

WEEKLY CURRENT AFFAIRS MAGAZINE for



**U.P.S.C.-C.S.E.**

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## Topic 1. 'INDIA'S FASTEST' SOLAR-ELECTRIC BOAT BARRACUDA LAUNCHED

*Important for the subject: Environment*

**Solar-electric boat Barracuda:**

**India** has launched its **fastest solar-electric boat** named **Barracuda** (Named after the **swift, long fish, Barracuda**). It aims to advance **India's eco-friendly maritime transportation**.

- Launched at- **Navalt Solar and Electric Boats**, located off **Aroor** in **Alappuzha** in **Kerala**. **Mazagon Dock** will introduce the **eco-friendly vessel** at its **Mumbai dock**.

**Other specifications of the boat:**

- The **14-metre-long, 4.4-metre-wide** vessel can attain a **top speed of 12.5 knots (23 kmph)** and has a range of **seven hours** on a single charge.
- It has **twin 50 kW electric motors**, a **marine-grade LFP battery**, and **6 kW solar power**, epitomising efficient and clean energy usage.
- It is engineered to navigate through waves as tall as four metres and operates without noise, vibration and air pollution.

**Barracuda fish:**

- It is a **large, predatory, ray-finned fish** known for its **fearsome appearance and ferocious behaviour**. It is a **saltwater fish**.
- It is found in **tropical and subtropical oceans worldwide** ranging from the **eastern border of the Atlantic Ocean** to the **Red Sea**, on its **western border the Caribbean Sea**, and in **tropical areas of the Pacific Ocean**.
- Barracudas reside near the **top of the water** and near **coral reefs and sea grasses**. Barracudas are targeted by **sport-fishing enthusiasts**.

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## Topic 2. IS INDIA DOING ENOUGH TO TACKLE CLIMATE CHANGE?

*Important for the subject: Environment*

In a historic first, **all 198 signatories** to the **28th United Nations' Conference of the Parties (COP28)** adopted an agreement to **"transition away"** from **"all fossil fuels"** as opposed to **only coal**, as was agreed upon at **COP26, in Glasgow**.

- Although **India** is the **third largest emitter of GHGs**, it has one of the **lowest per capita emissions** in the world.

**COP28 outcomes:**

- Operationalization of **Loss and Damage Fund**. For the **first time**, it talks about **‘transitioning away from fossil fuels’** in energy systems in a **‘just, orderly and equitable manner’** so as to achieve net zero by 2050.
- Accelerating and substantially **reducing non-carbon-dioxide emissions** globally, including in particular **methane emissions** by 2030.

#### **Tripling of Renewable Energy:**

- The COP28 agreement calls upon countries to contribute to **tripling of global installed capacity of renewable energy**, and **doubling of annual improvements in energy efficiency**.

#### **Global Goal on Adaptation:**

- The framework for GGA has been adopted but it lacks financial provisions. The work programme resulted in the **identification of some common adaptation goals**, important for the entire world.
- These **included** reduction in climate-induced water scarcity, attaining climate-resilience in food and agricultural production, supplies and distribution, and resilience against climate-induced health impacts.

#### **Global Stocktake:**

- It is a comprehensive assessment of where the world was in its fight against climate change and what more needed to be done to meet the climate objectives.
- The GST is **mandated** by the **Paris Agreement** to be a **periodic exercise**, the first one in **2023** and **every five years** thereafter.

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### **Topic 3. ARCTIC REPORT CARD 2023: WILDFIRES TO MELTING SEA ICE, WARMEST SUMMER ON RECORD HAD CASCADING IMPACTS ACROSS ARCTIC**

#### ***Important for the subject: Environment***

The **2023 Arctic Report Card** brought together 82 Arctic scientists from around the world to assess the Arctic’s vital signs, the changes underway and their effects on lives across the region and around the world.

#### **Global warming impact on the Arctic:**

- Temperatures in the Arctic have been rising **more than three times faster** than the global average. **2023** was the **warmest summer** in the Arctic.
- **Wildfires** forced evacuations across **Canada.Greenland** was so warm that a research station at the ice sheet summit recorded melting in late June, only its fifth melting event on record.

- **Sea surface temperatures** in the **Barents, Kara, Laptev and Beaufort seas** were **9 to 12 degrees Fahrenheit (5 to 7 degrees Celsius) above normal** in August. The **winter snow cover** melted early across large parts of **northern Canada**, providing an extra month for the Sun to heat up the exposed ground.
- The **heat and lack of moisture** dried out **organic matter** on and just below the surface; by November, **70,000 square miles** (180,000 square kilometers) had **burned across Canada**, about a **fifth of it in the Northwest Territories**.
- **Dark open water** absorbs the **sun's rays** during the summer and, in the autumn, acts as a heating pad, releasing heat back into the atmosphere. There is a shifts in wind patterns and increasingly intense ocean storms.
- **Climate change led alterations** are damaging the **cultural practices and food security** of **indigenous communities** of the **Arctic region**.
- **Yukon River Chinook** have **decreased in size** by about **6%** since the 1970s, and they're producing fewer offspring. This is impacting the **food security** of the region. **Finland** is putting an effort to restore damaged **reindeer** habitat.
- **Degraded peat lands** also release **greenhouse gases**, contributing to **climate change**. Keeping them healthy helps **capture and store carbon** away from the atmosphere.

#### **Subsea permafrost:**

- It is frozen soil in the ocean floor that is rich in organic matter. It has been gradually thawing since it was submerged after Northern Hemisphere ice sheets retreated thousands of years ago. Today, warmer ocean temperatures are likely accelerating the thawing of this hidden permafrost.
- Just as with permafrost on land, when subsea permafrost thaws, the organic matter it contains decays and releases methane and carbon dioxide – greenhouse gases that contribute to global warming and worsen ocean acidification.

#### **Mackenzie River:**

- It is a river in the **Canadian boreal forest**.
- Source – **Great Slave Lake Drains** into the **Beaufort sea** in the **Arctic Ocean**. It forms **Mackenzie delta** near the **beaufort sea**.
- It forms, along with the **Slave, Peace, and Finlay**, the **longest river system in Canada**, and includes the **second largest drainage basin** of any **North American river** after the **Mississippi**.
- Due to **rising sea surface temperature**, this river is supplying **warm water** into the **Beaufort Sea** to the north, thus resulting in **more melting of ice**.



