impact than they actually do.

### Background:

- ◆ **GWP\*:** Some of the world's big, industrialised meat and dairy companies have been promoting a **new metric for measuring methane emissions**, called GWP\* (pronounced as GWP star), which they argue is a **more accurate way to calculate emissions** from the greenhouse gas (GHG).
- ◆ **Manipulation of GHGs:** However, by adopting this new method, they can **manipulate their overall GHG emissions** and escape accountability by falsely claiming climate neutrality.
- ◆ **Under 2015 Paris Agreement:** The established metric **under the 2015 Paris Agreement** for **measuring the global warming potential** of a gas over a **100-year period is GWP100**, which is the global warming potential evaluated over a **100-year timeline**. It focuses on the absolute level of emissions.
- ◆ **GWP100 vs GWP\*:** GWP100 **measures the warming effect** of a quantity of a **non-carbon dioxide (CO2) GHG**, emitted at a given point in time, relative to an **equal amount of CO2**. On the other hand, **GWP\* focuses on changes in emissions over decadal timescales** rather than absolute levels.

### What Seeing Stars Report Said:

- The **application of GWP\* at a national or corporate level** requires setting certain parameters that can radically alter how the impact of the same emissions is presented.
- Depending on the choice of baseline year, **the same volume of methane emissions can be described as causing warming, nowarming or even cooling**.
- This has meant it can be used by **major methane emitters to justify continuing business as usual**, resulting in lack of action to cut methane emissions

- ◆ The paper argued that by **taking current levels of methane emissions** as their baseline, **high-polluting countries and companies can use GWP\*** to present even minor reductions in methane as negative emissions or cooling.

### Case Study of Tyson and Fonterra

#### Tyson Emissions

- ◆ The researchers looked at **different levels of emissions reductions** for **Tyson**, one of the world's largest processors of chicken, beef and pork and **Fonterra**, the largest dairy exporting company.
- ◆ Using both GWP100 and GWP\* metrics, they found that **companies could claim climate neutrality with tiny levels of annual emissions reductions, 1.4 per cent and 1.7 per cent**, respectively, by using the second method.



- ◆ **Emission reduction for Tyson:** With a **30 per cent emissions reductions by 2030**, Tyson would be responsible for roughly **58.5 million tonnes of CO<sub>2</sub>-equivalent using GWP100**. Half of these emissions would be from methane. The emissions amount is similar to the **annual emissions of Peru**.
- ◆ However, using **GWP\*** could enable the company to claim to be reducing around **82.6 million tonnes of CO<sub>2</sub> equivalent** from the atmosphere.

### Fonterra Emissions

- ◆ For Fonterra, a **30 per cent reduction between 2020 and 2030 calculated with GWP\*** would enable the company to **claim negative emissions** (efforts in which CO<sub>2</sub> is being removed from the atmosphere) of minus **19 million tonnes of CO<sub>2</sub> equivalent**.
- ◆ But **GWP100 calculations** showed it would still be responsible for roughly **21.6 million tonnes of CO<sub>2</sub>-equivalent** — similar to annual emissions of Sri Lanka.

### Case Study of New Zealand:

- ◆ A similar trend for New Zealand, where **half of all emissions come from agriculture, mostly methane**, showed that with a **modest 10 per cent reduction in methane emissions**, the country could report negative methane using GWP\* by 2038.

### Efforts to push for GWP\*

- ◆ The researchers found evidence of the **big agriculture lobby pushing the GWP\* methodology** in New Zealand, Ireland, United States and other regions.
- ◆ At least **16 industry groups across the UK and New Zealand**, including Beef + Lamb New Zealand and UK farming unions, have jointly urged the IPCC in 2020 to adopt GWP\* for assessing warming impacts.

### Why GWP\* is contentious

- ◆ **Climate Change Commitment Goals:** The ability to easily compare the contributions of different gases to climate change to assign accountability and set fair goals is crucial for global climate commitments. The time horizon used to determine the GWP is important because it affects how much weight is given to short-term warming.
- ◆ **Lobbying for GPW\*:** It claimed that the industry and trade groups were heavily lobbying for GWP\* to be used in government policy, international standards and private carbon counting initiatives.
- ◆ **Global Criticism:** But it has been criticised on a global policy level because it has the potential to reward the highest historically polluting countries or companies for their past GHG emissions by giving them credit for slight decreases from a high baseline.

- ◆ **Penalize emitter countries:** The methodology will also penalise countries with historically low levels of methane emissions for small increases.



## GREENHOUSE GAS LEVELS HIT RECORD HIGH IN 2022: WMO

**Context:** As per the report by World Meteorological Organisation (WMO), Carbon dioxide levels reached 50% higher than pre-industrial levels.

### Greenhouse Gas rising levels:

- ◆ **GHG rise:** The concentrations of greenhouse gases (GHG) that trap heat in the Earth's atmosphere rose to record levels in 2022, according to the GHG bulletin released by the World Meteorological Organisation (WMO) on November 15, 2023.
  - ▶ The rise in concentrations of GHGs is mainly due to the use of fossil fuels for various human activities.
- ◆ **Effects of GHGs rise:** This would lead to a further rise in global average temperatures, sea-level rise, glacial melting and increase in frequency and intensity of rapid-onset extreme weather events such as torrential rainfall, flash floods, tropical cyclones and heatwaves.
- ◆ **Current GHG levels:** Global average concentrations of carbon dioxide (CO<sub>2</sub>), which is the most important GHG, reached 417.9 parts per million, for the first time in 2022.
  - ▶ The figure is 50 per cent higher than pre-industrial levels. "They (concentration levels) continued to grow in 2023," said a press release by the **World Meteorological Organization (WMO)**.
- ◆ **Historical Comparison of GHG:** The last time CO<sub>2</sub> concentration was at this level was **3-5 million years ago**, when the Earth's average temperature was **2-3 degrees Celsius** warmer and sea levels were 10-20 meters higher than present.

### How much CO<sub>2</sub> causes global warming?

- Around 50 per cent of this CO<sub>2</sub> remains in the atmosphere, causing global warming.
- Around 25 per cent is absorbed by the oceans, causing ocean acidification, which is harmful for marine plants and animals.
- Another 30 per cent is absorbed by ecosystems on land, such as forests.
- All these are known carbon sinks, though there is considerable year-on-year variability in them.

**Other Major GHGs:**

- ◆ The concentrations of the other two major GHGs — **methane and nitrous oxide** — also grew in 2022.
- ◆ **Methane:** It has the second-highest concentration in the atmosphere, reached **1,923 parts per billion**.
- ◆ **Nitrous oxide:** It has the third-highest concentration in the atmosphere, reached **335.8 parts per billion**. It saw the highest year-on-year increase from 2021 to 2022. The gas is 300 times more potent than CO<sub>2</sub> at trapping heat.

**Global Warming by GHGs:**

- ◆ CO<sub>2</sub> accounts for 64 per cent of the global warming effect, while methane accounts for 16 per cent and nitrous oxide accounts for 7 per cent.

**WMO Analysis:**

- ◆ **Net Zero:** Given the long life of CO<sub>2</sub>, the temperature level already observed will persist for several decades even if emissions are rapidly reduced to Net Zero.
- ◆ **Socioeconomic and environmental costs:** Due to GHG emissions, the socioeconomic and environmental costs will soar. We must reduce the consumption of fossil fuels as a matter of urgency.
- ◆ **Interspherical interaction:** There are still a lot of uncertainties in understanding the mechanisms of how CO<sub>2</sub> moves between the ocean, the land biosphere and the permafrost areas, as per the organisation.

**Way Forward:**

- ◆ **Action Oriented Goals:** These **uncertainties, however, must not deter action**. Instead, they highlight the need for flexible, adaptive strategies and the importance of risk management in the path to net-Zero and the realization of the Paris Agreement's goals.
- ◆ **Timely and accurate Data:** The provision of accurate, timely, and actionable data on greenhouse gas fluxes becomes more critical in recent times.
- ◆ **Sustainable shifts:** The need for encouraged sustainable shifts in industry perspectives and practices by eliminating incentives and subsidies for plastic producers, manufacturers and distributors. It is also all for imposing appropriate fees and restrictions on industries.
- ◆ **Alternatives to Plastics:** It also laid emphasis on the identification of sustainable alternatives to plastics to protect human health and the environment, particularly by addressing plastics or chemicals in plastics. The latter are known carcinogens, endocrine disruptors and substances that persist, bio-accumulate and are toxic in the environment.



## INDIAN RESEARCHERS DETECT X-RAY POLARIZATION IN EXTRAGALACTIC BLACK HOLE

**Context:** Recently, a research led by Scientists from IIT Guwahati and UR Rao Satellite Centre (URSC) has discovered that X-Ray Polarization in Extragalactic black hole.

**What is a Black Hole?**

- ◆ A black hole is formed when **stars collapse**, leading to a space in the universe with an escape velocity — the speed at which an object must travel to override a planet or an object's gravitational force.
- ◆ Because light cannot get out, black holes are invisible and can only be tracked with the help of spatial telescopes and special tools.
- ◆ The light cannot go out because the **gravity inside a black hole is very strong** as a result of a lot of matter being squeezed into a small space.

**Extragalactic black hole:**

- Extragalactic astronomy is the branch of astronomy concerned with objects outside the **Milky Way galaxy**.
- In other words, it is the study of all astronomical objects which are not covered by galactic astronomy.
- So, extragalactic black holes are found **outside the Milky Way galaxy**.

**About the Study:**

- ◆ **Polarized emissions:** For the first time, a team of researchers from the **Indian Institute of Technology (IIT) Guwahati** and the **UR Rao Satellite Centre of the Indian Space Research Centre (ISRO)** have detected polarized emissions from a black hole source that exists beyond our Milky Way Galaxy.
- ◆ **Black hole sources:** These findings open a new window to investigate and understand the nature of astrophysical black hole sources.
- ◆ **Large Magellanic Cloud X-3 (LMC X3):** It is a binary star system consisting of a black hole and a 'normal' star that is "much hotter, bigger, and more massive than the Sun.
- ◆ **Location:** The system is located in a **satellite galaxy** of the **Milky Way**, nearly 2,00,000 light years away from planet Earth.
- ◆ **Satellite galaxy of Milky Way:** Since its discovery in 1971, it has been observed by various satellites. However, there has been a gap in understanding the

polarization properties of X-rays emitted by highly energetic objects like stellar mass black holes in the universe.

- ◆ **The Imaging X-ray Polarimetry Explorer (IXPE):** The researchers studied LMC X-3 using 'The Imaging X-ray Polarimetry Explorer (IXPE)', NASA's first mission to study polarization of X-rays from celestial objects.
- ◆ **Additional Data:** They also used simultaneous broad-band coverage of the **Neutron Star Interior Composition Explorer (NICER) Mission** and the **Nuclear Spectroscopic Telescope Array (NuSTAR) Mission** to constrain the spin of LMC X-3.

### Significance of the Study:

- ◆ **X-ray Polarimetry:** It is a unique observational technique to identify where radiation comes from near black holes.
- ◆ **Powerful X-rays:** LMC X-3 emits X-rays that are 10,000 times more powerful than those from the Sun.
- ◆ **Changes the polarization characteristics:** When these X-rays interact with the material around black holes, specifically when they scatter, it changes the polarization characteristics, i.e. **degree and angle**.
- ◆ **Behavior of matter drawing towards black hole:** This helps in understanding how matter is drawn toward black holes in the presence of intense gravitational forces.



### NICED MAKES QUICK DETECTION OF DRUG-RESISTANT H. PYLORI POSSIBLE

**Context:** It takes weeks to know drug resistance through culture, drug-resistant studies of *H. pylori* are seldom carried out in India; empirical treatment using clarithromycin drug is routinely used without knowing the drug-sensitivity.

### Drug Resistant *H. pylori* Detection:

- ◆ A two-step PCR-based assay of a small region of the ***Helicobacter pylori* (*H. pylori*)** bacteria can help **detect *H. pylori* infection** and also **identify clarithromycin-resistant bacteria** and **those that are drug-sensitive in six-seven hours** has been developed by a team of researchers from the **National Institute of Cholera and Enteric Diseases (ICMR-NICED), Kolkata**.

### Time required culturing the *H. pylori*:

- ◆ Since *H. pylori* bacteria grow slowly, it **takes about a week to culture the bacteria** and **a couple of more**

**weeks to test for drug-sensitivity**, which the new diagnostic assay bypasses.

- ◆ The molecular-based assay has been found to have 100% sensitivity and specificity.

### Infections caused by *H. pylori*:

- ◆ **Most of the infections** caused by the bacterium *H. pylori* **are asymptomatic**, 10–15% of them develop peptic ulcer disorders or stomach cancer.
- ◆ In India, ***H. pylori* infections affect 60-70% of the population**. *H. pylori* infection is often **acquired during childhood** and **remains in the stomach throughout life if not treated** with antibiotics effectively.
- ◆ So, if someone suffers from **gastroduodenal diseases** along with the detection of *H. pylori* infection, **eradication of the bacteria provides the most effective treatment**.
- ◆ Importantly, ***H. pylori* infection is one of the robust known risk factors for gastric cancer**.

### Genome Sequencing:

- ◆ The team from NICED turned to genome sequencing to identify that the drug resistance was due to a **point mutation (A to G mutation at 2143 position)** in the **23S ribosomal RNA (rRNA)** gene of the bacteria.
- ◆ To confirm that the point mutation was indeed responsible for drug-resistance, the researchers **isolated and amplified 617 base pairs that contained the point mutation** and transferred the base pairs to drug-sensitive bacteria.

### A two-step PCR-based test to detect *H. pylori* infection:

- ◆ The researchers developed a **two-step PCR-based assay** to **first detect *H. pylori* infection** and **then to differentiate resistant isolates from sensitive ones** directly from biopsy samples.
- ◆ In the initial step of PCR, the **617 base-pair segment containing the point mutation was amplified** using DNA templates isolated from biopsy samples.
- ◆ In the **second PCR step, 183 base pairs amplified by the first PCR step** are used as a template.
- ◆ For the second PCR step, **two allele-specific primer sets** have been designed by exploiting the point mutation in the resistant strains.
- ◆ The **clarithromycin-resistant strains** will get amplified only by the resistant-specific primer and not with the sensitive-specific primer.

### Significance of *H. pylori* test in India:

The two-steps PCR method was evaluated by comparing

it with the conventional drug sensitivity method and also by sequencing analysis, which showed 100% sensitivity and specificity.

- ◆ A two-step PCR-based assay of a small region of the *Helicobacter pylori* (H. pylori) bacteria can help detect H. pylori infection and also identify clarithromycin-resistant bacteria and those that are drug-sensitive in six-seven hours has been developed by a team of researchers from the National Institute of Cholera and Enteric Diseases (ICMR-NICED), Kolkata.
- ◆ In India, **H. pylori infections affect 60-70% of the population**. H. pylori infection is often acquired during childhood and remains in the stomach throughout life if not treated with antibiotics effectively.
- ◆ Bioinformatics study revealed that drug-resistant and drug-sensitive strains had very different binding affinity for the drug — the drug's binding affinity to the mutant was weaker compared with drug-sensitive bacteria.



**Context:** Philosophy of Matter and Materialism as concepts and Indian lens.

### Exploring the philosophy of Materialism

- ◆ **Philosophy** may be defined as a **unified theory of life**.
- ◆ The **function** of philosophy is to **explain the universe and all its constituents**. To provide oneself with a comprehensive **view of life**, and to have this view serve as a frame of reference for all of one's actions.
- ◆ Materialism is **neither new nor mystical**. It has been around as a **system of thought** since the earliest records of **human history**.
- ◆ **Materialism**, simply put, **postulates** that the **origin of everything that really exists is matter**; that there does not exist anything but matter.
- ◆ That all other appearances, including **intelligence, are transformations of matter**, and these transformations are governed necessarily by **laws inherent in nature**, which is fundamentally material.
- ◆ At its core, philosophy is essentially materialism, understanding the world based on tangible, real-world observations through contemplation, **observation and investigation**.
- ◆ Even though the discoveries in quantum physics challenged some ideas in the early 20th century,

the **concept of 'matter' as the substance of the physical world still remains**.