## Topic 4. COP28 SUMMIT CALLS FOR 'TRANSITION AWAY' FROM FOSSIL FUELS

*Important for the subject: Environment*

COP28 in Dubai UAE adopted the 'Dubai Consensus' to transition away from fossil fuels.

**Dubai Consensus:**

- It calls on Parties **Transitioning away from fossil fuels** in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, to achieve **net zero by 2050** in keeping with the science.
- This implies cutting emissions to **43% of 2019 levels by 2030** and **60% by 2035**. It for the **first time** mentions **methane emission**, a **non-carbon dioxide greenhouse gas that is more potent**, in its **heat-trapping effect**, than **carbon dioxide**.
- It does not talk about curbing **Natural Gas**, designating it as a **"transition gas"** that could be relied on during countries' transition to renewable energy.

**Carbon Space:**

- It refers to the **atmosphere's capacity to hold carbon** that will **not result in temperatures increasing by 1.5 to 2 degrees C** by the end of the century. The globe is already **1.1 C hotter** than it was in the pre-industrialised level.
- Most of this carbon space has already been taken over by the **developed nations** in over a century of fossil fuel and greenhouse gas emissions, and **developing nations** have insisted that what space remains ought to be left for them, while the industrialised western nations must cede space by taking on far more stringent reductions than they have committed to so far.

**India's stand:**

- Developing countries accounted for **3% of greenhouse gases** emitted historically (1850-2019) compared to the **United States (25%)** and the **European Union (17%)**.
- **India** is the **third-largest greenhouse gas emitter**. India at the **Glasgow COP in 2021**, agreed to a **'phase-down'** of coal use.
- Nearly **75% of India's methane emissions** are from the **agricultural sector**.

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## Topic 5. THE LIMITATIONS OF CCS AND CDR AND THEIR GRIP ON FUTURE CLIMATE

*Important for the subject: Environment*

**What are Carbon Capture and storage (CCS) and Carbon Dioxide Removal (CDR)?**

CCS refers to technologies that can **capture carbon dioxide (CO<sub>2</sub>)** at a **source** of emissions

before it is released into the atmosphere.

- These sources include the fossil fuel industry (where coal, oil and gas are combusted to generate power) and industrial processes like steel and cement production.
- **CDR** takes the forms of **both natural means** like **afforestation or reforestation** and **technologies** like **direct air capture**, where machines mimic trees by absorbing CO<sub>2</sub> from their surroundings and storing it underground.
- **CDR technologies: Enhanced rock weathering**, where rocks are broken down chemically; the resulting rock particles can remove CO<sub>2</sub> from the atmosphere. **Bioenergy with carbon capture and storage (BECCS)** captures and stores CO<sub>2</sub> from burning biomass, like wood.

### How much CCS and CDR?

- According to the **IPCC Sixth Assessment Report (AR6)**, to have more than a **50% chance of limiting warming to 1.5 degrees C** (with no or limited overshoot) assume the world can **sequester 5 billion tonnes of CO<sub>2</sub> by 2040**. This is more than India emits currently every year.
- There is no pathway to **1.5 degrees C** in **AR6** that doesn't use **CDR**. CDR ought to be used to counterbalance hard-to-abate residual emissions. The **2023 'Land Gap' report** estimated that various governments have proposed to **remove CO<sub>2</sub> using around one billion hectares of land**.

### Challenges:

- CDR projects can adversely affect land rights of indigenous communities and biodiversity and compete with other forms of land-use, like agriculture that is crucial for ensuring food security.

### Deep Decarbonization Pathways:

- Launched in **October 2013** as a joint collaboration between (**Institute for Sustainable Development and International Relations**) **IDDRI** and (**Sustainable Development Solutions Network**) **SDSN**.
- Its **primary objective** was to **support a positive outcome at COP21**, by demonstrating that country-driven deep decarbonization pathways to 2050 can be a relevant instrument to guide national ambition and actions.
- To do so, a group of domestic research teams from 16 countries – all large emitting G20 countries, both developed and emerging – was gathered to elaborate country-driven pathways consistent with the global goal of stabilizing global warming to 2°C.

## **Topic 6. A QUARTER OF FRESHWATER FISH SPECIES RISK EXTINCTION BY CLIMATE CHANGE: IUCN**

*Important for the subject: Environment*

The IUCN Red List assessment highlights the peril facing about a quarter of the world's freshwater fish species due to climate change. Out of nearly 15,000 species assessed, over 3,000 are at risk of extinction.

- Factors like decreasing water levels, shifting seasons, and rising sea levels are impacting these fish, compounded by pollution, dams, overfishing, disease, and invasive species.
- Examples include the decline of the Atlantic salmon population by 23%, moving it from least concern to near threatened, and large-toothed Lake Turkana robber (*Brycinus ferox*).
- Climate change disrupts their life cycles, affecting development, prey availability, and habitats.
- Additionally, threats to species like the green turtle, big-leaf mahogany, and Saiga antelope were noted, largely attributed to climate-related issues, illegal logging and trade, habitat loss, incidental bycatch in industrial and artisanal fishing, and human activities.

**Conservation efforts:**

- The scimitar-horned oryx and Saiga antelope (found in Kazakhstan, Uzbekistan, Russia and Mongolia) are showing population recoveries due to conservation efforts.

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## **Topic 7. UNNATURAL CAUSES CLAIM MORE THAN 490 WILD ELEPHANT LIVES IN FIVE YEARS**

*Important for the subject: Environment*

A capacity-building workshop on 'Minimising elephant mortalities on railway track' for the officials of Indian Railways is being organised at the Dehradun-based Wildlife Institute of India (WII).

**Elephant population in India:**

- India has nearly 30,000 wild elephants.
- Karnataka had the highest number of wild elephants at 6,049, followed by Assam at 5,719, Kerala at 5,706, and Tamil Nadu at 2,761. 32 elephant reserves cover around 76,508-sq-km area in 14 States.

**Elephant in captivity:**

- India had 2,589 elephants in private custody, excluding the zoological parks. **902 captive elephants** are in **Assam**, followed by **Kerala -518, Karnataka – 146, TamilNadu – 135, Rajasthan- 113, Arunachal Pradesh – 109, West Bengal- 100, Tripura – 64, Nagaland – 15 and Meghalaya – eight.**

#### Elephant death:

- **India** has lost **494 elephants** to **train-hit incidents, electrocution, poaching, and poisoning** over the past **five years.**
- **India** lost more than **57 elephants per year** due to **electrocution** and more than **12 elephants per year** due to **collisions** with trains over the past five years.
- **Assam** had the **highest number of elephant deaths** due to **train hits** with **62 deaths**, followed by **West Bengal at 57, and Odisha at 27.**

#### Loss of herd dynamics:

- **Loss of older elephants** disrupts **herd dynamics** and **increases the risk of human-elephant conflict**, as younger elephants are more likely to stray into human-dominated areas.

#### Measures taken:

- 150 elephant corridors across 15 elephant ranges in the country have been ground-validated.
- Mitigate the impact of power transmission lines and other power infrastructure on elephants and other wildlife.
- Permanent and temporary speed restrictions have been imposed in identified elephant corridors and habitats.

### Topic 8. COP28 TEXT SILENT ON CARBON MARKETS

*Important for the subject: Environment*

#### System of Carbon Credits:

An entity that does an activity that reduces emissions of greenhouse gases (or removals from the atmosphere) is given a ‘**credit**’ that can be bought by another entity that must reduce emissions — either by law or voluntarily. This way, money flows into climate action.

- **COP28** climate talks is **silent on carbon credits** because the parties could not come to an agreement on **Article 6.2 (bilateral trading)** and **Article 6.4 (carbon markets)** of the **Paris Agreement.**
- There is a reference to **Article 6 .1 (voluntary cooperation)** and **Article 6.8 (non market approaches, such as technology transfer)**, but nothing on **Articles**

6.2 and 6.4, which are the operative provisions of the Article.

- A vibrant system for trading in **carbon credits** (or carbon offsets) is a key mechanism for **financing climate action projects**.
- The **World Bank** has estimated that **carbon credits** could **reduce the cost of countries' climate action commitments** (Nationally Determined Contributions or NDCs) by about **\$250 billion by 2030**.

#### **Internationally Transferred Mitigation Outcome (ITMO):**

- **Article 6.2** of the **Paris Agreement** allows countries to **trade in carbon credits** with one another through bilateral or multilateral deals. These **traded credits** are called **Internationally Transferred Mitigation (ITMO)**.
- The **issue** is whether **nongovernment entities**, including the **private sector**, can buy offsets from a country or not.
- For example, can the **Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)**, or **Google**, buy carbon credits from, say, the Indian government, to offset its own obligations?
- Such a deal comes under the head **Other International Mitigation Purposes (OIMP)**. **ITMOs** can be transferred for **NDC compliance** or for **OIMP**.
- There are some technical issues such as **authorisation of credits** and **interoperability of registries**.
- **Article 6.4 of Paris Agreement** is even more complicated, it deals with a **market mechanism for trading in carbon credits**. Rules need to be set up for measuring baselines and recognising additionality.

#### **CORSIA:**

- CORSIA is the **first global market-based measure** for any sector and represents a cooperative approach that moves away from a “patchwork” of national or regional regulatory initiatives.
- It offers a harmonized way to reduce emissions from international aviation, minimizing market distortion, while respecting the special circumstances and respective capabilities of ICAO Member States.
- CORSIA complements the other elements of the basket of measures by offsetting the amount of CO<sub>2</sub> emissions that cannot be reduced through the use of technological improvements, operational improvements, and sustainable aviation fuels with emissions units from the carbon market.
- CORSIA is **applicable only to flights originating from one country to another**.

**LTAG:**

- 41st ICAO Assembly adopted **LTAG for international aviation of net-zero carbon emissions by 2050** in support of the UNFCCC Paris Agreement's temperature goal.
- The LTAG does not attribute specific obligations or commitments in the form of emissions reduction goals to individual States.
- Instead, it recognizes each State's special circumstances and respective capabilities e.g., the level of development, maturity of aviation markets.

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**Topic 9. NEW INITIATIVE TO TACKLE DEBT & CLIMATE CHANGE LAUNCHED BY KENYA, COLOMBIA, FRANCE*****Important for the subject: Environment***

At the COP28 in Dubai, UAE, leaders from **Kenya, Colombia and France** launched the **Global Expert Review on Debt, Nature and Climate**.

**Global Expert Review on Debt, Nature and Climate:**

- **First proposed** at the **Summit for a New Global Financing Pact in Paris** in June 2023.
- **Launched by-Kenya, Colombia and France.**
- Under this, a **coalition of experts from countries across the world** is going to **independently review the relationship between sovereign debt and its impacts on hindering climate ambition.**

**Initiatives launched at COP28, Dubai, UAE:**

- **The UAE Leader's Declaration on a Global Climate Finance Framework.** The declaration includes elements on, inter alia, delivering on commitments and achieving ambitious outcomes and widening the sources of concessional finance for climate action.
- **International taxation taskforce** was launched by **France** with partners including **Kenya, Barbados and Spain** to push for **new levies to raise further money for climate action**, especially from **rich countries**.
- Top multilateral development banks and international institutions announced a new **global taskforce for scaling debt-for-nature swaps**.
- **Debt swaps** are one way to change the terms of a **country's borrowing** – with bilateral government lenders, development finance institutions or private banks – either by giving states more time to repay loans or reducing interest rates and the amounts they must pay back.
- With the **agreement of creditors**, **debt swaps** can help the **world's low-income countries avoid default and enable them to redeploy** part of their debt repayments

to invest in measures to tackle climate change, nature protection, health or

- Multilateral Development Banks also released a common set of principles to track ‘nature-positive finance.’
- **Nature-positive finance** aims to mobilise financial institutions to ensure a nature-positive world. Members of the financial sector can contribute to curbing nature loss and aligning their financial flows to nature-positive outcomes.