### The roots of materialism and historical analysis

- ◆ **In ancient India**, Materialism found grounding with the **Lokāyata**, which was pioneered by philosophers like **Brhaspati, Ajita, and Jābāli**, among others.
- ◆ **The early Greek philosophers** sought to explain the world by itself were materialists.
- ◆ **Examples:** The atomism of Democritus, and Epicurus, as well as the preSocratic philosophers' desire to find an explanation for the constituents of the cosmos was the earliest examples of Materialism in the western tradition.
- ◆ Materialism is a **philosophy that exists everywhere but is yet without a home**.
- ◆ In **India**, the theologically inclined **claim that materialism is a western philosophical construct**, while in the West, **faith based philosophers decry the evils of materialism**.
- ◆ Both in the West and closer home, materialism is painted as a hedonic (a way of living that is associated with pleasure and indulgence) indulgent way of living.
- ◆ Yet, so many of the wondrous inventions of our age, as well as the many terrifying weapons we make, owe their development to the progressive understanding human beings have seized from nature's core.

### Countering the established views

- ◆ **Ancient times were periods of great resource crunches**. Even if the **king was wealthy**, the populace at large lived on subsistence, and elaborate ceremonies began to **dictate the lives of the people** as the natural religion of the early **Vedic era gave way to the dogmatic ritualism** that developed over time in ancient India.
- ◆ This was not unopposed. The **Upanishads frankly chastise this obsession** with dogmatic sacramentalism and look back to the earliest period of the Vedas. Such profundity of thought is reflected in the early Chāndogya Upanishad, "**All this is Brahman**."
- ◆ Everything comes from Brahman, **everything goes back to Brahman**, and everything is sustained by Brahman. One should therefore quietly meditate on it. Each person has a mind of his own. **What a person wills in his present, he becomes in the future. One should bear this in mind and will accordingly.**"
- ◆ A worldview that sees God in all things and all things in God, leaves little room for traditional religion, and philosophically opens the floodgates of materialism,



for it **solidifies the real world as divine, and makes it manifest.**

- ◆ From the time of **Brhaspati, the materialists of ancient India** had held that the **world** was real, **made up of elements, available to human perception**, and that ethics, if any, and followed these hard facts.
- ◆ With the **rise of Buddhism and Jainism**, as well as other social and political developments in the post Vedic age, the **dominant role that Lokāyata enjoyed went into decline.** However, the influence of Materialism continued to be felt long after it went out of popular convention.

### Lokāyata: Philosophy of Worldliness

- ◆ The term **“Lokā”** denotes the world, emphasizing the visible and tangible aspects. The **Mahābhārata’s** guidance, **‘lokesucasamobhava’** or ‘see all things with equanimity,’ encapsulates the essence of Lokāyata.
- ◆ In essence, Lokāyata is a philosophy **grounded in the material world**, dealing with observable objects and entities.
- ◆ **Debiprasad Chattopadhyaya**, an Indian **Marxist philosopher, succinctly defines Lokāyata** as the philosophy of the people, **signifying worldliness or instinctive materialism.**
- ◆ He emphasizes its reliance on the practical test of reality and the imperative of change at every stage.

### Bhautikvad

- ◆ Derived from the word Bhautika, which **means physical or material.** Bhautika itself is derived from Bhu, and its derivative **Bhava, meaning being and becoming respectively.**
- ◆ As such, Bhautika Vignyan continues to be the word for physical sciences in many laboratories across India.
- ◆ One of the names for God, often **referred to as ‘Prabhu’** in the theological tradition, literally means that which is ‘prior to being’.
- ◆ **Jadavāda** refers to the **tendency of the Materialists to seek out the jada** or root of existence, which they said was material than spiritual.
- ◆ **Jatavidyā**, or knowledge of the origin of all things, was what they extolled. This desire to seek out the genesis of things is as ancient as human life.
- ◆ In traversing the expansive landscape of philosophy, materialism emerges as an age-old companion to human contemplation. Defined as a unified theory of life, philosophy aims to elucidate the universe and provide a comprehensive framework for human actions. Materialism, existing since the earliest human records, posits that the origin of all that exists is rooted in ‘matter’.

- ◆ Materialism, whether as Lokāyata in ancient India or manifesting as Bhautikvad, remains a philosophy grounded in the tangible, observable aspects of the world. It beckons humanity to explore the genesis of existence, fostering a dynamic relationship between philosophy, materiality, and the evolution of human understanding.



### GPS ANKLE MONITORS: ETHICS OF TECHNOLOGY AND LAW

**Context:** Recently first time in India GPS ankle monitors were installed on an individual out on bail to track his movements. This raises multiple Questions of ethics.

- ◆ **Major Concern:** The **faulty nature of the monitors** can result in unintended consequences for accused persons. Besides, it would be highly imprudent to assume that the police in India are well-equipped to use this technology.
- ◆ This brings to fore the ethical concerns regarding the Electronic Monitoring.

### Background:

- ◆ On November 5, a Special Court in Jammu granted bail to **GhulamMohd Bhat** who has been accused of terror financing under the Unlawful Activities Prevention Act, 1967 on the condition that Bhat wears a GPS tracker around his anklet.
- ◆ With this order, the Jammu and Kashmir police became the first in the country to deploy a GPS-enabled, wearable tracking device to monitor and record the movement of an accused released on bail.

### Conditions for Bail- Why?

- ◆ In spite of the norm **“Bail over Jail”**, certain conditions are put for the accused. **Conditions imposed for bail** usually are meant to ensure that those released refrain from contacting victims or witnesses, tamper or manipulate evidence or commit any further crimes.
- ◆ As such, conditions often require them to **stay in a certain geographic area** or **prohibit them from leaving the jurisdiction of the court** without permission. **Tracking movements**, thus, is useful in checking compliance with such conditions and ostensibly GPS-enabled trackers are a crucial tool in doing so.

### Key Questions and Concerns

- ◆ **Validity and reliability of the technology in use-** Error proneness of Technology.



- ◆ **Capacity of Police to use high end Tech-** Concerns regarding training and Capacity building of Police.
- ◆ **Legal issues and application of UAPA-**
  - ▶ The concerns get even more heightened w.r.t. Indian Criminal Justice system as very little focus is on critical and corrective thinking along with tech enable-ness- Examples are plenty, forensics, cybercrime etc. The tech competence of police in India has come under question time and again.. Whether it is the appreciation of forensic evidence in courts, or the usage of GPS-enabled devices for monitoring accused persons, technology is perceived to be error-free and objective by most stakeholders in the criminal justice system including the law enforcement personnel and the judiciary.
  - ▶ **The nature of rules, Laws and Court procedures** make it difficult for the processing of such technology to act as support to the legal proceedings.

### Limitations of Technology

- ◆ **Unhindered connection with sky and good communication** networks are needed. They are available in urban areas but overall the challenges remain on this front.
- ◆ **Accuracy concerns of the GPS.**
- ◆ Other **physical factors** like Buildings, foliage, and weather conditions can lead to a poor quality of signals.
- ◆ **Dependency on batteries-** Malfunction and Discharge
  - ▶ **Case:** One such instance where the failure of technology led to severe consequences for the accused, despite no fault of his own is the case of Kevin Jones. Jones was arrested by the police in Oakland County, Michigan (the US) for violating conditions of his release on probation – because the battery of his “tether”, the GPS-enabled device used to track him, malfunctioned when he was asleep.

### International Experience

- ◆ Proneness to “**False Alarms**”-Research conducted by the University of Chicago shows that ankle monitors are highly prone to false alarms due to poor signal.
- ◆ **Challenges for Police** to determine the **genuineness** of an alert.
- ◆ **Lack of Training** of personnel to handle such sophisticated tech.

### Caution

- ◆ Given such attitudes, it is not surprising that GPS-enabled trackers have been **readily adopted** in

the administration of criminal justice **without due diligence**. However, it is important that we take a step back and confront the questions about the **validity and reliability** of this technology, as well as the capacity of our law enforcement personnel to use it. Moving ahead with the use of GPS trackers without **addressing these fundamental issues** carries serious risks for the fair trial rights of accused persons.

## Conceptual and Analytical Discourse

### Technological Ethics

- ◆ The application of GPS ankle monitors raises significant **technological ethics concerns**, primarily revolving around the **reliability and validity of the technology** in question. The technology's track record, as evidenced by experiences in other jurisdictions, highlights its susceptibility to errors. Issues such as the need for an **unobstructed view of the sky, dependence on a robust cellular network, and vulnerability to atmospheric hindrances** pose substantial challenges, especially in diverse and dynamic environments like India. The assumption of optimal conditions, a prerequisite for accurate tracking, becomes a critical point of contention.

### Legal Ethics

- ◆ From a legal ethics perspective, the introduction of GPS ankle monitors as a bail condition raises concerns about the **potential infringement of the accused person's rights**. Conditions imposed for bail are traditionally designed to prevent further crimes or tampering with evidence. However, the use of technology that is inherently flawed and prone to malfunctions introduces the risk of false accusations and unjust consequences for the accused.

## Electronic Monitoring and Ethical Concerns

### Ethical Question 1: Privacy Concerns and Intrusiveness

- ◆ EM utilizes sophisticated tracking technologies for real-time monitoring of individuals, raising questions about privacy infringement. Critics argue that this encroachment violates fundamental human rights, especially in pre-trial cases where individuals may undergo monitoring without a jury conviction. On the other hand, proponents contend that EM is less intrusive than incarceration, emphasizing its role in safeguarding domestic violence survivors. Balancing the scales between privacy rights and public safety becomes paramount.

### Ethical Question 2: Impact on Third Parties

- ◆ Research reveals that EM disproportionately affects adult male offenders, potentially reinforcing

traditional gender roles. Home confinement, a common aspect of EM, may place a heavier burden on women, contributing to gender inequality. Additionally, the stigmatizing nature of EM can lead to social isolation for the families of offenders, creating a sense of punishment for crimes they did not commit.

### Ethical Question 3: Financial Implications

- ◆ The financial dynamics of EM introduce ethical dilemmas. While governments see it as a cost-effective alternative, placing the financial burden on offenders, often from economically disadvantaged backgrounds, raises concerns. The potential for long-term economic consequences, coupled with limited employment opportunities during EM, adds complexity to the ethical discourse.

### Ethical Question 4: Loss of Control Over Public Perception

- ◆ The visibility of EM devices raises questions about an individual's right to control their public image. Restrictions on clothing choices and potential social stigmatization can impact an offender's self-esteem and rehabilitation prospects. Balancing public safety concerns with the individual's right to choose what information to disclose becomes a delicate ethical challenge.

### Ethical Question 5: Technological Failures and Unjust Imprisonment

- ◆ The imperfect nature of technology introduces ethical concerns regarding unjust imprisonment. Technical glitches, from connectivity issues to inaccurate signals, could lead to false accusations and

potential incarceration. Striking a balance between technological advancements and safeguarding against unjust punishment is a critical aspect of the ethical considerations surrounding EM.

### The takeaway

- ◆ Despite the ethical questions raised by the adoption of EM, its benefits as a humane, cost-effective alternative to incarceration cannot be ignored. To address these concerns, a multi-faceted approach is necessary, including smarter EM programs, public education, family support, and rigorous testing protocols. By implementing these measures, societies can navigate the ethical complexities associated with EM, making it a more acceptable alternative to traditional prison sentences.

### Conclusion

- ◆ As India pioneers the use of GPS ankle monitors in the context of bail conditions for UAPA-accused individuals, it is imperative to address the dual dimensions of technological and legal ethics associated with this innovation. Critical evaluation, transparent discourse, and enhanced training for law enforcement personnel are necessary steps to ensure that the deployment of GPS tracking technology aligns with the principles of fairness, justice, and the protection of individual rights in the Indian criminal justice system. Failing to address these ethical concerns may jeopardize the intended objectives of this technological intervention and compromise the integrity of the legal process.



## *Section B*

### [CONTEMPORARY ISSUES BASED ESSAY]

#### Topic

☞ "A Society that has more justice is the society that needs less charity"



## “A SOCIETY THAT HAS MORE JUSTICE IS THE SOCIETY THAT NEEDS LESS CHARITY”

In the intricate tapestry of human coexistence, the notions of justice and charity stand as pillars shaping the contours of a society. While charity seeks to address immediate needs and alleviate suffering, justice endeavors to create a fair and equitable social order. The relationship between these two concepts is nuanced, and it prompts us to ponder whether a society that champions justice requires less charity. This essay will delve into the symbiotic connection between justice and charity, exploring how a just society lays the groundwork for reducing the necessity of charitable endeavors.

Justice, as a societal principle, encompasses the fair distribution of resources, opportunities, and rights among its members. In a just society, individuals are treated with dignity and equality, irrespective of their background or circumstances. The pursuit of justice inherently implies the dismantling of systemic barriers that perpetuate inequality, ensuring that everyone has access to education, employment, and healthcare. When justice is embedded in the social fabric, the need for charity to rectify the consequences of systemic injustices diminishes.

A society founded on justice promotes inclusivity and equal opportunities. By dismantling structural impediments, such as discrimination based on race, gender, or socio-economic status, justice ensures that individuals are empowered to chart their own destinies. In such a society, the need for charitable interventions to uplift marginalized communities is reduced, as the root causes of their struggles are addressed through systemic changes.

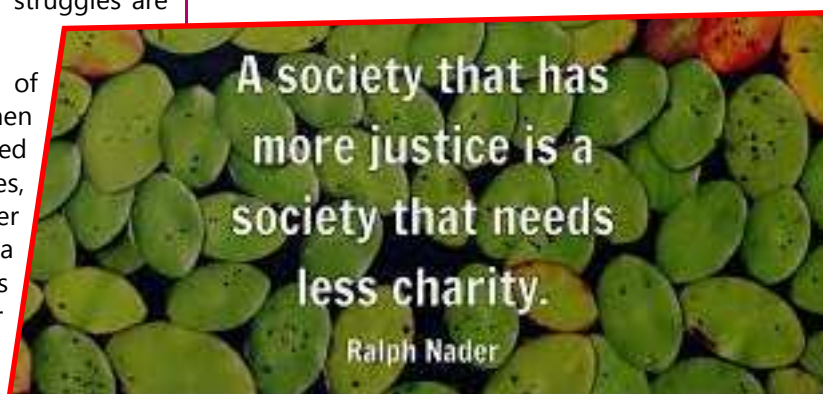
Moreover, justice fosters a sense of community and social cohesion. When individuals perceive that they are treated fairly and have equal opportunities, the bonds that tie society together are strengthened. This unity creates a supportive environment where citizens are more inclined to help one another without relying solely on charitable acts. In a just society, the ethos of

solidarity emerges as a natural byproduct, diminishing the dependence on external assistance.

However, it is crucial to acknowledge that justice alone may not eradicate all forms of suffering or hardship. Unforeseen circumstances, natural disasters, or individual misfortunes can still occur. Hence, charity retains its relevance as a compassionate response to immediate needs. Yet, in a society underpinned by justice, charitable efforts are streamlined to address specific, exceptional cases rather than serving as a pervasive solution to systemic problems.

In contrast, a society that lacks justice becomes reliant on charity as a Band-Aid for deeply rooted issues. When inequality is rampant, opportunities are unevenly distributed, and systemic injustices persist, charitable endeavors often serve as a palliative measure rather than a transformative force. In such societies, charity becomes a means to temporarily alleviate the symptoms of inequality without addressing the root causes, perpetuating a cycle of dependency.

In conclusion, the relationship between justice and charity is intricate but holds profound implications for the well-being of a society. A society that champions justice inherently diminishes the need for widespread charity by rectifying systemic injustices, fostering inclusivity, and nurturing a sense of community. While charity remains a vital tool for addressing immediate needs, it is in the pursuit of justice that we find the path towards a society where the call for charity is a resonant echo rather than a constant plea.