#### **Debt burden among developing countries:**

- African nations are burdened with debt acquired during the pandemic. They need to develop resilience but access to capital is hindering climate action.
- Out of **52** of the **most indebted countries**, **23** are in **Africa**. **Ethiopia** is on the verge of joining **Zambia** and **Ghana** on the list of nations that have **defaulted on sovereign debt**.

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### **Topic 10. INDIA LED GLOBAL RIVER CITY ALLIANCE LAUNCHED AT COP28**

#### *Important for the subject: Environment*

India led Global River City alliance launched at COP28

The **National Mission for Clean Ganga (NMCG)** launched the **Global River Cities Alliance (GRCA)** at the **United Nations Climate Change Conference COP28** in **Dubai**.

- The **GRCA expands the River Cities Alliance**, originally formed by NMCG with **142 Indian river cities**, by adding **river cities from Den Haag (Netherlands), Adelaide (Australia), and Szolnok (Hungary)**.
- The **alliance aims to foster global collaboration for river conservation and sustainable water management**.
- Earlier, the **RCA had signed a Memorandum of Common Purpose with the Mississippi River Towns and Cities Initiative of the US**.
- The **NMCG Director General emphasized the importance of mainstreaming rivers in urban planning**.

#### **Some facts about River Cities Alliance:**

- The **River Cities Alliance was launched in 2021**, to represent a **pioneering collaboration between the Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs**.
- It is the **first-of-its-kind global initiative**, symbolizing the successful partnership between the two ministries.
- The **primary objective is to provide member cities with a platform for discussing and exchanging vital information related to sustainable urban river management**, sharing

best practices, and promoting innovation.

- The alliance is **open to all river cities in India**, the Alliance **allows cities to join at any time**.
- The alliance has been **launched initially with 30 cities** namely Dehradun, Rishikesh, Haridwar, Srinagar, Varanasi, Kanpur, Prayagraj, Farrukhabad, Mirzapur, Mathura, Bijnor, Ayodhya, Patna, Bhagalpur, Begusarai, Munger, Sahibganj, Rajmahal, Howrah, Jangipur, Hugli-Chinsurah, Berhampore, Maheshtala, Aurangabad, Chennai, Bhubaneshwar, Hyderabad, Pune, Udaipur and Vijayawada.
- **The Alliance focuses on three broad themes: Networking, Capacity Building, and Technical Support.** The Secretariat of the Alliance is established at the National Institute for Urban Affairs (NIUA).

**Some facts about The National Mission for Clean Ganga (NMCG):**

- It was **registered as a society in 2011** under the Societies Registration Act 1860.
- It acted as the **implementation arm of National Ganga River Basin Authority (NGRBA)** which was constituted under the provisions of the Environment (Protection) Act (EPA), 1986.
- **NGRBA has since been dissolved** with effect from 2016 consequent to the constitution of National Council for Rejuvenation, Protection and Management of River Ganga which is referred as National Ganga Council.

**What is the Aim & Objective of NMCG**

- To ensure **effective abatement of pollution and rejuvenation of the river Ganga by adopting a river basin** approach to promote inter-sectoral coordination for comprehensive planning and management. To **maintain minimum ecological flows** in the river Ganga with the **aim of ensuring water quality and environmentally** sustainable development.
- The Act envisages **five tier structure** at national, state and district level to take measures for prevention, control and abatement of environmental pollution in river Ganga and to ensure continuous adequate flow of water to rejuvenate the river Ganga as below:

**National Ganga Council under the chairmanship of Prime Minister of India.**

- **Empowered Task Force (ETF) on river Ganga** under chairmanship of Union Minister of Jal Shakti (Department of Water Resources, River Development and Ganga Rejuvenation).

**National Mission for Clean Ganga (NMCG). State Ganga Committees.**

- **District Ganga Committees** in every specified district abutting river Ganga and its tributaries in the states.



## Topic 11. DRAFT CLIMATE DEAL FAILS TO ‘PHASE OUT’ FOSSIL FUEL

### *Important for the subject Environment*

At the ongoing COP28 in Dubai, UAE, the draft climate deal did not ask countries for ‘phasing out’ coal but recommended to “rapidly phase down unabated coal,” that countries such as **India, Indonesia and China** — major consumers of coal power — could find objectionable.

- There is a need to bring parity between **coal, oil and gas**, and the need to do away with them to keep temperature increase below 1.5°C by the end of the century.
- It called for “reduce both consumption and production of fossil fuels, in a just, orderly and equitable manner so as to achieve net zero by, before, or around 2050 in keeping with the science.”
- **Burning fossil fuels** (coal, oil, and natural gas) releases **carbon dioxide (CO<sub>2</sub>)** into the atmosphere, and CO<sub>2</sub> is a GHG. Industrial activities, transportation, and deforestation contribute to GHG emissions.
- **Burning of fossil fuel** contributes nearly **80%** of the **greenhouse gas emissions** of which **coal** makes up about **40%** and **oil and gas** collectively constitute the rest.

## Topic 12. GREEN TURTLES NESTING RANGE EXPANDS UNDER WARMING CLIMATE

### *Important for the subject Environment*

Rising global temperatures could lead to an increase in the nesting range of green turtles in the **Mediterranean Sea**, as per the study.

- Under the **worst-case climate scenario**, the **nesting range** could **increase** by over **60% points**, spreading **west** from the current area to include much of the **North African, Italian, Greek coastlines and Adriatic sea**.
- **Climate change led rising sea surface temperatures** is impacting marine life including sea turtles as the sex of their offspring is dependent on **incubation temperature**.
- **Sea surface temperature, sea salinity, and human population density** most affected the suitability of a specific location as a nesting site.

### **Green turtle (Chelonia mydas):**

- Also known as the **black (sea) turtle** or **Pacific green turtle**. It is a **species of large sea turtle** of the family **Cheloniidae**. It is the **only species** in the genus **Chelonia**.
- Its range extends throughout **tropical and subtropical seas** around the world, with two distinct populations in the **Atlantic and Pacific Oceans**, but it is also found in the **Indian**

Ocean.

- They migrate long distances between feeding grounds and hatching beaches. Listed as **endangered** by the **IUCN Red List** and **CITES**.