## Section C [PRELIMS]

To Attempt

Weekly Current Affairs Test, Visit

[www.iasscore.in](http://www.iasscore.in)

- ☞ UNESCO's Creative Cities Network
- ☞ Products from Uttarakhand bag GI tags
- ☞ Kambala to be held in Bengaluru for the first time
- ☞ Season of Cyclones
- ☞ India and Australia hold 2+2 Ministerial Dialogue
- ☞ Indo-Pacific Regional Dialogue (IPRD)
- ☞ Supreme Court (SC) on Governor's power to review Bills
- ☞ 'Amplifi 2.0 portal' for Urban Development
- ☞ Cabinet Approval for 16th Finance Commission
- ☞ SATHEE portal
- ☞ '75 Creative Minds of Tomorrow'(CMOT) initiative
- ☞ What is BhumiSamvaad?
- ☞ AGNI – Ayurveda GyanNaipunya Initiative
- ☞ PM PVTG Development Mission
- ☞ Nagaland Legislative Assembly passes reservation for Women
- ☞ Adaptation Gap Report 2023
- ☞ 'Ghol' declared state fish of Gujarat
- ☞ Meteorological conditions in Antarctic ozone hole
- ☞ Shrinking mudflat ecosystem of Kerala
- ☞ Report on Sand and dust storm (SDS) released
- ☞ Services PMI (Purchasing Managers Index)
- ☞ Basic Animal Husbandry Statistics 2023
- ☞ Government makes biogas blending mandatory
- ☞ Onattukara sesame
- ☞ E-Commerce cargo movement starts course on NW 1
- ☞ Maritime reconnaissance aircraft
- ☞ The chimaeras of nature and their promise to grow human organs
- ☞ Generic drugs to treat four rare diseases launched
- ☞ Decentralised Autonomous Organisations
- ☞ 25 years of the International Space Station
- ☞ e-SIM





## UNESCO'S CREATIVE CITIES NETWORK

**Context:** Recently, the city of Kozhikode in Kerala was added in UNESCO's Creative Cities Network (UCCN).

- ◆ The city has also produced many **film and theatre professionals** in the last half a century.

### The UNESCO Creative Cities Network (UCCN):

- ◆ **Background:** The UCCN was created in 2004 to promote cooperation among cities that have identified creativity as a strategic factor for sustainable urban development.
- ◆ It now includes **350 cities in over a hundred countries**.
- ◆ **Aim:** The network is aimed at leveraging the creative, social, and economic potential of cultural industries.
- ◆ **Objectives:**
  - ▶ It was launched to promote UNESCO's goals of cultural diversity and strengthen resilience to threats such as climate change, rising inequality, and rapid urbanisation.
  - ▶ It encourages a culture of creativity in urban planning and solutions to urban problems.

### Recent 'Indian cities' in the network:

- ◆ Kozhikode was included in the category of '**literature**' and Gwalior in the category of '**Music**'.
- ◆ Apart from **Kozhikode and Gwalior, Varanasi (music), Srinagar (crafts and folk arts) and Chennai (music)** are part of the network.
- ◆ Gwalior from Madhya Pradesh was also among the **55 new cities** to join the network.
- ◆ These cities have been handpicked to represent seven creative fields — **crafts and folk arts, design, film, gastronomy, literature, media arts, and music**.
- ◆ Kozhikode was included in the category of '**literature**' and Gwalior in the category of '**Music**'.

### Significance:

- ◆ The **UNESCO Creative Cities Network** allows member cities to recognize creativity as an essential component of urban development, notably through partnerships involving the public and private sectors and civil society.
- ◆ It envisages developing hubs of creativity and innovation and broadening opportunities for creators and professionals in the cultural sector.

- ◆ These cities have to achieve the **UN agenda of sustainable development**.

### Areas of action

- ◆ The objectives of the network are implemented both at the level of the member cities and at the international level, notably through sharing experiences, knowledge and best practices.
- ◆ There are professional and **artistic exchange programmes, research and evaluations** on the experience of the creative cities, among other activities.

### What is the role of member cities after joining UCCN?

- ◆ Every four years, member cities are required to submit a **Membership Monitoring Report**, with the aim of demonstrating their steadfast commitment towards the implementation of the UCCN Mission Statement.
- ◆ They present an **action plan** for the following four years, **providing insights into their achievements** and lessons learnt, as well as the impact of the designation.

The last conference was held in **Santos, Brazil**, and this year's conference was in Istanbul.

- The next conference will be held in July 2024 in **Braga, Portugal**.

### The annual conference of network cities:

- ◆ A highlight of the network is the annual conference of mayors and other stakeholders of network cities, which offers a unique occasion to strengthen ties between creative cities from across the world.
- ◆ The main objective of the conference is to **exchange practical information** on policies and activities carried out by cities and stimulate inter-city collaborations.



## PRODUCTS FROM UTTARAKHAND GoT GI TAGS

**Context:** G.I tags been provided to products from Uttarakhand.

### Key Highlights-

- ◆ **Uttarakhand's Berinag tea:** Highly sought-after by London tea houses and tea blenders, is made from the leaves of a plant that grows wild in the Himalayas, which are then compressed into a solid mass.
- ◆ **Bichhubuti fabrics:** Made from Himalayan nettle

fibres, was also on the list of products that bagged the GI tag. As the plant's fibres are hollow, they have the unique ability to accumulate air inside, thus creating a natural insulation and making an ideal clothing material for both winters and summers.

- ◆ **Mandua:** A finger millet grown in Garhwal and Kumaon that is part of the staple diet in many parts of the State.
- ◆ **Jhangora:** It is a home grown millet commonly cultivated in the rain-fed areas of the Himalayas in Uttarakhand.
- ◆ **Gahat:** One of the most important pulses growing in the dry regions of the State, whose medicinal uses have been known to Ayurveda and traditional physicians for centuries.

### Other products which got GI tags included:

- ◆ *Lalchawal:* Red rice organically grown in the Purola region.
- ◆ *kalabhat* (black soybean);
- ◆ malta fruit;
- ◆ *chaulai (ramdana)*, a grain used on fasting days;
- ◆ *buransh* juice obtained from the red flowers of the *Rhododendron arboreum*; *paharitoor dal*;
- ◆ Uttarakhand *likhai* or wood carvings,
- ◆ Nainital *mombatti* (candles),
- ◆ the *rangwalipichhoda* of Kumaon,
- ◆ RamnagarNainital litchis,
- ◆ RamgarhNainital peaches,
- ◆ Chamoli wooden Ramman masks, and
- ◆ AlmoraLakhori *mirchis*, a chilli variant.

### What are G.I tags?

- ◆ **Geographical Indications of Goods** are defined as that **aspect of industrial property** which refers to the **geographical indication** referring to a country or to a place situated therein as being the country or place of origin of that product.
- ◆ Typically, such a name conveys an assurance of quality and distinctiveness which is essentially attributable to the fact of its origin in that defined geographical locality, region or country. Under Articles 1 (2) and 10 of the Paris Convention for the Protection of Industrial Property, geographical indications are covered as an element of IPRs.
- ◆ They are also covered under **Articles 22 to 24** of the **Trade Related Aspects of Intellectual Property Rights (TRIPS)** Agreement, which was part of the Agreements concluding the Uruguay Round of GATT negotiations.

- ◆ India, as a member of the World Trade Organization (WTO), enacted the Geographical Indications of Goods (Registration & Protection) Act, 1999 has come into force with effect from 15th September 2003.



## KAMBALA TO BE HELD IN BENGALURU FOR THE FIRST TIME

**Context:** Bengaluru KambalaSamiti to organise this Cultural sport event in Bengaluru for the first time. Expected to be big event showcasing the cultural significance to a larger audience.

### About Kambala:

- ◆ An annual buffalo race taking the form of folk sport and a cultural celebration, held in the south western Indian state of **Karnataka**.



- ◆ The **racers try to bring the buffaloes under control** by holding their reins tight and whipping them. The Kambala racetrack is a slushy paddy field.
- ◆ In its traditional form, Kambala was **non-competitive** and buffalo pairs raced one after another in paddy fields.
- ◆ **It has a 700-year-old history.** During the early days of the festival it was known as Karaga celebrations. Later it came to be known as Kambala celebrations. Also observed as **thanksgiving to gods** for protecting the animals from diseases.
- ◆ Sponsored by local **Tuluva landlords and households in the coastal districts of Dakshina Kannada** and Udupi of Karnataka and Kasaragod of Kerala, a region collectively known as Tulu Nadu.
- ◆ The **Kambala season generally starts in November and lasts until March.** These are organized through Kambalasamithis.

**Cultural significance of Event:**

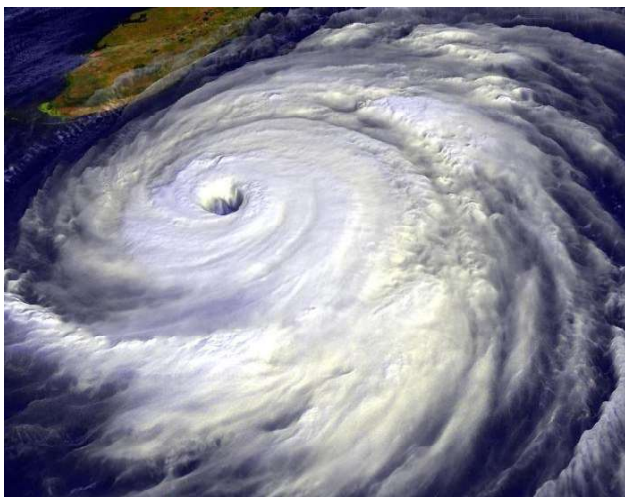
- ◆ Along with kambala sports, there will a food court with close to 200 stalls showcasing food from the coastal Karnataka region,
- ◆ Cultural programmes celebrating **Karavali culture**. The goal is to bring the culture of Kambala to Bengaluru.
- ◆ **Karavali**in Kannada **refers to the coastal area of Karnataka**. This **region has immense natural beauty** also its own **unique cultural traditions and rich heritage**. The KaravaliUtsav is a celebration of the rich dance, music, culture, and nature of the Karavali region.

**Different beliefs on origin of Kambala:**

- ◆ Originated in the farming community of Karnataka. The festival is dedicated to Lord KadriManjunatha, an incarnation of Lord Shiva.
- ◆ The festival was started by the HoysalaKingsto see if the buffaloes could be trained and used in war.

**SEASON OF CYCLONES**

**Context:** Low pressure area forming mid-November expected to intensify into a depression & undergo rapid intensification.

**Cyclones in Bay of Bengal**

- ◆ **Two back-to-back low-pressure areas** may be forming in the Bay of Bengal, both of which could further **intensify into cyclones**. One of them could also become a severe cyclone.
  - ▶ **South Andaman Sea:** The **first low pressure area**, induced by an upper air cyclonic circulation over the **South Andaman Sea**, the India

Meteorological Department (IMD) shared. This system may gain strength to become a depression by mid-November.

- ▶ **Bay of Bengal:** Another upper air cyclonic circulation has formed over the south-western parts of the Bay of Bengal. This may also induce a low-pressure area.
- ◆ **Fujiwhara Effect:** The simultaneous formation of the second low-pressure area could lead to its interaction with the earlier system. Such an interaction is known as the **Fujiwhara effect**.

**About Fujiwhara Effect:**

- When **two ocean storms** (storms, cyclones, hurricanes or typhoons) have formed in the **same region**, are **spinning in the same direction** and **pass close enough to each other**, "they begin an intense dance around their common centre", according to the **National Weather Service (NWS)** of the **National Oceanic and Atmospheric Administration, United States**.
- If **one of the storms is a lot stronger** and bigger than the other, the **smaller one will revolve around the bigger one** and "**come crashing into its vortex to be absorbed**".
- "**Two storms closer in strength can gravitate towards each other until they reach a common point and merge, or merely spin each other** around for a while before shooting off on their own paths. In rare occasions, the effect is additive when the hurricanes come together, resulting in one larger storm instead of two smaller ones," according to NWS.

**The Storm situation in India:**

- ◆ **Unlikely of Fujiwhara Effect:** The **second low-pressure area** will likely form after the dissipation of the first system so the possibility of them interacting under the Fujiwhara effect is not much.
- ◆ According to Down to Earth, **both the low pressure areas could intensify into cyclones** with the earlier system also possibly **intensifying into a severe cyclone**.
- ◆ The low pressure area forming today earlier would intensify into a depression and undergo **rapid intensification (RI)**.
  - ▶ **Rapid intensification:** RI occurs when a **tropical cyclone gains wind speeds of 56 kilometres per hour or more** in a span of 24 hours. RI generally makes it difficult for weather agencies to predict the track and intensity of tropical cyclones.
- ◆ **Recent cyclone studies:** Many recent tropical cyclones have undergone RI, which is mainly due to **warmer-than-usual sea surface and subsurface temperatures**. For instance, **cyclone Freddy** in February-March 2023 became the first tropical

cyclone ever to experience seven phases of rapid intensification over its lifetime.

- ▶ **Cyclone Freddy:** The cyclone had its **genesis near Australia** and moved all across the **southern Indian Ocean** to devastate **Madagascar, Malawi and Mozambique.**
- ▶ **Cyclone Biparjoy:** Cyclone Biparjoy in the Arabian Sea in June 2023 also showed RI.

### Threat of cyclones on Indian Coasts:

- ◆ While the threat of the **Fujiwhara effect is far off**, back-to-back cyclones with RI in tow could create considerable impacts along the Indian coasts.

## INDIA AND AUSTRALIA HOLD 2+2 MINISTERIAL DIALOGUE

**Context:** Recently, the Indian Defence Minister and External Affairs Minister **S. Jaishankar met Australian Deputy PM and Defence Minister Richard Marles and Foreign Minister Penny Wong as part of the second India-Australia 2+2 Ministerial Dialogue.**

### Points of Importance:

- ◆ From the perspective of enhancing strategic ties between India and Australia, both sides emphasized on further co-operation in information exchange and Indo-Pacific Maritime Domain Awareness.

**Maritime domain awareness (MDA)** is defined by the International Maritime Organization as the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment.

- ◆ Cooperation in the areas of air-to-air refuelling and hydrography was also discussed.

**Hydrography:** It is the science that measures and describes the physical features of the navigable portion of the Earth's surface and adjoining coastal areas. Hydrographic surveyors study these bodies of water to see what the "floor" looks like.

- ◆ Both countries recognized the potential of deepening cooperation in defense industry and research as a means to enhance their already strong relationship.
- ◆ They Identified potential areas of collaboration including shipbuilding, ship repair and maintenance, as well as aircraft maintenance, repair, and overhaul.
- ◆ The shared vision of the countries shall assist them

to collaborate in specialized training areas such as Artificial Intelligence (AI), Anti-Submarine Warfare, anti-drone warfare, and the cyber domain, highlighting a commitment to developing advanced defense capabilities.

- ◆ Two sides also held discussions on joint research in underwater technologies and collaboration between defense start-ups signifies a push for innovation and technological advancement in defense strategies.
- ◆ **Commitment to strengthen bilateral defense relations** and expressed satisfaction over increasing military-to-military cooperation, joint exercises, exchanges, and institutional dialogues was also reaffirmed by both sides.

### China Factor in India-Australia Relations:

- ◆ Both Australia and India support a rules-based international order and they are seeking to forge regional institutions in the Indo-Pacific which are inclusive, promote further economic integration.
- ◆ The countries' participation in Quad (India, Australia, US, Japan) is an example of their convergence of interests, based on shared concerns.

## INDO-PACIFIC REGIONAL DIALOGUE (IPRD)

**Context:** Addressing the Indo-Pacific Regional Dialogue (IPRD), the Indian Navy Chief has warned regarding militarization of Indo-pacific and fragile security situation in the South China Sea.