### **Topic 13. THE STUDY LOOKS AT WAYS TO MANAGE GRASS DOMINANCE IN SAVANNAHS**

*Important for the subject Environment*

A study from the **Eastern Ghats** highlights the **dominance of native Cymbopogon grass (lemongrass)** in a mesic **savannah ecosystem** and probes the causes and control measures to take it back to the **desired or historical state to preserve biodiversity and ecosystem services**.

**Cymbopogon grass (lemongrass):**

- **Cymbopogon** is a **C4 grass** or a **warm-season grass** that needs **plenty of sunlight** and is **heat and fire-tolerant**. It is a genus of **Asian, African, Australian, and tropical island plants** in the **grass family**.
- Some species (particularly **Cymbopogon citratus**) are commonly cultivated as **culinary and medicinal herbs** because of their scent, resembling that of **lemons (Citrus limon)**. In **India**, **C. citratus** is used as a **medical herb** and in **perfumes**. It is consumed as a **tea for anxiety** in Brazilian folk medicine.
- The grass contains **oil** and the **dominance of such inflammable grass** can result in more **frequent, large fires** that do not favour the biodiversity and the ecosystem.
- **Savannah ecosystems** have existed in **India** for over a million years. **Fire** is an integral part of the management of savannahs. Dry ecosystems like savannahs depend on fire to recycle biomass.

### **Topic 14. INDIA HAD FOURTH BEST RANKING IN CLIMATE PERFORMANCE AMONG COUNTRIES DURING 2022, SAYS REPORT**

*Important for the subject: Environment*

**India** has been **ranked seventh** in **climate performance** during **2022**. But the country is effectively **fourth** as **no one has occupied the first three ranks** in the ‘**very high**’ performance category.

Last year **India (67.35 per cent)** was in the eighth spot.

**About the Climate Change Performance Index (CCPI) 2024:**

- Published annually since 2005
- **CCPI** is an instrument to enable **transparency in national and international climate**

**politics.** It uses a standardized framework to compare the climate performance of 63 countries and the EU, which together account for over **90% of global greenhouse gas emissions.**

- **The climate protection performance is assessed in four categories:** GHG Emissions (40%), Renewable Energy (20%), Energy Use (20%) and Climate Policy (20%).
- **Top countries- Denmark** (75.59 per cent), **Estonia** (72.07), the **Philippines** (70.70), and **India** (70.25 per cent).

**Bottom countries: Saudi Arabia, Iran, UAE and Korea.**

- **India** was ranked **9th** in **GHG Emissions**, **10th** in **Energy Use**, **10th** in **Renewable energy**, and **37th** in **Climate policy**.
- Most developed countries like the USA, the U.K. and Italy fared poorly compared to last year. **China** retained the same position — **51st** — compared to a year back. **Brazil improved 15 positions** and **South Africa slipped one position** on the same benchmark.
- Among **developed countries**, **Italy** slipped **15 positions** in ranking, the **United Kingdom** and **France** **nine positions**, **Japan** **eight positions** and the **United States** has been pushed back **five positions**. **Germany** and the **European Union** **improved** marginally.

### Topic 15. DE-EXTINCTING THE DODO: WHY SCIENTISTS ARE PLANNING TO BRING BACK THE BIRD TO MAURITIUS

#### *Important for the subject Environment*

An ambitious **new project** promises to bring the extinct **dodo** back to life and **re-introduce** it in its **once-native habitat in Mauritius**. It is a collaboration between **genetic engineering** company **Colossal Biosciences** and the **Mauritian Wildlife Foundation**.

- The dodo (*Raphus cucullatus*) is an **extinct flightless bird** that was **endemic to the island of Mauritius**, which is **east of Madagascar** in the Indian Ocean. The dodo's closest relative was the also-extinct and **flightless Rodrigues solitaire**.
- The two formed the subfamily **Raphinae**, a clade of **extinct flightless birds** that were a part of the family which includes **pigeons** and **doves**.
- The closest living relative of the dodo is the **Nicobar pigeon**.

#### **Why dodos went extinct?**

- They became extinct mainly due to humans and animals introduced by them in Dodo's native environment.
- **Dutch colonists** first landed in **Mauritius** in **1598**. **Dodos** disappeared around **80 years later**. Not only did the Dutch **hunt the meaty bird**, but the animals they brought with

them — **dogs, cats, rats, etc.**— wreaked havoc on the defenceless dodos and their eggs

### How geneticists plan to bring the Dodo back:

- **Accurate and complete genetic information** is required to **re-introduce** an **extinct species**.
- This is known as a **species' genome** — each genome contains all of the information needed to build that organism and allow it to grow and develop. Scientists have successfully sequenced the entire genome of the dodo.
- **Primordial germ cells (PGCs)** are basically embryonic precursors of a species' sperm and egg.

### Why reintroducing Dodo?

- Reintroducing the dodo to Mauritius can help **restore its fragile ecosystem**. The **bird's large beak** indicates that it consumed **large-seeded fruits**, and thus played a role in the seeds' dispersal.
- The technology would also help to **conserve and restore other avian populations**.
- **Challenge in re-introduction-** For dodos to survive, invasive species including rats, feral cats, pigs and dogs, monkeys, mongooses, and crows may need to be “excluded, rehomed or even controlled.

## Topic 16. GLOBAL COOLING PLEDGE AT COP28: HOW REFRIGERATORS AND ACS CONTRIBUTE TO GLOBAL WARMING

### *Important for the subject Environment*

**Sixty-three countries**, including **the US, Canada, and Kenya**, signed up to the **world's first-ever pledge to drastically cut cooling emissions** at the ongoing COP28 climate summit.

### Global Cooling Pledge:

It commits the countries to reduce their cooling emissions by at least 68% by 2050 and outlines several strategies to tackle them. These kinds of **emissions** now account for **7% of global greenhouse gas emissions** and are expected to **triple by 2050**.

### Cooling emission and global warming:

- Generated from refrigerants, used in appliances like ACs and refrigerators, and the energy used for cooling.
- **Electricity**, used for refrigerators, is generated from fossil fuels, that contribute to global warming.
- The energy consumption for space cooling (the process of cooling indoors) has more than tripled. Earlier, most of the cooling appliances used **chlorofluorocarbons (CFCs)** as

refrigerants.

- But since the **1987 Montreal Protocol**– an agreement signed by nearly 200 countries to freeze the production and consumption of ozone-depleting substances, including CFCs– CFCs were largely **replaced by two groups of chemicals, hydro fluorocarbons (HFCs) and hydro chlorofluorocarbons (HCFCs).**
- **HFCs and HCFCs don't damage the ozone layer but they are powerful greenhouse gasses, and hundreds to thousands of times more potent than carbon dioxide (CO<sub>2</sub>) per unit of mass.**
- **HFC-134a**, a form of **HFC** and most commonly used in **domestic fridges**, has a global warming potential of 3,400 times that of CO<sub>2</sub>

#### **Steps taken to reduce HFCs:**

- In 2016, over **150 countries** signed the **Kigali Amendment** to the **Montreal Protocol**, agreeing to **reduce HFC consumption by 80% by 2047**. If achieved, this could avoid more than **0.4 degrees Celsius** of **global warming by 2100**.
- **Natural refrigerants**, such as **ammonia, certain hydrocarbons, and CO<sub>2</sub>** can be used in **cooling devices**. These chemicals have **lower or zero global warming potential**.
- Proper management and reuse of potent refrigerant gases could slash 100 billion gigatons of global CO<sub>2</sub> emissions between 2020 and 2050.

#### **Climate and Clean Air Coalition (CCAC):**

- It is an international body working to reduce powerful but short-lived climate pollutants (SLCPs), including methane, black carbon, HFCs, and tropospheric ozone.
- Launched in **2012**, by the governments of **Bangladesh, Canada, Ghana, Mexico, Sweden** and the **United States**, along with the **United Nations Environment Programme (UNEP)**.

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### **Topic 17. CLEAN GANGA MISSION SIGN PACT WITH MISSISSIPPI RIVER INITIATIVE**

#### ***Important for the subject Environment***

Clean Ganga mission sign pact with Mississippi river initiative

The **National Mission for Clean Ganga (NMCG)**, responsible for **implementing India's Namami Gange** scheme, has **entered into a Memorandum of Common Purpose (MoCP) with the Mississippi River Cities and Towns Initiative (MRCTI)**, representing **124 cities and towns along the Mississippi River** in the United States.

- The MoCP was signed by **G. Asok Kumar, DG, NMCG, and representatives from various US cities, including La Crosse, Greenville, and New Orleans.**

- The signing ceremony, conducted at the Rotary Hall as **part of COP28 in Dubai, involved senior officials from the US State Department, UNEP, National Institute of Urban Affairs (NIUA), and Rotary International.** NMCG signed the MoCP on behalf of the River Cities Alliance (RCA).

#### **Some facts about River Cities Alliance:**

- The River Cities Alliance was **launched in 2021, to represent a pioneering collaboration between the Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs.**
- It is the **first-of-its-kind global initiative**, symbolizing the successful partnership between the two ministries.
- The **primary objective is to provide member cities** with a platform for discussing and exchanging **vital information related to sustainable urban river management**, sharing best practices, and promoting innovation.
- The alliance is **open to all river cities in India**, the Alliance allows cities to join at any time.
- The alliance has been **launched initially with 30 cities namely Dehradun, Rishikesh, Haridwar, Srinagar, Varanasi, Kanpur, Prayagraj, Farrukhabad, Mirzapur, Mathura, Bijnor, Ayodhya, Patna, Bhagalpur, Begusarai, Munger, Sahibganj, Rajmahal, Howrah, Jangipur, Hugli-Chinsurah, Berhampore, Maheshtala, Aurangabad, Chennai, Bhubaneshwar, Hyderabad, Pune, Udaipur and Vijayawada.**
- The Alliance focuses on three broad themes: **Networking, Capacity Building, and Technical Support.**
- The Secretariat of the Alliance is established at the National Institute for Urban Affairs (NIUA).

#### **Some facts about The National Mission for Clean Ganga (NMCG):**

- It was **registered as a society in 2011 under the Societies Registration Act 1860.** It acted as the **implementation arm of National Ganga River Basin Authority (NGRBA)** which was constituted under the **provisions of the Environment (Protection) Act (EPA), 1986.**
- **NGRBA has since been dissolved with effect from 2016 consequent to the constitution of National Council for Rejuvenation, Protection and Management of River Ganga** which is referred as **National Ganga Council.**

#### **What is the Aim & Objective of NMCG**

- To ensure **effective abatement of pollution and rejuvenation of the river Ganga by adopting a river basin approach** to promote inter-sectoral coordination for comprehensive planning and management.

- To maintain minimum ecological flows in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.
- The Act envisages five tier structure at national, state and district level to take measures for prevention, control and abatement of environmental pollution in river Ganga and to ensure continuous adequate flow of water to rejuvenate the river Ganga as below:

#### National Ganga Council under the chairmanship of Prime Minister of India.

- Empowered Task Force (ETF) on river Ganga under chairmanship of Union Minister of Jal Shakti (Department of Water Resources, River Development and Ganga Rejuvenation).

#### National Mission for Clean Ganga (NMCG).

#### State Ganga Committees.

- District Ganga Committees in every specified district abutting river Ganga and its tributaries in the states.

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### Topic 18. GAME-CHANGER GENE THERAPY OFFERS NEW HOPE FOR THOSE WITH SICKLE CELL DISEASE

#### *Important for the subject: Science and Technology*

Gene therapy offers new hope for those with sickle cell disease.

Less than a month after the U.K. drug regulator **approved Casgevy**, the gene therapy to treat people above 12 with sickle cell disease and beta thalassemia, the U.S. FDA has approved two gene therapies — Casgevy and Lyfgenia — to treat sickle cell disease in patients over 12. Its decision on approving Casgevy gene therapy for treating beta thalassemia is expected by March 2024.

#### Gene therapy

- Gene therapy is a technique that uses a gene(s) to treat, prevent or cure a disease or medical disorder. Often, gene therapy works by adding new copies of a gene that is broken, or by replacing a defective or missing gene in a patient's cells with a healthy version of that gene.
- Both inherited genetic diseases (e.g., **hemophilia and sickle cell disease**) and acquired disorders (e.g., leukemia) have been treated with gene therapy.
- It is a direct way to treat genetic conditions as well as other conditions. There are also other related approaches like gene editing. There are many different versions and approaches to gene therapy and gene editing.
- It all rests on understanding how genes work and how changes in genes can affect our health. Researchers all over the world are studying many different facets of gene therapy

and gene editing.