### About the Dialogue:

- ◆ The event was hosted jointly by the **Navy and National Maritime Foundation.**
- ◆ As per the statement by navy chief, the fragile security situation in the South China Sea, in addition to violations of established **Codes of Conduct or Confidence Building Measures**, poses a clear and present danger to order at the region.
- ◆ Navy chief Admiral R Hari Kumar has warned of China's aggressive behavior in the South China Sea and its violation of established codes of conduct, stating that it poses a clear danger to good order and discipline at sea.
- ◆ He also highlighted the militarization of the **Indo-Pacific region** and the potential for conflict due to differing interpretations of international laws.
- ◆ The statement emphasized the need for cooperative efforts among **like-minded maritime nations** to address these challenges.



**India's concern:**

- ◆ **India-Middle East-Europe Economic corridor (IMEC):** India's upcoming project and increasing involvement in IMEC can be hindered due to China's presence in Indian Ocean.

IMEC is a **multimodal economic corridor** that incorporates multiple networks of **Shipping, Railways, and Roadways** and will also include electricity cables, high-speed data cables, and a hydrogen pipeline.

- ◆ **China's 'grey zone' tactics:** The Chinese has been utilizing the operational space between peace and war to coerce neighbors and push its expansionist territorial claims in the Indo-Pacific, stretching from the South China and East China Seas to the land frontier with India.
- ◆ **Increasing militarization:** More than **50 warships** of extra-regional forces remain deployed in the IOR for various missions, including for anti-piracy patrol off the **Gulf of Aden**.



**Way Forward:**

- ◆ **International Partnerships:** Strengthen ties with like-minded nations that share similar concerns. Engaging in partnerships and alliances with countries that have mutual interests can enhance security in the region.
- ◆ **Maritime Security Initiatives:** Develop and participate in initiatives aimed at enhancing maritime security. This can involve joint patrols, information sharing, and coordinated efforts to combat piracy and other maritime threats.
- ◆ **Economic and Infrastructure Development:** Invest in economic and infrastructure development in the region. Economic stability can contribute to overall security and reduce tensions between nations.
- ◆ **Soft Power Diplomacy:** Utilize soft power elements, such as cultural exchanges, educational programs, and economic cooperation, to build positive relationships and understanding among nations.

**SUPREME COURT (SC) ON GOVERNOR'S POWER TO REVIEW BILLS**

**Context:** The Supreme Court emphasized that **Governors have limited power and should not compel state governments to pursue legal recourses.**

**Background:**

- ◆ Recently, after Kerala government has moved the Supreme Court against the governor, requesting the top court to declare Governor to exercise his constitutional powers and duties by keeping Bills passed by the legislature on hold for an indefinite period as a misdeed.

**About Supreme Court's View:**

- ◆ As per the apex court, the Governors must remember that they are not the **elected representatives** of



states and have limited power over **legislative actions** of an elected government.

### What are the legislative powers of Governor?

- ◆ **Article 163-** The Governor appoints the Chief Minister and other Ministers
- ◆ **Article 164-** Governor assents, withholds assent, or reserves the bill for the consideration of the President passed by the Legislative Assembly
- ◆ **Article 200-** Governors may promulgate the Ordinances under certain circumstances
- ◆ **Article 213-** Governors may promulgate the Ordinances under certain circumstances

### What are the Friction Points in Governor-State Relations?

- ◆ Governor is envisaged as an apolitical head who must act on the advice of the council of ministers. However, the Governor enjoys certain discretionary powers granted under the Constitution. For example:
  - ▶ Giving or withholding assent to a Bill passed by the state legislature,
  - ▶ Determining the time needed for a party to prove its majority, or which party must be called first to do so, generally after a hung verdict in an election.
- ◆ There are no provisions laid down for the manner in which the Governor and the state must engage publicly when there is a difference of opinion.
- ◆ The Governor has a 5-year tenure, he can remain in office only until the pleasure of the President.
  - ▶ In 2001, the National Commission to Review the Working of the Constitution held that the Governor owes his appointment and his continuation to the Union.
  - ▶ There is the apprehension that he is likely to act in accordance with the instructions received from the Union Council of Ministers.
- ◆ In the Constitution, there **are no guidelines for exercise of the Governor's powers**, including for appointing a CM or dissolving the Assembly.
- ◆ There is no limit set for how long a Governor **can withhold assent to a Bill**.
- ◆ The Governor sends a report to the centre which forms the basis of the Union cabinet's recommendations to the President for invoking **Article 356 (President's Rule)**.

### Steps taken to scrutinise Governor's actions:

- ◆ **Changes regarding the Selection of Governors:** The **National Commission To Review the Working of the Constitution** appointed by the AtalBihari Vajpayee government in 2000 suggested that the Governor of a State should be appointed by the President, after consultation with the Chief Minister of that State.
- ◆ **Proposal by Sarkaria Commission:** The Sarkaria Commission, set up in 1983 to look into Centre-state relations, proposed that the **Vice President of India** and Speaker of Lok Sabha should be consulted by the Prime Minister in the selection of Governors.
- ◆ **Punchhi Committee Proposal:** The Justice Madan Mohan **Punchhi Committee**, constituted in 2007 on Centre-state relations, proposed in its report that a committee comprising the Prime Minister, Home Minister, Vice President, Speaker, and the concerned Chief Minister should choose the Governor.
  - ▶ The Punchhi Committee recommended deleting the **"Doctrine of Pleasure"** from the Constitution, but backed the right of the Governor to sanction the prosecution of ministers against the advice of the state government.
  - ▶ It also argued for a provision for **impeachment of the Governor** by the state legislature.



### 'AMPLIFI 2.0 PORTAL' FOR URBAN DEVELOPMENT

**Context:** Recently, the Urban Affairs Ministry aims to provide data on Indian cities via dedicated portal.

#### The Need:

- ◆ The Union Ministry of Housing and Urban Affairs is making



raw data from Indian cities available on a single platform for academics, researchers, and stakeholders to help data-driven policy making.

- ◆ India has been witnessing rapid urbanisation over the last few years.
- ◆ By 2030, India is projected to have 60 crore (40%) of the population living in urban areas compared with 37.7 crore (31%) in 2011.
- ◆ According to the 2011 Census, urban India contributed 63% to the country's GDP, and this is projected to increase to 75% by 2030.

### About the Portal:

- ◆ The Amplifi 2.0 (Assessment and Monitoring Platform for Liveable, Inclusive and Future-ready urban India) portal was launched by the Ministry three weeks ago.
- ◆ Currently, 258 urban local bodies have been on-boarded, and data for 150 cities is available on the portal.
- ◆ Issue: A lack of data maturity in cities, and thus only 150 ULBs were able to share their data.
- ◆ Steps: Data quality parameters to every city have been sent by the ministry
- ◆ The Ministry used data provided by ULBs to rank cities based on four indices — the Ease of Living Index, Municipal Performance Index, Climate Smart Cities Assessment Framework, and Data Maturity Assessment Framework.

### Application and Future aspirations:

- ◆ Data from the more than 4,000 Urban Local Bodies will eventually be made available on the portal.
- ◆ **Types of Data:** For example,
  - ▶ the total diesel consumption;
  - ▶ the number of samples tested for water quality;
  - ▶ the average annual expenditure on healthcare;
  - ▶ The total number of people residing in slums; the fatalities recorded due to road accidents.
- ◆ The government is also planning to bring out different reports on subsets of the four indices.
- ◆ The Urban Outcomes Framework 2022, which has been developed for the Ministry by the National Institute of Urban Affairs and Ernst and Young, shifts the focus from the indices to the data with a comprehensive list of indicators.
- ◆ With this, data across 14 sectors is streamlined to increase focus on data collection, and disaggregated data can be analysed by domain experts.
- ◆ The initiative also provides the opportunity to create new frameworks based on open data.

- ◆ The 14 sectors are — demography, economy, education, energy, environment, finance, governance, health, housing, mobility, planning, safety and security, solid waste management, and water and sanitation.

## CABINET APPROVAL FOR 16TH FINANCE COMMISSION

**Context:** The Union Cabinet, chaired by Prime Minister Shri Narendra Modi, has approved the Terms of Reference (ToR) for the Sixteenth Finance Commission.

The **Fifteenth Finance Commission** was established in 2017, providing recommendations valid until the financial year 2025-26.

### Terms of Reference for the 16th Finance Commission-

- ◆ **Distribution of Net Proceeds:** Addressing the division of net tax proceeds between the Union and States, along with the allocation among States.
- ◆ **Principles for Grants-in-Aid:** Defining principles governing grants-in-aid of State revenues from the Consolidated Fund of India.
- ◆ **Resource Augmentation:** Identifying measures to supplement the Consolidated Fund of a State for empowering Panchayats and Municipalities, aligning with State Finance Commission recommendations.
- ◆ **Disaster Management Financing:** Reviewing current financing arrangements for Disaster Management initiatives, proposing recommendations based on the Disaster Management Act, 2005.

The Constitution (Article 280) mandates the formation of a Finance Commission every fifth year or earlier, aligning with the fiscal cycle.

### Timeline and Deliverables:

- ◆ The 16th Finance Commission is tasked to submit its report by October 31, 2025, covering a five-year period from April 1, 2026.
- ◆ This timeframe ensures a comprehensive assessment of the financial landscape preceding the recommendations.

**Finance Commissions:** FCs are constitutional bodies set up under Article 280 of the Constitution every five years to make recommendations on the distribution of financial resources between the Union and the states.

**Recommendations cover three main aspects:**

- **Vertical Devolution:**
  - ▶ The share of states in the divisible pool of central taxes.
- **Horizontal Distribution:**

The allocation of resources among states based on a formula that reflects their fiscal needs, capacities and performance.

- **Grants-in-aid:**
  - ▶ The additional transfers to specific states or sectors that are in need of assistance or reform.

**SATHEE PORTAL**

**Context:** Recently, an Entrance exam preparation portal **SATHEE (Self-Assessment Test and Help for Entrance Exams)** has been launched by the Ministry of Education (MoE) and IIT-Kanpur.

**About the Portal:**

- ◆ The Ministry of Education (MoE) has said to all States to encourage aspirants to utilise the newly launched portal for exam preparation — **SATHEE (Self-Assessment Test and Help for Entrance Exams)**.
- ◆ SATHEE is an open learning platform available to students **at no cost**.
- ◆ SATHEE has launched a **45-day crash course** for aspirants to test their level of preparation.
- ◆ SATHEE hosts **live and recorded lectures**, expertly designed curriculum, and doubt-clearing sessions [for students] to brush up their knowledge.
- ◆ The portal uses **Artificial Intelligence (AI)** to interact with students, and can be customised to each student's pace of learning.
- ◆ SATHEE's integrated **AI chatbot** helps students align their learning needs.
- ◆ SATHEE hosts lectures and video content prepared by **Professors and students of the IITs, and the All India Institute of Medical Sciences (AIIMS)**.
- ◆ Currently, digital learning material is available on the SATHEE portal in four languages — **English, Hindi, Odia, and Telugu**.

**Significance:**

- ◆ The initiative is in line with the **National Education Policy**, with the goal to provide inclusive, high quality education even to remote parts of the country.

**SATHEE PORTAL '75 CREATIVE MINDS OF TOMORROW' (CMOT) INITIATIVE**

**Context:** Recently, the Union Minister of Information & Broadcasting and Youth Affairs & Sports has launched the **'48-Hour Film making Challenge'** for winners of **'75 Creative Minds of Tomorrow'** (CMOT) initiative.

**About the Initiative:**

- ◆ **Aim:** The initiative aims to provide them with unparalleled opportunities in the realm of **Media and Entertainment**.
- ◆ CMOT is part of Government's effort to encourage and mentor young minds from far flung corners of the country.
- ◆ The role of **'Creative Minds of Tomorrow'** in fostering a strong creative community of passionate individuals, the Minister congratulated the top 75 participants of the initiative selected through a rigorous jury process.
- ◆ This year's 75 Creative Minds of Tomorrow hail from as many as **19 different states** and **Union Territories** of India, including places such as Bishnupur (Manipur), Jagatsinghpur (Odisha), and Sardarpur (Madhya Pradesh).
- ◆ As part of the Film Challenge, 75 CMOT participants were divided into five teams who will make short films on the topic **'Mission Life'** in **48** hours.
- ◆ The CMOT participants will also attend workshops and master class sessions curated by the masters of world cinema.

**54th IFFI:**

- The 54th edition of the **International Film Festival OF India** is dedicated to spotlighting the pinnacle of world cinema and providing a platform for filmmakers and talents worldwide.
- The 54th edition of IFFI is designed to provide a comprehensive view of the global film landscape.
- It has been organized in Goa.

**WHAT IS BHUMISAMVAAD?**

**Context:** Union Minister of Rural Development organised **BhumiSamvaad VII** in North East of India.

## What is BhumiSamvaad?

- It attempts to build upon the commonalities that exist in the arena of land records in various States to develop an appropriate Integrated Land Information Management System (ILIMS) across the country, on which different States can also add State-specific needs as they may deem relevant and appropriate.

**ILIMS:** The system contains information on parcel ownership, land use, taxation, location boundaries, land value, encumbrances and many more.

- It is being implemented by the Department of Land Resources (Ministry of Rural Development).
- Aim of the scheme is to usher in a system of updated land records, automated and automatic mutation, integration between textual and spatial records, inter-connectivity between revenue and registration, to replace the present deeds registration and presumptive title system with that of conclusive titling with title guarantee.

## Components of BhumiSamvaad:

- Computerization of land records.
- Survey/re-survey.
- Computerization of Registration.
- Modern record rooms/land records management centres at tehsil/taluk/circle/block level.
- Training & capacity building.

## Benefits:

- Real-time land ownership records will be available to the citizen.
- Free accessibility to the records will reduce interface between the citizen and the Government functionaries, thereby reducing rent seeking and harassment.
- Public-Private Partnership (PPP) mode of service delivery will further reduce citizen interface with Govt. machinery, while adding to the convenience.
- The single-window service or the web-enabled "anytime-anywhere" access will save the citizen time and effort in obtaining RoRs (Record of Rights), etc.
- Automatic and automated mutations will significantly reduce the scope of fraudulent property deals.
- Conclusive titling will also significantly reduce litigation.
- Certificates based on land data (e.g., domicile, caste, income, etc.) will be available to the citizen through computers.

- This method will permit e-linkages to credit facilities.
- Information on eligibility for Government programs will be available, based on the data.



## AGNI - AYURVEDA GYANNAIPUNYA INITIATIVE

**Context:** It is an initiative of Central Council for Research in Ayurveda Sciences (CCRAS) Ministry of Ayush, to promote evidence based medical practices in Ayurveda sciences.

## About the Initiative:

- Provide a **platform for Ayurveda practitioners to report their innovative** practices & and experiences in various disease conditions along with **promoting the culture of evidence-based** practice among Ayurveda Practitioners.
- The initiative also aims to **undertake research for mainstreaming pragmatic practices** through scientific validation and evidence-based appraisal.
- CCRAS will **document and publish the reported** medical practices and therapeutic regimens for education and academic purposes in consultation with **National Commission for Indian System of Medicine (NCISM)**.
- Creation of a database** through applications and capacity building through training in **research methods and good clinical practices**.
- Further **research will be taken up by CCRAS on the reported medical practices** for mainstreaming and scientific validation by developing research proposals in collaboration with Ayurveda Practitioners and other relevant institutes/ organizations.

## About CCRAS

- It is an apex research organization committed to **undertaking, coordinating, formulating, development** and promotion of research **on scientific lines in Ayurveda**.

## Initiatives by CCRAS:

- The Studentship Program for Ayurveda Research Ken (SPARK) for Undergraduate Scholars-** to boost scientific research through Ayurveda colleges and hospitals,
- Scheme for Training in Ayurveda Research for PG Scholars (PG-STAR)** for PG Scholars
- Scope for Mainstreaming Ayurveda Research in Teaching Professionals (SMART)** program for teachers.





## PM PVTG DEVELOPMENT MISSION

**Context:** Recently, the Prime Minister has launched Rs. 24000 Crores PM PVTG Development Mission for most vulnerable group amongst the Tribal Population.

### About the mission:

- ◆ **Objective:** The PM-PVTG Development Mission program aims to improve the **socio-economic status** of **Vulnerable Tribal Groups (PVTGs)**.
  - ▶ For this, availability of Rs.15, 000 crore for Scheduled Tribes has been envisaged in the Union Budget.
- ◆ **Key Parameters:**
  - ▶ The mission includes;
    - Providing basic facilities like safe housing,
    - Clean drinking water and sanitation,
    - Education, health and nutrition,
    - Better access to roads in settlements for backward scheduled tribes.

### Who are Particularly Vulnerable Tribal Groups (PVTGs)?

- ◆ The **Ministry of Home Affairs** has **designated 75 tribal groups** across 18 states and the Union Territory of Andaman and Nicobar Islands as Particularly Vulnerable Tribal Groups (PVTGs).
- ◆ Identified as the **most vulnerable among tribal communities**, the concept of PVTGs was introduced in 1975 by the Government of India.
- ◆ Initially comprising 52 tribal groups, this category expanded in 1993 with the inclusion of 23 additional groups, bringing the current total to 75.

Notably, **Odisha** has the highest concentration of PVTGs, with 13 groups, followed by Andhra Pradesh with 12.

### How are they classified?

- ◆ The Particularly Vulnerable Tribal Groups (PVTGs): PVTGs are more vulnerable among the tribal groups and are determined by the given criteria:
  - ▶ They have declining or stagnant populations,
  - ▶ low levels of literacy,
  - ▶ pre-agricultural levels of technology and
  - ▶ Economically backward.



## NAGALAND LEGISLATIVE ASSEMBLY PASSES RESERVATION FOR WOMEN

**Context:** Nagaland Legislative Assembly passes law to provide 33% reservation to women in Urban Local Bodies of the state.

### Salient features of the Act:

- ◆ The Nagaland Municipal Bill, 2023 was passed by the State Legislative Assembly in a special session called by the Governor.
- ◆ Nagaland Assembly unanimously passed the Bill which retained the 33% of seats in Urban Local Bodies for women.
- ◆ Reservation for the post of Chairperson in Urban Local Bodies has been done away with by the new Bill.
- ◆ Taxes related to immovable property to be appropriated by Urban Local Bodies have been removed from the new Bill.

### History of the issue:

- ◆ The earlier law i.e., Nagaland Municipal Act, 2001 was rejected by the people of Nagaland as they objected to reservation of women.
- ◆ This issue led to Municipal Councils not been held in Nagaland since 2004.
- ◆ Tribal societies have opposed reservation of seats for women in Municipal Council of Nagaland.

### Impact:

- ◆ Passing of the Nagaland Municipal Bill, 2023 is huge step in the direction of women's participation in politics and policy making.



## ADAPTATION GAP REPORT 2023

**Context:** According to the 2023 Adaptation Gap Report, the adaptation gap is growing even as climate change continues to create disasters across the globe.

### Adaptation Gap:

The difference between estimated financing **needs and costs of adapting** to climate change and finance flows in developing countries.



**Highlights of the Report:**

- ◆ **About:** The report released by the United Nations Environment Programme (UNEP).
- ◆ The report mentions that, the Developing countries will require 387 billion dollars per year for the next decade to implement projects that will assist them in adapting to climate change.
  - ▶ This figure makes up between **0.6 per cent and 1 per cent** of all developing countries' GDP combined.
- ◆ The report estimates that adaptation costs will increase significantly **by 2050** for most sectors, especially under high-warming scenarios.
  - ▶ For example, the annual costs of adaptation for coastal protection will go up with sea-level rise by 2050.
- ◆ The world has already warmed up by **1.1 degrees Celsius** since the preindustrial era.
  - ▶ Current climate action is inadequate to meet the Paris Agreement goal, which aims to limit temperature rise to 2°C, preferably to **1.5°C above** the preindustrial levels.
- ◆ Adaptation projects in developing countries receive funding from **public and private sources**.

Multilateral development banks, including the **World Bank**, are the largest providers of adaptation finance.

- ▶ However, their financial commitments decreased by 11 per cent in 2021 after seeing an increase from 2017 to 2020.

**Significance of the report:**

- ◆ The Adaptation Gap Report, published every year, examines how well the world is preparing for climate change.
- ◆ It looks at the ways countries are planning, financing, and implementing the projects they will need to endure droughts, floods, rising seas, and other climate-related challenges.

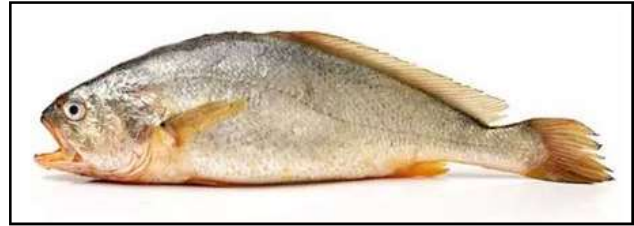

**'GHOL' DECLARED STATE FISH OF GUJARAT**

**Context:** Global Fisheries Conference 2023, held at Ahmedabad and announcement of 'Ghol' as state fish by Gujarat Government.

**About Ghol fish:**

- ◆ Also known as **Black Spotted Croaker fish**

**(Protonibeadiacanthus)** in many parts of the world, Ghol fish is not only considered a delicacy but is valued for its medicinal properties in many countries.



- ◆ **Ghol fish bladder** is among Gujarat's high-value exports.
- ◆ Ghol fish has various nutrients from iodine, omega-3, DHA, EPA, iron, taurine, magnesium, fluoride, to selenium, it is loaded with rich nutrients.
- ◆ Ghol fish is widely distributed in the **Indo-Pacific region from the Persian Gulf to the Pacific Ocean**.
- ◆ The levels of pollution have shifted these fishes from the shore to deep sea

**Benefits of Ghol fish**

- ◆ **Good for eye health:** This fish contains many vitamins, minerals, proteins, which helps in maintaining eyesight.
- ◆ **Prevent ageing and wrinkles:** The collagen content in the ghol fish prevents wrinkles and also keeps the elasticity of the skin intact.
- ◆ **Improves IQ of infants:** Omega-3 content in it improves IQ of infants if fed on a regular basis – it stimulates the growth of brain cells.
- ◆ **Toning muscles:** The black-spotted croaker is one fish that has tremendous benefits for toning muscles because of various minerals and vitamins. It provides Vitamin C that is required for collagen and elastin synthesis which has helps to supply essentials nutrients to the muscles.


**METEOROLOGICAL CONDITIONS IN ANTARCTIC OZONE HOLE**

**Context:** Meteorological conditions have largely driven fluctuations in the size of the Antarctic ozone hole, according to study published in Nature Communications.

**Minutes of the Study:**

- ◆ The **ozone hole** over the Antarctic has **not only grown larger but also thinner** throughout most of the spring.

**About Ozone Hole in Winters:**

- The ozone hole is a **region of exceptionally depleted ozone** in the stratosphere over the Antarctic. It happens at the **beginning of the Southern Hemisphere spring** from August through October.

- ◆ Despite making a **recovery in area and depth since the 2000s**, the Antarctic ozone hole has been **massive** in the last four years
- ◆ There is much **less ozone in the centre of the ozone hole** compared to 19 years ago.

**UNEP study on Ozone Hole:**

- ◆ The ozone layer is on track to **recover** within **four decades**

**NASA Study on Ozone Hole:**

- ◆ The hole **averaged 23.1 million square kilometres**, approximately the size of North America, making it the **16th largest** over this period.

**Changes in Antarctic Ozone Hole:**

- ◆ **Reduction in Ozone:** The researchers saw a **total reduction of 26 per cent at the core** of the ozone hole from **2004 to 2022**.
- ◆ **Effectiveness of Montreal Protocol:** The reduction is despite the **1987 Montreal Protocol on Substances that Deplete the Ozone Layer**, which regulates the production and consumption of **human-generated chemicals** known to deplete the ozone.
  - ▶ The Montreal Protocol on Ozone Depleting Substances quadrennial assessment report of 2022 confirmed the **phase-out of nearly 99 per cent of banned ozone-depleting substances**.

**Meteorological Conditions in Ozone Depletion:**

- ◆ **Ozone hole and Meteorological Conditions:** According to **UNEP, Meteorological conditions** could have largely driven fluctuations in the size of the **Antarctic ozone hole**, from **2019 to 2021**.
- ◆ **Other factors:** It is known that other factors such as **springtime temperature** and **wind patterns, aerosols from wildfires** and **volcanic eruptions**, as well as **changes in the solar cycle** ozone hole development could also be responsible.
- ◆ **Polar vortex:** The Antarctic ozone hole sits within the polar vortex, which is a **circular pattern of wind** in the **stratosphere** that **forms during winter** and is **maintained until late spring**.
  - ▶ Within this vortex, the Antarctic air from the **mesosphere** (the atmospheric layer **above the stratosphere**) falls into the stratosphere.

- ▶ **Ozone Chemistry:** This intrusion of air brings **natural chemicals** (nitrogen dioxide) which impact ozone chemistry in October.


**SHRINKING MUDFLAT ECOSYSTEM OF KERALA'S KADALUNDI KEEPS SHOREBIRDS AWAY**

**Context:** The inter-tidal mudflats are one of the richest foraging grounds for migrant shorebirds along India's west coast, and now, they are in danger of disappearing, because of both natural and anthropogenic factors

**About Kadalundi:**

- ◆ Kadalundi, on the south-west coast, had about 8 hectares of nutrient-rich inter-tidal mudflats in the early 2000s.
- ◆ Today, the expanse of mudflats in the estuary of the Kadalundipuzha river has reduced to just about 1 hectare.
- ◆ This too is gradually being covered with sand, depriving prey to thousands of shorebirds that migrate from colder climes in winter to Kadalundi village in Kozhikode district.

**About Mudflats:**

Mudflats, or otherwise known as tidal flats, are coastal wetlands that form when mud is left behind by tides or rivers. They're found in sheltered regions such as bayous, lagoons, estuaries, and bays. Mudflats might be seen geologically as exposed layers of bay mud, a result from :

- ◆ the deposition of estuarine silts
- ◆ marine animal detritus
- ◆ clays

The majority of the sediment in a mudflat is within the intertidal zone, therefore the flat is submerged and exposed about twice per day.

**Need for Mudflats conservation:**

- ◆ **Vanishing of Mudflats:** If the mudflats are not protected and restored, Kadalundi will vanish from the global map as a prominent destination of migrant shorebirds in a few years.
- ◆ **Biodiversity conservation:** It is the abundance of prey such as polychaetes and crustaceans in the mudflats that attract a wide variety of migrant shorebirds to Kadalundi from places such as Siberia, Ladakh, Mongolia, and Scotland.

### Efforts to conserve mudflats:

- ◆ **Ecotourism:** Efforts are on to popularise ecotourism in the Kadalundi-Vallikunnu Community Reserve (KVCR) by widening the expanse of mangroves.
- ◆ **Encroaching mangroves:** The 154-hectare KVCR had less than 50 hectares of mangroves until a few years ago, but these trees that thrive in salt water have proliferated so fast that they currently occupy more than 60 hectares.
  - ▶ **Decline in prey:** The sedimentation of sand on mudflats not only brings down the amount of prey there, but also helps mangroves easily proliferate.
  - ▶ **Invasive Characteristics:** The viviparous mangroves of Kadalundi, according to researchers, have been displaying an aggressively invasive behaviour.
  - ▶ **Mangrove vs Mudflat in carbon sequestration:** The mangrove lobby has been raising carbon sequestration as the key environmental factor for its promotion. But people often underestimate the significance of soil and mud in carbon sequestration. Soil contains nearly twice the amount of carbon compared to the combination of the atmosphere, vegetation, and animals.
- ◆ **Wetlands and grasslands:** Studies show that wetlands and grasslands have the capacity to sequester more carbon than many types of forests.

### Importance of Kadalundi:

- ◆ The mangroves of Kadalundi never attract shorebirds coming from colder regions.
- ◆ They prefer open mudflats where they are safe from predators.
- ◆ When the research was started in 2005, there were large congregations of migrant species such as the lesser sand plover, greater sand plover, common sandpiper, whimbrel, Eurasian curlew, common redshank, common greenshank, Kentish plover, Terek sandpiper, dunlin, and sanderling foraging voraciously during low tide.
- ◆ But now the prey depletion, because of sandbanks and mangrove proliferation, is forcing them to stay away from the mudflats.

### Way forward:

- ◆ **Tree plantation:** Haphazard tree planting without proper understanding is never advisable.
- ◆ **Holistic approach:** It is crucial to adopt a holistic approach that prioritises the protection of intact ecosystems and focuses on restoring the functionality of degraded ecosystems.



### REPORT ON SAND AND DUST STORM (SDS) RELEASED

**Context:** According to the UN Convention to Combat Desertification (UNCCD), sand and dust storms are an underappreciated problem now “dramatically” more frequent in some places worldwide, with at least 25% of the phenomenon attributed to human activities.

#### About the report:

- ◆ UNCCD meeting in **Samarkand, Uzbekistan**, reviews global progress on Convention implementation.
- ◆ Sand and dust storms (SDS) discussed as a major environmental challenge.

#### Highlights of the Report:

- ◆ As per the report, **two billion tons** of sand and dust, equal in weight to **350 Great Pyramids of Giza**, enter the atmosphere every year.
- ◆ **Key Issues:**
  - ▶ SDS exacerbated by poor land and water management, droughts, and climate change.
  - ▶ Fluctuations in intensity, magnitude, or duration make SDS unpredictable and dangerous.
- ◆ **Concerns highlighted:**
  - ▶ SDS has trans-boundary impacts affecting environment, climate, health, agriculture, and livelihoods.
  - ▶ Source areas experience crop damage, livestock impact, and topsoil erosion.
- ◆ **Policy Recommendations:**
  - ▶ UNCCD, FAO, and partners provide guidance through the Sand and Dust Storms Compendium and SDS Toolbox.
  - ▶ Recommendations cover data collection, monitoring, early warning, impact mitigation, and anthropogenic source mitigation.



### SERVICES PMI (PURCHASING MANAGERS INDEX)

**Context:** As per the S&P Global India, the **Services PMI (Purchasing Managers' Index)** has dropped from **61** in **September** to **58.4**, signalling its **slowest uptick since March**.

### What is Services PMI?

- ◆ In order to get an economic insight into a sector, the purchasing managers' index (PMI) provides an indicator based on surveys of businesses. The most common PMI surveys are the Manufacturing PMI and the Services PMI.

### How is it compiled?

- ◆ The **IHS Markit India Services PMI** is based on data compiled from questionnaires sent to purchasing executives in around **350 private service sector** companies.
- ◆ The index tracks variables such as **sales, employment, inventories, and prices**.
- ◆ The PMI is based on a monthly survey of supply chain managers across 19 industries, covering both upstream and downstream activity

### What are the benefits from PMI?

- ◆ It consists of a diffusion index that summarizes whether market conditions are expanding, staying the same, or contracting as viewed by purchasing managers.
- ◆ The purpose of the PMI is to provide information about current and future business conditions to company decision-makers, analysts, and investors.
- ◆ The **Services PMI** provides advanced **insight into the services sector**, giving **investors a better understanding** of business conditions and valuable information about the economic backdrop of various markets.
- ◆ Services PMI also provides the stock market an indicator of whether the current economy is healthy or not, which generally translates to higher corporate profits.
- ◆ In the bond market, they do not prefer rapid growth and are extremely sensitive if the economy is causing potential inflationary pressures. The PMI data are also used by the Reserve Bank of India to help make interest rate decisions.
- ◆ In December 2020, India's services sector activity gained momentum and touched a five-month high, supported by an uptick in new business orders that boosted output as well as employment.