### Beginning of gene therapy using the CRISPR-Cas9 tool

- These landmark decisions mark the beginning of gene therapy using the CRISPR-Cas9 tool to treat diseases that could otherwise be cured only through bone marrow transplantation.
- While **Lyfgenia uses a disabled lentivirus as a vector to introduce into the blood stem cells a new gene for haemoglobin that mimics the healthy version, Casgevy uses the gene-editing tool of CRISPR-Cas9 to disable a particular gene (BCL11A) that turns off foetal haemoglobin production in blood stem cells.**
- While about 10% of adults continue to produce foetal haemoglobin, in others, the BCL11A gene prevents the production of foetal haemoglobin.
- By disabling the BCL11A gene, foetal haemoglobin that is produced, which does not have the abnormalities of adult haemoglobin, helps treat patients with sickle-cell disease or beta thalassaemia.
- In clinical trials, 28 of 29 sickle-cell disease patients who received Casgevy gene therapy were relieved of the debilitating effects of the disease for a year; for beta thalassaemia, 39 of 42 patients did not require blood transfusion for one year, and in the remaining three the need for blood transfusion reduced by more than 70%.
- In the case of clinical trials involving Lyfgenia, 30 of 32 sickle cell disease patients did not suffer from severe blocked blood flow caused by sickle cells, while 28 of 32 patients did not experience any blocked blood flow events six to 18 months post-infusion.

### Huge potential and huge expenditure

- Since both **gene therapies use patients' own blood cells for gene editing, the number of patients who can potentially be treated will be huge as these treatments do not rely on matching bone marrow donors.**
- But in reality, these treatments would be exorbitantly expensive. Also, much like bone marrow transplantation, only certain hospitals will be equipped to extract a patient's blood stem cells and use the genetic editing tool to the stem cells before re-injecting them, thus limiting the number of beneficiaries.

### About Sickle cell disease

- **Sickle cell disease is an inherited blood disorder.** It is marked by flawed haemoglobin. That's the protein in red blood cells that carries oxygen to the tissues of the body. So, sickle cell disease interferes with the delivery of oxygen to the tissues.
- **Red blood cells** with normal haemoglobin are **smooth, disk-shaped, and flexible, like doughnuts without holes.** They can move through the blood vessels easily. Cells with sickle cell haemoglobin are stiff and sticky.



- When they lose their oxygen, they form into the shape of a sickle or crescent, like the letter C. These cells stick together and can't easily move through the blood vessels.
- This can block small blood vessels and the movement of healthy, normal oxygen-carrying blood. The blockage can cause pain.
- Normal red blood cells can live up to 120 days. But sickle cells only live for about 10 to 20 days. Also, sickle cells may be destroyed by the spleen because of their shape and stiffness. The spleen helps filter the blood of infections.
- Sickled cells get stuck in this filter and die. With less healthy red blood cells circulating in the body, you can become chronically anaemic. The sickled cells also damage the spleen. This puts you at greater risk for infections.

### **Topic 19. PATENT EXCLUSIONS — MADRAS HIGH COURT SHOWS THE WAY**

#### ***Important for the subject: Science and Technology***

Madras High Court's recent rulings on pharmaceutical patents clarify Section 3(e) and Section 3 (i) exclusions, emphasizing evidence and contextual analysis for patent eligibility.

- The decisions highlight the necessity of bright-line rules for consistency in patent office decisions and suggest a legislative role in addressing gaps in pharmaceutical patent issues.
- Recent Madras High Court judgments by Justice Senthilkumar Ramamoorthy bring clarity to pharmaceutical patent exclusions in the Indian context.
- The first case, **Novozymes vs Assistant Controller of Patents**, interprets Section 3(e), excluding compositions that are mere aggregations. The court specifies that known aggregates can still be patent-eligible if individual components meet patent criteria.
- The second case, **Hong Kong and Shanghai University vs Assistant Controller of Patents**, deals with Section 3(i), excluding inventions related to the treatment of humans or animals. The court provides insights into the types of diagnoses excluded under this provision.

#### **Key Challenges:**

- Lack of bright-line rules in the interpretation of patent exclusions, leaving room for ambiguity and varied decisions.
- Balancing the interests of pharmaceutical innovation, public health, and preventing overbroad monopolies poses a challenge for the courts.
- The need for more legislative clarity on exclusions, with suggestions for in vitro process considerations and potential compulsory licensing.

### Key Terms and Phrases:

- **Section 3(e):** Exclusion related to compositions that amount to a mere aggregation of components.
- **Section 3(i):** Exclusion pertaining to inventions involving processes for the treatment of humans or animals.
- **Bright-line rules:** Clear and specific guidelines for interpreting patent exclusions, ensuring consistency in decision-making.

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### Topic 20. 74% INDIANS COULD NOT AFFORD HEALTHY DIET IN 2021

#### *Important for the subject: Science and Technology*

More than 74% of Indians could not afford a healthy diet in 2021, the Food and Agriculture Organization of the United Nations said in a report.

#### **What is the State of Food Security and Nutrition in the World (SOFI) Report?**

- SOFI is an annual flagship report **jointly prepared by:** Food and Agriculture Organisation of the United Nations (**FAO**), International Fund for Agricultural Development (**IFAD**), United Nations Children's Fund (**UNICEF**), World Food Programme (**WFP**) and World Health Organisation (**WHO**).
- **Aim:** To inform on progress towards ending hunger, achieving food security and improving nutrition and to provide an in-depth analysis of key challenges for achieving this goal in the context of the SDG.