## BASIC ANIMAL HUSBANDRY STATISTICS 2023

**Context:** The Union Minister for Fisheries, Animal Husbandry & Dairying Parshottam Rupala released the Basic

**Animal Husbandry Statistics 2023 (milk, egg, meat and wool production 2022-23) based on Animal Integrated Sample Survey (March 2022-February 2023) during the National Milk Day event at Guwahati.**

### The Mains Findings of Statistics are:

The Production of **Milk, Egg, Meat and wool** in the country is estimated annually based on the results of **Integrated Sample Survey (ISS)** which is conducted across the country in **three seasons** i.e., **summer (March-June), Rainy (July-October) and winter (November-February)**.

- ◆ **Milk Production:** The total Milk production in the country is estimated as 230.58 million tonnes during 2022-23 registered a growth of 22.81% over the past 5 years which was 187.75 million tonnes in 2018-19.
  - ▶ It was found that the highest milk producing State during 2022-23 was **Uttar Pradesh** with a share of 15.72 % of total milk production followed by **Rajasthan (14.44 %), Madhya Pradesh (8.73 %), Gujarat (7.49 %), and Andhra Pradesh (6.70 %)**.
  - ▶ In terms of **annual growth rate (AGR)**, the highest AGR recorded by;
    - Karnataka (8.76%) followed by West Bengal (8.65%) and Uttar Pradesh (6.99%) over the previous year.
- ◆ **Egg Production:** The total Egg production in the country has estimated as 138.38 billion nos. during 2022-23 registered a growth of 33.31% growth over the past 5 years as compared to the estimates of 103.80 billion numbers during 2018-19.
  - ▶ The major contribution in the total Egg production comes from **Andhra Pradesh** with a share of 20.13 % of total **Egg production** followed by **Tamil Nadu (15.58 %), Telangana (12.77 %), West Bengal (9.94%) and Karnataka (6.51 %)**.
  - ▶ In terms of AGR, the **highest growth rate** was recorded by West Bengal (20.10%) and followed by Sikkim (18.93%) and Uttar Pradesh (12.80%).
- ◆ **Meat Production:** The total Meat production in the country is estimated as 9.77 million tonnes during 2022-23 registered a growth of 20.39 % over the past 5 years as compared to the estimates of 8.11 million tonnes in 2018-19.
  - ▶ The major contribution in the total meat production comes from Uttar Pradesh with 12.20 % share and followed by **West Bengal (11.93 %), Maharashtra (11.50 %), Andhra Pradesh (11.20 %) and Telangana (11.06 %)**.
  - ▶ In terms of annual growth rate, the highest Annual Growth Rate (AGR) has recorded in Sikkim (63.08%) followed by **Meghalaya (38.34%) and Goa (22.98%)**.





## GOVERNMENT MAKES BIOGAS BLENDING MANDATORY

**Context:** Government initiative on making Biogas blending mandatory with an aim of achieving net zero emissions targets by 2070.

### Government Policy on Biofuel:

- ◆ The government announced compulsory blending of compressed biogas, which is extracted from municipal and agriculture waste, in natural gas to cut reliance on imports.
- ◆ **Biogas Blending:** Initially, 1 per cent of biogas will be blended in gas used in automobiles and household kitchens for cooking from April 2025. The share will be increased to around 5 per cent by 2028.
- ◆ **Sustainable aviation fuel (SAF):** The government also plans to have 1 per cent sustainable aviation fuel (SAF) in aircraft turbine fuel by 2027, doubling to 2 per cent in 2028. The SAF targets will initially apply to international flights.
- ◆ **CBG Blending Obligation (CBO):** It will promote production and consumption of Compressed Biogas (CBG) in the country.

### The key objectives of the CBO

- To stimulate demand for CBG in city gas distribution sector, import substitution for Liquefied Natural Gas (LNG), saving in forex, promoting circular economy and to assist in achieving the target of net zero emission.
- The CBO will encourage investment of around Rs 37,500 crores and facilitate establishment of 750 CBG projects by 2028-29.
- The CBG blending will be voluntary till FY 2024-2025 and the mandatory blending obligation will start from FY 2025-26
- A **Central Repository Body (CRB)** shall monitor and implement the blending mandate based on the operational guidelines.



## ONATTUKARA SESAME

**Context:** OnattukaraVikasana Agency, registered owner of the GI-tagged sesame seeds, plan to increase the area under sesame cultivation to 2,000 hectares from current 600 hectares.

### About Onattukara Sesame –

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



### Key Measures –

- ◆ **Financial Assistance:** Farmers will receive 40 percent of land to support sesame cultivation, enhancing their income.
- ◆ **Collaborative Initiative:** The project is a joint effort involving local institutions like KrishiBhavan, OnattukaraVikasana Agency (OVA), and others.
- ◆ **Seed Distribution:** Sesame seeds will be distributed through ThekkekaraKrishiBhavan to facilitate cultivation.
- ◆ **Market Procurement:** OVA will procure the sesame produced under the scheme at market prices, ensuring fair compensation for farmers.
- ◆ **Targeted Groups:** Various groups, including individuals, collectives, Kudumbashree groups, and others, are eligible for incentives to promote sesame cultivation.
- ◆ **Resource Utilization:** Farmers can utilize resources like the workforce of ThekkekaraKarshika Karma Sena and a tractor for field preparation.
- ◆ **Increased Cultivation Area:** The initiative aims to expand sesame cultivation from 600 to 2,000 hectares in the region.
- ◆ **Variety Cultivation:** Farmers in the region cultivate various sesame varieties, including Ayali, Kayamkulam-1, Thilak, Thilathara, and Thilarani, developed by the Onattukara Regional Agricultural Research Station (ORARS).

### About GI tags -

- ◆ GI tags are issued for products like agricultural



goods, wine and spirit drinks, foodstuff, handicrafts, and industrial products.

- ◆ Top 5 states in India which holds maximum number of GI tags includes Uttar Pradesh, Tamil Nadu, Karnataka, Maharashtra, and Kerala.
- ◆ Tamil Nadu and Karnataka holds maximum number of GI tags followed by Kerala with 35 GI tag, Uttar Pradesh with 34 GI tag and Maharashtra with 31 GI tag.

### Significance:

- ◆ It provides legal security for the manufacturer of unique goods originating from a particular place in the Country.
- ◆ The GI tag also helps customers to get the finest quality products of their desired quality.
- ◆ The GI tag is an assurance of authenticity. If manufacturers have a GI Tag then it is an indication that the product they are manufacturing is genuine.
- ◆ It also enhances and promotes goodwill of manufacturers of GI tag goods by boosting the product demand in the national and international markets.

## E-COMMERCE CARGO MOVEMENT STARTS COURSE ON NW 1

**Context:** A memorandum of understanding (MoU) was signed between Inland Waterways Authority of India (IWAI) and Amazon Seller Services Private Limited (Amazon) for promoting cargo movement and transportation using river Ganga (National Waterway 1).

### Key Highlights-

#### MoU for Inland Waterways Transportation

- ◆ The Inland Waterways Authority of India (IWAI) and Amazon signed a **Memorandum of understanding (MoU)** to promote cargo movement and transportation of customer shipments via the Ganga River (National Waterway 1).
- ◆ The agreement aims to leverage inland waterways, specifically the Ganga, to optimize logistics efficiency, reduce environmental impact, and foster economic development.

#### Strategic Collaboration for E-commerce Cargo

- ◆ The collaboration signifies a significant advancement in transporting e-commerce cargo through India's inland waterways.

- ◆ This partnership aligns with the Prime Minister's vision of enhancing inland waterways as a sustainable and affordable mode of transportation, contributing to the **Maritime AmritKaal Vision 2047**.

### Efficiency and Environmental Sustainability

- ◆ Water transport is recognized as the most environmentally friendly mode, consuming significantly less fuel compared to rail and road transport.
- ◆ According to a World Bank Report, rail and road transport consume **18.5% and 91.6%** more fuel than water transport, making it an eco-friendly choice.

### Key Stakeholders and Vision

- ◆ The MoU signing ceremony was attended by the Union Minister of Ports, Shipping & Waterways, Shri Sarbananda Sonowal, along with other senior officials.
- ◆ The initiative supports the larger goal of increasing inland water transport volumes to over 200 MMT by 2030 and exceeding 500 MMT by 2047, as outlined in the AmritKaal Vision 2047.

### E-commerce and Inland Waterways Integration

- ◆ Amazon's collaboration with IWAI allows the company to utilize various modes of transport, including rail, air, water, and surface, ensuring faster, cost-effective, and sustainable delivery of customer packages.
- ◆ The partnership not only benefits Amazon by reducing transportation costs but also opens possibilities for other e-commerce companies to leverage India's extensive inland waterways.

## MARITIME RECONNAISSANCE AIRCRAFT

**Context:** The Indian Navy on Tuesday decommissioned the last of its Ilyushin IL-38SD Sea Dragon Long Range Maritime Reconnaissance aircraft from operational service, 46 years after their induction.

### Ilyushin IL-38SD Sea Dragon Long Range Maritime Reconnaissance aircraft:

- ◆ It was **inducted** into service from **1977** onwards and it participated in January 26 Parade flypast for the first and last time.
- ◆ In January 1978, the squadron aircraft using the on board **Magnetic Anomaly Detector (MAD)** equipment successfully **located the wreckage** of the ill-fated Air India aircraft which had crashed soon after take-off off the Mumbai coast.

### What is Maritime Reconnaissance aircraft?

- ◆ A **maritime patrol aircraft (MPA)**, also known as **maritime reconnaissance aircraft**, is a fixed-wing aircraft designed to operate for long durations over water in maritime patrol roles — in particular **anti-submarine warfare (ASW)**, **anti-ship warfare (AShW)**, and **search and rescue (SAR)**.

### What is the need for maritime patrolling?

- ◆ India's extensive **7,516 km coastline**, vast **2.5 million sq km exclusive economic zone**, and **crucial major and minor ports** are vital to its economy.
- ◆ Most international trade relies on **maritime transport**, but **security concerns** have expanded to include **terrorism, smuggling**, piracy, and poaching, making **defense essential**.
- ◆ In order to defend any portion of the maritime domain, it is **essential to be aware** of the potential threat which may be at the strategic or the tactical level or both.

### What is Magnetic Anomaly Detector (MAD)?

- ◆ A **magnetic anomaly detector (MAD)** is an instrument used to detect minute variations in the Earth's magnetic field.
- ◆ The term refers specifically to magnetometers **used by military forces** to **detect submarines** (a mass of ferromagnetic material creates a detectable disturbance in the magnetic field);
- ◆ Equipment is a **descendant of geomagnetic survey** or aeromagnetic survey instruments used to search for minerals by detecting their disturbance of the normal earth-field

## THE CHIMAERAS OF NATURE AND THEIR PROMISE TO GROW HUMAN ORGANS

**Context:** In a recent landmark study, scientists reported successfully generating a live chimaera in non-human primates.

### Background:

- ◆ At present, more than 3 lakh people are waiting for an organ transplant in India alone; the global number is far higher, with no respite in sight.
- ◆ There is an alarming disparity in the **number of organ donors** and the number of recipients – and animals have played an important part in filling this gap.

### About Induced pluripotent stem cells (iPSCs) technology:

- ◆ The successful application of animal insulin and the

more recent use of animal heart valves in human surgeries have saved human lives

- ◆ Researchers have also made attempts to grow full human organs inside the bodies of animals using advancements in **induced pluripotent stem cells (iPSCs) technology**.

### Significance of Chimeric Research:

- ◆ **New Frontiers:** As such, this study opens new doors for scientists to use non-human primates to create chimaeras that could become models for basic and translational biomedical applications in the near future.
- ◆ **Ethical Issues:** Just like other advances in science, this study wasn't without limitations and ethical quandaries – and which we must address before thinking about the human biomedical applications.

### Chimaeras in nature:

- A **genetic chimaera** is a **single organism** composed of **cells of more than one distinct genotype** (or genetic makeup).
- The animal kingdom has several examples of varying degrees of chimerism.
- The **half-sider budgerigar**, a type of **common parakeet** widely adopted as pets, has different colours on either side of its body due to chimerism.
- The **anglerfish** displays an extreme degree of **sympatric chimerism** in which the male fish fuses with and is eventually absorbed into the female fish, mixing their genetic makeups into a single animal.
- **Marine sponges** are known to have up to four distinct genotypes in a single organism.

## GENERIC DRUGS TO TREAT FOUR RARE DISEASES LAUNCHED

**Context:** These indigenous products will lead to drug prices being slashed up to 100 times of their current market value.

### Four Rare Diseases:

- ◆ The **Union Health Ministry** has made available generic drugs to support the care and treatment of four ailments:
  - ▶ Tyrosinemia-Type 1
  - ▶ Gauchers Disease
  - ▶ Wilson's Disease
  - ▶ The Dravet-Lennox Gastaut Syndrome
- ◆ The cost of these drugs will be slashed by anywhere between 60 and 100 times of their current market value.

### Other Rare Diseases:

- ◆ The Ministry is also in the process of making available drugs for more rare diseases, including **Phenylketonuria and Hyperammonemia**.

#### Rare Disease:

- A rare disease is a health condition of particularly low prevalence that affects a small number of people.
- It collectively afflicts 6-8% of the population in any country at any given time, so India could have 8.4 crore to 10 crore such cases, according to the Ministry.
- Nearly 80% percent of these diseases are genetic in nature.

### Priority diseases:

- ◆ **Thirteen rare diseases were prioritized** like sickle cell anemia for children.
- ◆ This venture is purely a **non-commercial venture** guided only with the motive to serve those in acute need.
- ◆ For years, the **Health Ministry** through various schemes has been trying to **financially help as many patients** as possible but this is a more sustainable measure for not just patients in India but also worldwide.
- ◆ Several companies -- including Biophore India, Laurus Labs, AzicoBiophore, MSN Pharmaceuticals, Akums Drugs and Pharmaceutical – have come forward to take part in the venture.

### DECENTRALISED AUTONOMOUS ORGANISATIONS

**Context:** Decentralised Autonomous Organisations (DAOs) represent a groundbreaking innovation at the intersection of blockchain technology and governance.

### What are DAOs?

- ◆ DAOs are encoded organizations on blockchain, governed by smart contracts, disrupting traditional structures.
- ◆ From decentralized finance to art and governance, DAOs reshape industries with borderless cooperation.
- ◆ Decentralization, transparency, inclusivity, and collaboration define the transformative potential of DAOs.

### Key Highlights-

#### ◆ DAOs Revolutionizing Industries:

- ▶ DAOs operate without centralized control, governed by smart contracts and member consensus.
- ▶ They impact finance, art, governance, and supply chain management, offering transparent and democratic systems.

#### ◆ Principles and Implications:

- ▶ DAOs decentralize power, democratize decision-making, and promote transparency and trust.
- ▶ They champion inclusivity, breaking barriers, fostering diversity, and inspiring new forms of collaboration.

#### ◆ Challenges and Controversies:

- ▶ The 2016 DAO hack exposed vulnerabilities, emphasizing the need for security audits.
- ▶ Regulatory uncertainty, legal liability, and complex compliance issues challenge DAO adoption.

#### ◆ Legal Framework Evolution:

- ▶ Stakeholders collaborate to establish legal frameworks addressing governance, IP, and cross-border operations.
- ▶ Striking a balance between innovation and compliance is crucial for DAOs' coexistence with legal norms.

### 25 YEARS OF THE INTERNATIONAL SPACE STATION

**Context:** On the Occasion of 25 years of launch of International Space Station (ISS) there is recall to recognize its efforts to facilitate science and symbolizes international collaboration, peace, and diplomacy.

### When did the International Space Station launch?

- ◆ The first part of the International Space Station (ISS), called '**Zarya**', was launched by Russia on November 20, 1998. It provided **fuel, power, and a docking zone** for other spacecraft.
- ◆ A month later, on December 4, 1998, the **United States** launched the **Unity Node 1 module**.
- ◆ Together with Zarya, they formed the **beginning of the ISS**, which, through 42 assembly flights, evolved into a fully functional **space laboratory**.

### Details about International Space station (ISS):

- ◆ The ISS is equipped with various spaces for daily activities, including **six sleeping quarters, two bathrooms, a gym, and a unique 360-degree view bay window.**
- ◆ **Dimensions:** Measuring 109 meters (357 feet) end-to-end, the ISS is almost the length of a full American football field, including the end zones.
  - ▶ It surpasses the length of an **Olympic swimming pool** by more than twice. However, it is shorter than **SpaceX's Starship** by 12 meters.
- ◆ **Speed of travel:** The ISS orbits Earth numerous times in one day — every **90 minutes** to be precise — at a speed of **8 kilometers (5 miles) per second.**
- ◆ The ISS boasts a **solar array wingspan** of 109 meters, exceeding the wingspan of the largest commercial aircraft, the **Airbus A380 (79.8 meters).**
- ◆ Additionally, the space station is intricately wired, with about **13 kilometers of electrical wires** running through its structure.

### Significance of ISS:

- ◆ Astronauts have conducted **hundreds of scientific experiments** on the ISS.

### Recent Experiments:

- ◆ There have been discoveries to **benefit drug development**, new water purification systems, methods to mitigate muscle and **bone atrophy** and those that have led innovations in food production.
  - ▶ They experiment on themselves, monitoring their **general health, nutrition or the effects of solar radiation.**
  - ▶ They also conduct experiments for scientists on Earth. These experiments have led to numerous scientific breakthroughs.
    - From **Alzheimer's and Parkinson's disease** to cancer, asthma and heart disease — it's all been studied in space.
    - Scientists say some medical experiments are best done in space because cells behave in microgravity more like they do inside the human body, but it's difficult to recreate such conditions on Earth.

### How long will the ISS be operational?

- ◆ Plans for the future operation of the ISS were thrown into uncertainty with the start of Russia's invasion of Ukraine in early 2022.
- ◆ Due to **geopolitical tensions**, both the European

Space Agency and national bodies have withdrawn from collaborations with Russia.

- ◆ Beyond **geopolitical factors**, various spacefaring nations, including **Japan, China, India, and the United Arab Emirates**, are eager to establish their presence in space independently.
- ◆ While the **US and Europe** express commitment to the ISS until 2030, NASA focuses on its Artemis program for lunar exploration, and the European Space Agency (ESA) is actively working on a new space station named **Starlab.**



### E-SIM

**Context:** Transition from regular sim to e-sim.

### Transit to e-sim

- ◆ An eSIM is a **digital version of the physical SIM card**—identifying your device virtually to provide network connection.
- ◆ It's **programmable remotely** via software and is built into newer smartphones, meaning you wouldn't have to go purchase a new SIM card if you wanted to swap phones or wireless carriers.
- ◆ eSIMs are used in **tablets, smart watches, drones**, and even cars. They're basically space-saving gamechangers for connectivity.

### Usability of e-Sim

- ◆ **Flexibility:** As e-sims are embedded in devices and are programmable remotely, it can open a whole new world of flexibility when it comes to managing your phone and service plans.
- ◆ **High portability:** You can add plans, add a new number, and even connect to a different carrier. For example, you can test out T-Mobile's network for FREE before you switch, while still keeping your current phone number and carrier.

### Benefits of e-sim:

- ◆ **Single device:** This saves you money because with eSIM, you don't need two separate devices.
- ◆ **Update wireless service remotely:** Small, medium, and large businesses can benefit from eSIMs, as they make it possible to change or update wireless service remotely on multiple lines at once—whether you have five employees or five thousand.
- ◆ **International benefits:** eSIMs let you easily add an international plan to your device that starts working the moment you arrive in another country, giving you hassle-free flexibility.
- ◆ **Try network before porting:** The biggest benefit of using eSIM is that you can try the network free for three months before you switch.



## Section D [QUICK BYTE]

- ☞ The Khoja Community
- ☞ UNESCO declares Gwalior as city of music
- ☞ Mars Solar Conjunction
- ☞ Centre to pay Rs.8 lakh each to 15,000 women SHGs for buying drones
- ☞ Bihar Cabinet passed a proposal seeking special category status for the State
- ☞ Ayushman Arogya Mandir
- ☞ PM Kisan Bhai Scheme
- ☞ Systematic Voters' Education and Electoral Participation program
- ☞ Indian Ocean Tuna Commission (IOTC)
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- ☞ Electronic Negotiable Warehouse Receipt
- ☞ Household Debt
- ☞ World Food India 2023
- ☞ OneWeb becomes first pvtosatcom co. to get nod for commercial satellite broadband
- ☞ Deep Space Optical Communications (DSOC)
- ☞ Vajra Prahar: India-USA joint exercise
- ☞ Environmental DNA (e-DNA)
- ☞ Indian Navy launches anti-submarine warfare craft 'Amini'
- ☞ Nest Initiative
- ☞ 50 acres of farmland washed away in landslips in Idukki

### [PERSONALITY IN NEWS]

- ☞ Justice FathimaBeevi (1927-2023)

### [LOCATION IN NEWS]

- ☞ Bhagwan Birsa Munda Sanctuary
- ☞ Gulf of Guinea (GoG)
- ☞ Pobitora Wildlife sanctuary

### [SPECIES IN NEWS]

- ☞ Vairengte bent-toed gecko
- ☞ Bewick's swan (*Cygnus columbianusbewickii*)
- ☞ Rungialongistachya
- ☞ New species of 'music frog' in Arunachal
- ☞ *Lysionotusnamchoomii*



### The Khoja Community



Mumbai's Khoja Community is going to conduct a Census to Assess Economic And Educational Status For Welfare Programmes.

**About the information:**

- The census will collect information on the number of rooms in houses owned by the community, which is formally called the Khoja Shia Ithna-Asheri sect.
- This will help the Jamaat estimate the number of families that may need larger homes or help in educating their children.

**Who are Khojas?**

- The Khoja or Khuwaja are a mainly NizariIsma'ili Shia community of people originating in Gujarat, India.
- The word Khoja is derived from the Persian word Khwaja, a term of honor, the word Khoja is used to refer to members of Baniya caste groups (traders), who converted to Islam from Hinduism under Muslim priests (saints).
- In India, most Khojas live in the states of Gujarat, Maharashtra, Rajasthan and the city of Hyderabad.
- Many Khojas have also migrated and settled over the centuries in East Africa, the Caribbean, Europe and North America.

### UNESCO declares Gwalior as city of music



UNESCO has added 'Gwalior' in its Creative Cities Network as **City of Music**.

**Gwalior as the City of Music:**

- **Gwalior** is the **second city in India** to be designated as the '**City of Music**' by UNESCO, **after Varanasi in 2015**.
- The city is widely regarded as the **birthplace of Tansen**, one of the greatest musicians and composers in Indian history, who was also one of the 'Navratnas' (nine jewels) in the court of Emperor Akbar.
- The city is also the **origin of the Gwalior Gharana**, the oldest and most influential school of Hindustani classical music.
- The city hosts one of the **biggest annual music festivals** in India, the TansenSangeetSamaroh, which attracts thousands of music lovers and artists from across the country and abroad.

### 54th International Film Festival of India

The 54th International Film Festival of India (IFFI), one of the biggest film and cultural event of the world is scheduled to begin in Goa from November 20, 2023.

**About the event:**

- The event will showcase over 270 films over a period of 10 days.



- In the International section will feature 198 films, 18 more than the 53rd edition of the festival.
- It will have 13 World premieres, 18 International premieres, 62 Asia premieres and 89 India premieres.
- As the OTT industry has seen a boom in India and original content created in India is employing thousands of people.
- In response to the dynamic landscape of this sector, growth of which stands at 28 per cent annually, the Ministry has introduced this award celebrating the outstanding content creators on OTT platforms.

#### Significance:

- India's media and entertainment industry is a force to be reckoned with ranking as the fifth largest market globally and growing every year with an average annual growth of 20 per cent in the last three years.

### Mars Solar Conjunction



Recently, the NASA has stopped sending commands to its fleet of robotic probes on or orbiting the Mars because of solar conjunction.

#### What is Solar Conjunction?

- About every 26 months, when Mars and Earth are on opposite sides of the Sun, communication between the two planets is disrupted.
- During the days surrounding such an alignment, called a solar conjunction, the Sun can disrupt radio transmissions between the two planets.
- Solar conjunction occurs every two years.

#### NASA's Mars Mission:

- **Perseverance Rover:** It is a robotic explorer to land on Mars as part of NASA's on-going Mars 2020 Mission.
- **Main Job:** Seek signs of ancient life and collect samples of rock and regolith (broken rock and soil) for possible return to Earth.
- The rover will collect samples of rock and soil, encase them in tubes, and leave them on the planet's surface to be returned to Earth at a future date.
- **Launch:** It was launched on July 30, 2020 from Cape Canaveral, Florida.
- **Landing:** Successfully landed on the surface of Mars's Jezero Crater on Feb. 18, 2021.

### Centre to pay Rs.8 lakh each to 15,000 women SHGs for buying drones

More than three months after Prime Minister announced to provide **drones to women self-help groups (SHGs)**, the Cabinet has approved a scheme with an outlay of Rs.1,261 crore for two years under which each such group will be eligible to get up to Rs.8 lakh financial support for purchase of drones.



**About the Scheme:**

- The scheme will help provide drones to **15,000 selected women SHGs** during 2024-25 and 2025-2026 for providing rental services to farmers for agriculture purpose.
- **Financial assistance:** Financial assistance will be provided by the Centre to each SHG at 80 per cent of the cost of drone, including accessories/ancillary charges but up to a maximum of Rs.8 lakh.
  - ▶ As one drone costs around **Rs.10 lakh**, the government has allowed SHGs to take loan from banks under the **Agriculture Infrastructure Fund (AIF)** at lower interest rate since the Centre bears **3 per cent** interest costs through subsidy.
- Members of the SHGs with inclination to take up repairs of electrical goods, fitting and mechanical works will be selected by the SRLM and LFC and will be trained as drone technician/assistant.
- The government guidelines have also made LFCs to act as a link between drone suppliers and SHGs in purchase of drones as well as their repair and maintenance.

**Bihar Cabinet passed a proposal seeking special category status for the State**

The Bihar Cabinet passed a proposal seeking **special category status (SCS)** for the State and asked the Central government to clarify its stand on the issue in the public domain.



**What is Special Category Status (SCS)?**

- SCS is a classification given by the Centre to assist development of states that face geographical and socio-economic disadvantages.
- Constitution does not make a provision for SCS and this classification was later done on the recommendations of the **Fifth Finance Commission in 1969**.

**States with Special Category Status:**

- Presently, **Assam, Nagaland, Himachal Pradesh, Manipur, Meghalaya, Sikkim, Tripura, Arunachal Pradesh, Mizoram, Uttarakhand, and Telangana** are among the **eleven states** in the nation with the special category status.

**'Ayushman Arogya Mandir'**

The Union Government has decided to rename the existing Ayushman Bharat Health and Wellness Centres (AB-HWCs) as '**Ayushman Arogya Mandir**' with the tag-line '**Arogyam Parmam Dhanam**'.



**About:**

- As part of this effort, states have been instructed to upload photographs of the rebranded primary health facilities onto the AB-HWC portal.
- It has been underlined that the National Health Mission (NHM) logo is to be retained in the rebranded centres.

	<ul style="list-style-type: none"> <li>• If scripts other than <b>Devanagri (Hindi) or English</b> are to be used for branding, then the full and exact title can be translated into the state language(s), but the tagline must be transliterated in the state language(s).</li> <li>• The Centre offers screenings for <b>hypertension, diabetes, oral, breast and cervical cancer</b>.</li> </ul>
<p><b>Indian Ocean Tuna Commission (IOTC)</b></p> 	<p>The Department of Fisheries, Ministry of Fisheries, Animal Husbandry &amp; Dairying, GoI is organizing the <b>19th Working Party on Data Collection and Statistics (WPDCS19)</b> of the <b>Indian Ocean Tuna Commission (IOTC)</b> from 28th November to 2nd December 2023.</p> <p><b>About:</b></p> <ul style="list-style-type: none"> <li>• There were participants from countries namely, Indonesia, France, Spain, other countries of the <b>European Union (EU), Seychelles, Tanzania, Iran, Thailand, Japan, Sri Lanka, Oman and India</b> attending the meeting in person.</li> <li>• This is an important meeting organized by the IOTC and hosted by Department of Fisheries, GoI, which will bring together the renowned Scientists and Experts in the field of Tuna fisheries from all around the world.</li> </ul>
<p><b>ASEAN India Grassroots Innovation Forum (AIGIF)</b></p> 	<p>India along with <b>10 ASEAN Member States (AMS)</b> was represented by 200 participants, at the <b>4th edition of the annual ASEAN India Grassroots Innovation Forum (AIGIF)</b> that was launched in Langkawi, Malaysia on 28th November 2023.</p> <p><b>About:</b></p> <ul style="list-style-type: none"> <li>• The AIGIF is an annual programme focused on fostering a strengthened relationship between India and AMS on the premise of cooperation in <b>Science, Technology and Innovation (STI)</b>.</li> <li>• While on one side it aims to give exposure to social innovations in different countries, it also strengthens governance in the grassroots innovation ecosystem.</li> <li>• The annual program is a collaboration between the <b>ASEAN Committee on Science, Technology, and Innovation (COSTI)</b>; Department of Science &amp; Technology (DST), Government of India; National Innovation Foundation (NIF) – India and the Science and Technology Ministry of the host nation, Malaysia's Ministry of Science, Technology and Innovation (MOSTI) in the year 2023.</li> <li>• <b>YayasanInovasi Malaysia (YIM)</b> is an agency under MOSTI which is executing the AIGIF this year.</li> </ul>
<p><b>PM Kisan Bhai Scheme</b></p>	<p><b>PM-KisanBhai Scheme</b></p> <ul style="list-style-type: none"> <li>• This scheme aims to incentivize farmers to retain their produce for a minimum of three months post-harvest, granting them the autonomy to decide when and where to sell their crops.</li> <li>• It seeks to break the monopoly of traders in setting crop prices, giving farmers greater control over their produce.</li> </ul>





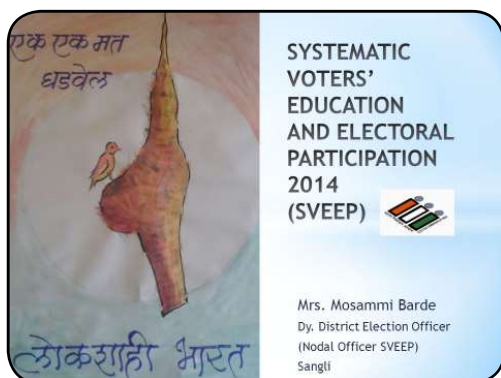
- This initiative grants farmers the autonomy to decide when to sell, in contrast to the current practice where most crops are sold around harvest, typically spanning 23 months.

**Key Components**

- Warehousing Rental Subsidy (WRS): Small farmers and farmer producer organizations (FPOs) can avail a WRS benefit of ₹4 per quintal per month for a maximum of three months, irrespective of warehousing charges.

**Prompt Repayment Incentive (PRI):** The government proposes to extend a 3% additional interest subvention under the Kisan Credit Card (KCC) scheme for farmers pledging their produce and obtaining loans at subsidized interest rates.

**Systematic Voters' Education and Electoral Participation program**



The Election Commission has entered into a memorandum of understanding with the ministry of education to groom school and college students to be informed, enlightened and responsible voters in the future via **Systematic Voters' Education** and Electoral Participation program.

**About:**

- Systematic Voters' Education and Electoral Participation program, better known as SVEEP, is the flagship program of the Election Commission of India for voter education, spreading voter awareness and promoting voter literacy in India.
- SVEEP's primary goal is to build a truly participative democracy in India by encouraging all eligible citizens to vote and make an informed decision during the elections.
- The programme is based on multiple general as well as targeted interventions which are designed according to the socio-economic, cultural and demographic profile of the state as well as the history of electoral participation in previous rounds of elections and learning thereof.

**Electronic Negotiable Warehouse Receipt**

During the event, a film on **scientific storage and pest control for WDRA-registered warehouses** was launched, part of WDRA's training efforts for farmers' awareness programs.

- The event has highlighted the '**Role of Financial Institutions in promoting e-Negotiable Warehouse Receipt (e-NWR) based Pledge Finance.**'

**About:**

**Warehousing Development and Regulatory Authority (WDRA)**, Government of India ensures implementation of the NWR as per the provisions of the Warehousing (Development & Regulation) Act, 2007.



- **Negotiable Warehouse Receipt (NWR) system** in the country enables farmers to store their produce for safe and scientific storage and preservation in warehouses near their farms and to seek pledge loan from banks against the NWRs issued against deposit of their stock.
- Hence, the NWR help the farmers to avoid distress sales of agricultural produce during the peak marketing season and to avoid the post-harvest storage loss.

### Household Debt



According to the RBI, household debt surged to 5.8 per cent of the GDP in FY23; marking the second-highest annual increase since Independence (the highest growth was at 6.7 per cent of GDP in FY07).

#### What is Household Debt?

- Household liabilities or household debt includes the combined debt of all people in a household, including consumer debt and mortgage loans.
- Household debt can be a useful tool for achieving specific financial goals, such as homeownership or education.
- However, excessive or mismanaged household debt can lead to financial stress and difficulties in making repayments, potentially resulting in financial instability.
- Monitoring and managing household debt is essential for maintaining financial well-being.

### World Food India 2023



Addressing the **three-day event**, the Prime Minister (PM) has mentioned that how the **food processing industry** has emerged as the "**sunrise sector**" in India.

#### Background:

- The first edition of the event was held in 2017, but could not be organised till this year due to the Covid-19 pandemic.

#### About:

- The second edition of the "**World Food India 2023**" has been launched at Bharat Mandapam, New Delhi.
- The event aims to showcase India as the "**food basket of the world**" and celebrate 2023 as the **International Year of Millets**.
- **Participants:** More than 80 countries, 200 speakers and 12 partner ministries, departments and commodity boards are scheduled to take part in the three-day event.

### One Web becomes first pvt satcom co. to get nod for commercial satellite broadband



Bharti Group-backed **OneWeb India** has announced that it has received the necessary authorisations from space regulator **Indian Space Promotion and Authorisation Centre (IN-SPACe)** to launch **EutelsatOneWeb's commercial satellite** broadband services in India.

**About the information:**

**Facts:**

- EutelsatOneWeb, earlier known as **OneWeb**, is a global constellation with **648 satellites** orbiting earth in circular polar orbits at **1200 km** altitude and shall provide about 21 Gbps throughput over India.
- OneWeb India is the first organisation to be granted this authorisation.
- '**EutelsatOneWeb**', the **low earth orbit operator**, is part of Eutelsat Group.
- This authorisation means EutelsatOneWeb can launch commercial connectivity services as soon as spectrum allocation is granted by the Government.
- IN-SPACe stated that OneWeb India aims to provide internet services to rural and unconnected areas and territorial waters of India on a 24x7 basis.
- The authorisation has a validity period of **five years** and is subject to the assignment of the spectrum by the Department of Telecommunication (DoT) for both the gateways and user terminal operations.

### Deep Space Optical Communications (DSOC)



Recently, NASA has achieved "**first light**" in the early hours after its flight laser transceiver, which is a cutting-edge instrument aboard **Psyche Mission**.

**About:**

- It is a laser space communication system, of the **National Aeronautics and Space Administration (NASA)** has achieved "first light" as it successfully transmitted data through laser over a distance of 10 million miles.
- NASA's Deep Space Optical Communications (DSOC) experiment has beamed a **near-infrared laser** encoded with test data from nearly 10 million miles (16 million kilometers) away – about 40 times farther than the Moon is from Earth – to the Hale Telescope at Caltech's Palomar Observatory in San Diego County, California.
- This is the **farthest-ever demonstration** of optical communications.

### Vajra Prahar: India-USA joint exercise

It is **14th Edition** of the Indo-US Joint Special Forces exercise.

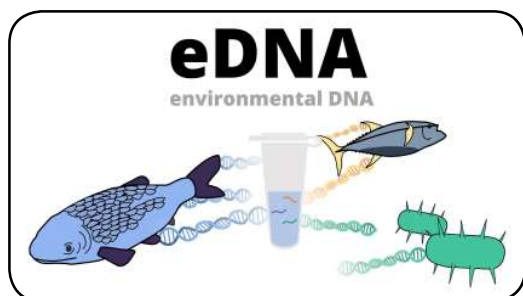
- The US contingent is represented by personnel from the 1st Special Forces Group (SFG) of US Special Forces. The Indian Army contingent is led by Special Forces personnel from the Eastern Command.
- It was held in umroi, Meghalaya.

**Aim**

- Sharing best practices and experiences in areas such as joint mission planning and operational tactics.
- To enhance inter-operability and strengthen defence cooperation.

**Exercise includes**

- Joint plan and rehearse a series of Special Operations, Counter Terrorist Operations, and Air Borne operations in simulated conventional and unconventional scenarios in mountainous terrain.
- Water borne insertion of troops, Precision engagement of targets at long ranges, Combat air controlling of fixed wing and rotary wing aircraft' besides 'airborne insertion and sustenance of troops.

**Environmental DNA (e-DNA)**

Recently, a new method developed by the researchers at the Laboratory for the **Conservation of Endangered Species (LaCONES)**.

- LaCONES is a CSIR-Centre for **Cellular and Molecular Biology (CCMB)** laboratory headquartered in Hyderabad.

**About the novel method:**

- The method follows a molecular approach to extract and read the genetic information encoded in free-floating environmental DNA (eDNA).
- eDNA is DNA shed by all organisms into their surroundings through natural processes during their lifetime or after death.
- The new non-invasive method can assess the total biodiversity of any ecosystem by sequencing the DNA fragments found in the environmental samples such as water, soil or air.
- This method can detect all kinds of organisms, including **viruses, bacteria, archaea, and eukaryotes such as fungi, plants, insects, birds, fish** and other animals from just a few litres of water sample without any direct capture or counting of species.

**Indian Navy launches anti-submarine warfare craft 'Amini'**

The Indian Navy has launched its most advanced and State-of-the-art anti-submarine warfare shallow watercraft, named Amini.

**About:**

- The vessel is named after a strategically important island in the Lakshadweep archipelago on India's western coast, almost 400 km off Kochi, Kerala.
- This is the fourth in the series of eight anti-submarine warfare shallow watercrafts being built in India by domestic shipyards for the Indian Navy.
- Four of these ships, each with more than 80 per cent indigenous content, have been launched this year.



**Nest Initiative**



- The 77-meter-long anti-submarine warfare shallow watercraft has a displacement of 900 tonnes, a maximum speed of 25knots (46.3kmph) and an endurance of approximately 1800 Nautical miles (3333kms).
- The contract for building eight anti-submarine warfare ships was signed between India's Defence Ministry and Garden Reach Shipbuilders and Engineers (GRSE), Kolkata, in April 2019.

Recently, the Indian Green Building Council (IGBC) of the Confederation of Indian Industry launched a rating and certification initiative 'Nest'.

**About the initiative:**

- Objective: To promote sustainable and eco-friendly constructions in the domestic housing sector.
- It was proposed as part of the annual conference to be held at Chennai Trade Centre.

**IGBC Green Building Congress 2023:**

- The annual **IGBC Green Building Congress 2023**, which will be held in the city after a **gap of 10 years**, would provide a platform for the construction industry stakeholders in the country to create a sustainable building environment for achieving net zero carbon emission goals.
- The Tamil Nadu government will be the partner State for the Green Building congress 2023.
- The **World Green Building Council** will be the support partner.
- Under the initiative, the green building rating and certification programmes being covered under 31 categories encompassing;
  - Commercial space,
  - Factories,
  - Railway stations,
  - Special economic zones (SEZs), and
  - Schools.

**50 acres of farmland washed away in landslips in Idukki**



Recently, near Munnar, in Idukki, Kerala witnessed a series of landslips following an extremely heavy rainfall in the region.

**What is Land Slippage?**

- Land slippage is used to describe continuous, slow, movement over a long period of time, whereas landslide is used to describe an instant event.
- Landslides, also known as landslips are several forms of mass wasting that may include a wide range of ground movements, such as rockfalls, mudflows, shallow or deep-seated slope failures and debris flows.

**Landslide vs. Landslip:**

- Landslide is the downward sliding of a **relatively dry mass of earth and rock**, whereas slippage is the sliding of a **mass of land down** a slope or cliff.

## PERSONALITY IN NEWS

## Justice FathimaBeevi (1927-2023)



Former Supreme Court Justice **M. FathimaBeevi**, who was the first female judge at Supreme Court died at 96.

**About:**

- FathimaBeevi was born to AnnaveetilMeeran Sahib and KhadeejaBeevi of **Pathanamthitta** in 1927.
- She completed her schooling at the Catholicate High School and did an undergraduate degree in Chemistry from the University College, Thiruvananthapuram.
- In line with her father's aspiration to make her a lawyer, she did a degree in law and enrolled as lawyer in November 1950.
- She was also the **Governor of Tamil Nadu** from 1997 to 2001.
- Years later, she became the **first woman** member of the country's **Income Tax Appellate Tribunal**, before becoming the first Muslim woman to enter the higher judiciary as a judge with the **Kerala High Court in 1983**.
- **Determined to recast the role of women in Indian judiciary, she then went on to become the first woman judge in the Supreme Court of India in 1989.**

## LOCATION IN NEWS

## BhagwanBirsaMunda Sanctuary



Recently, on the 23rd foundation day of Jharkhand at the Raj Niwas, the Asola-Bhati Wildlife Sanctuary in the national capital will be renamed BhagwanBirsaMunda Sanctuary.

**About the sanctuary:**

- The Asola-Bhatti Wildlife Sanctuary has a unique place in India's network for protected areas.
- It is the only protected area representing the north-eastern, rolling outliers as a landform of the country's oldest hill ranges, the Aravallis.
- The sanctuary covers an area of **32 sq. kms** and this urban sanctuary could be a role model for all the conservation work undertaken by the Department of Forests & Wildlife GNCT of Delhi.

**Floral Diversity:**

- The vegetation in the Wildlife Sanctuary is predominantly an open canopied thorny scrub. The native plants exhibit xerophytic adaptations such as thorny appendages, wax-coated, succulent and tomentose leaves.

## Gulf of Guinea (GoG)



INS Sumedha is on an **Extended Range Operational Deployment** and is currently operating in the Atlantic Ocean along the **West Coast of Africa**.

- During this period, INS Sumedha operated in **the Gulf of Guinea (GoG)** undertaking a **31 days** anti-piracy patrol.

### Do you Know?

- It is believed that the **Gulf of Guinea** today accounts for 7% and 4.5% of the world's gas and oil reserves, respectively.

### About the location:

- It is the most north-eastern part of the tropical Atlantic Ocean, located off the western coast of Africa.
- It is located at **0°0'N and 0°0'E**, at the intersection of the Prime Meridian and the Equator.
- The region is **2.3 million square kilometres**, with 6,000 kilometres of coastline.
- It has a relatively narrow continental shelf.
- Because of the rivers that pour into it and the region's heavy rainfall, it has warm tropical waters with relatively low salinity.
- The Volta and Niger Rivers are two of its primary tributaries.

## Pobitora Wildlife sanctuary



The Supreme Court has asked the Centre and the Assam government to respond to a plea seeking directions to declare the area around **Pobitora Wildlife Sanctuary** an **eco-sensitive zone** and remove all encroachments.

### About the location:

- It is located on the southern bank of the river Brahmaputra in **Morigaon district**, adjacent to **Guwahati in Assam**.
- It was declared a reserve forest in 1971 and a wildlife sanctuary in 1987.
- It is home to the **highest population density** of the Indian One-Horned Rhinoceros species (around 102 rhinos in an area of 38.8 sq. km).
- **Landscape:** It is dominated by alluvial lowlands and marshland.
- The Brahmaputra River offers a natural boundary to the premises of the Pobitora Wildlife Sanctuary on the north, while the GarangaBeel offers a natural boundary to its south.
- Flora:
  - 72% of Pabitora consists of **wet savannah** of Arundodonax, Erianthusravennae, Phragmiteskarka, Imperatacylindrica, and Saccharum spp.
  - Water hyacinth (**Eichorniacrassipes**) is a major problem, especially to waterfowl, as it forms thick mats on the water surface.
- Fauna:
  - Besides rhinoceros, the other animals are **leopard, wild boar, Barking deer, wild buffalo, etc.**
  - It is also home to more than 375 species of resident and migratory birds, such as the **Indian pied Hornbill, Osprey, Hill Myna, Kalij Pheasant, etc.**



## SPECIES IN NEWS

## Vairengte bent-toed gecko



The new species has been named '*Cyrtodactylusvairengtensis*' after the town in Mizoram where it was found, while the common name suggested for the new species is '**Vairengte bent-toed gecko**'.

**About the species:**

- A team of scientists and researchers have discovered a new species of gecko endemic to Mizoram, taking the number of geckos native to the **state to 6**, and **22 across northeast India**.
- The distinct feature of this new species is the number of femoral pores which distinguishes it from other members of the *Cyrtodactylus* family.
- Femoral pores are located on the underside of the hind legs in lizards that secrete a mixture of lipids and proteins and are thought to be used to attract mates and mark territories.

Bewick's swan (*Cygnus columbianusbewickii*)

Scientists has highlighted that the Bewick'sswans are changing their behaviour in a warming world, with fewer making it back to the UK and those that do arriving late.

**About the Species:**

- The smallest of the UK's wild swans, Bewick's have more black on their yellow bills than Britain's other long-distance migrant.
- They're the only one of our swan species to have an orange bill and can be found on a wide-range of water bodies, from a village pond to our largest lakes and are with us year-round.
- They breed around the coasts of the Arctic Ocean in northern Russia, with small numbers coming to the UK to spend the winter.

## Rungialongistachya



The species *Musseandaconferta* and *Rungialongistachya* were discovered during recent explorations.

**About:**

- A team of scientists from the Botanical Survey of India (BSI) have reported the discovery of two new plant species from the evergreen forest patches in the southern end of the Western Ghats.
- The new species *Musseandaconferta* and *Rungialongistachya* were discovered during recent explorations by BSI scientists.
- *Rungialongistachya* belongs to the family of *Acanthaceae* and was discovered from the moist places of Anamalai regions near the Idukki dam site in Kerala.
- The plant is a herb and reaches height of up to 50 cm and grows in the margins of evergreen forests.
- Only eleven species of *Rungia* have been reported from the Western Ghats.



### New species of 'music frog' in Arunachal



Scientists have discovered a new species of 'music frog' in Arunachal Pradesh.

#### About the Species:

- The speciality of this new species of frog, Nidirananoadihing, is that both the male and female are vocal.
- This newly discovered frog has a unique call pattern consisting of two-three notes.
- Initially, we heard the call from a marsh near the Noa-Dihing River, which is quite similar to wild duck species, which we never heard before.
- The new species was named after the Noa-Dihing River, which is near where the specimens were discovered and collected.

#### Features:

- The frogs have a 'rounded' snout and 'smooth' skin with bony protrusions on their backs.
- The amphibians have a 'pale cream' line bordered with dark brown running down the centre of their bodies.
- Their light brown limbs are adorned with dark stripes.

### Lysionotusnamchoonii



Scientists of the Botanical Survey of India (BSI) have discovered a new species of epiphytic plant Lysionotusnamchoonii from Pakke-Kessang district of Arunachal Pradesh.

- Epiphytic means relating to a plant that grows on another plant but does not feed from it like epiphytic orchids.

#### About the Species:

- The native range of the genus Lysionotus is the Himalayas to Japan and Indo-China, and about 50% of the species found are endemic.
- Species of the genus are mostly epiphytic, lithophytic, or terrestrial evergreen erect or climbing subshrubs.
- The new species bears thick leaves and attractive purple flowers.

The species is named in honour of the late **Chau Phunkyoo Nomchoon**, a well-known social reformer from Arunachal Pradesh's Khapti community.