#### **What are the key findings of the SOFI 2023 related to India?**

- **Healthy diet:** India has the lowest cost of a healthy diet among BRICS nations and neighboring countries. However, a significant portion of the population can't afford it due to stagnant or decreasing incomes.
- For instance, meal costs in Mumbai increased by 65% in five years, while salaries/wages only grew by 28%-37%.
- **Healthy diet in terms of Purchasing Power Parity(PPP):** In India, a healthy diet costs 3.066 PPP dollars per person per day, the lowest among the countries considered.
- PPP stands for 'Purchasing Power Parity'. In simple terms, 1 PPP dollar in the United States should buy the same amount of goods and services as 1 PPP dollar in, say, India or Brazil.
- Share of the population that is unable to afford a healthy diet in 2021: In India, 74% were not able to afford a healthy diet, the fourth highest share among the nations considered.
- Change in the cost of a healthy diet over the years across regions: Between 2019 (before

the COVID-19 pandemic) and 2021, the expense of maintaining a healthy diet increased by almost 9% in Asia — the highest across regions.

- Change in the number of people unable to afford a healthy diet over time across regions: Between 2019 and 2021, Asia and Africa saw the highest growth in the number of people who could not afford a healthy diet.
- In Asia, South Asia had the highest number of people (1.4 billion) and the highest share (72%) who could not afford a healthy diet.

### **What is the Food and Agriculture Organization?**

#### **About:**

- FAO is a specialised agency of the United Nations that leads international efforts to defeat hunger.
- World Food Day is celebrated every year around the world on 16th October. The day is celebrated to mark the anniversary of the founding of the FAO in 1945.
- It is one of the UN food aid organisations based in Rome (Italy). Its sister bodies are the World Food Programme and the International Fund for Agricultural Development (IFAD).

#### **Initiatives Taken:**

- Globally Important Agricultural Heritage Systems (**GIAHS**). Monitors the **Desert Locust** situation throughout the world.
- The **Codex Alimentarius Commission** or CAC is the body responsible for all matters regarding the implementation of the Joint FAO/WHO Food Standards Programme.
- The **International Treaty on Plant Genetic Resources for Food and Agriculture** was adopted by the Thirty-First Session of the Conference of the FAO in 2001.

#### **Flagship Publications:**

- The State of World Fisheries and Aquaculture (SOFIA).
- The State of the World's Forests (SOFO).
- The State of Food Security and Nutrition in the World (SOFI).
- The State of Food and Agriculture (SOFA). Markets
- The State of Agricultural Commodity (SOCO).

## **Topic 21. HOPES DASHED AS LAST HIV VACCINE TRIAL IN AFRICA FOR THIS DECADE ENDS IN FAILURE**

*Important for the subject: Science and Technology*

A trial of a **human immunodeficiency virus (HIV) vaccine** in **Africa** has been stopped after preliminary data showed it was not effective in preventing infections.

### **PrEPVacc:**

- **PrEPVacc** is the **study trial** of **Vaccine** for **HIV**. Researchers were testing a new form of oral **pre-exposure prophylaxis (PrEP)**, a drug that reduces the risk of getting HIV.
- It was led by African researchers with support from European scientists. Trial was done in **Uganda, Tanzania** and **South Africa**.
- About **39 million people worldwide** are **living with HIV**, with more than **25 million** in **sub-Saharan Africa**, according to the **Joint United Nations Programme on HIV/AIDS (UNAIDS)** and **World Health Organization (WHO)**.

### **Joint United Nations Programme on HIV?**

#### **AIDS (UNAIDS):**

- **Established** by **ECOSOC** resolution 1994/24 in **1994**, **UNAIDS** officially launched in January **1996**.
- The **aim** of **UNAIDS** is to help mount and support an expanded response to **HIV/AIDS**, one that engages the efforts of many sectors and partners from government and civil society.
- **UNAIDS** seeks to prevent the **HIV/AIDS** epidemic from becoming a severe pandemic.
- **UNAIDS** is **headquartered** in **Geneva, Switzerland**, where it shares some site facilities with the **World Health Organization**.
- It is a member of the **United Nations Development Group**.

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## **Topic 22. HOW FRACTALS OFFER A NEW WAY TO SEE THE QUANTUM REALM**

*Important for the subject: Science and Technology*

### **Introduction:**

Quantum physics is too weird for many people to understand, and part of the weirdness is due to some of its counter intuitive features. For example, many quantum phenomena are bound by **Heisenberg's uncertainty principle**, so it is **impossible to know them with great certainty**. According to this principle, we can't obtain the information about a particle's

position, say, until we actively check for it.

### What do we mean by Fractal Dimensions?

- **Fractals in Quantum Physics:** Fractals are shapes that have non-integer dimensions, used in quantum physics to describe complex systems.
- **Fractals in Nature:** Fractals are patterns that repeat at different scales. The Koch snowflake, for example, has a fractal dimension of about 1.26

### Visualizing Fractals in Different Scales

- **Fractals in Nature:** Fractal patterns are visible in natural phenomena like tree branches, clouds, and river networks.
- **Fractals in Quantum Materials:** In quantum materials, such as neodymium nickel oxide and graphene, fractal patterns can be observed in the arrangement of magnetic domains or electron density

### Applications of Fractals

- **Early Uses:** Fractals were initially used to understand random particle movements, like Brownian motion.
- **Diverse Applications:** Today, fractals are used in various fields, including technology, space research, and biology.
- **Studying Complex Systems:** Fractals help in understanding complex systems that exhibit patterns at different scales.

### Importance of Fractals

- **Beyond Geometry:** Fractals are important in understanding complex patterns in both quantum physics and natural phenomena.
- **Complexity from Simple Rules:** Fractals show how complex patterns can emerge from simple rules, offering insights into the quantum world and the natural environment

### Quantum Mechanics and Wave-function Collapse

- **Measuring Particles:** In quantum mechanics, when you measure a particle's property, such as its position, you affect its wave-function.
- **Wave function Defined:** The wave-function is a mathematical function that describes all possible states of a particle. When it collapses, it results in a single state.
- **Particles in Multiple States:** Before measurement, a particle can exist in multiple states or locations simultaneously.

## Topic 23. POMPE DISEASE

### *Important for the subject: Science and Technology*

India's first Pompe disease patient passes away

Pompe disease, also called **Glycogen Storage Disease Type II**, is a rare genetic disorder resulting from a deficiency of the enzyme acid alpha-glucosidase (GAA).

- This enzyme is essential for breaking down glycogen into glucose within the lysosomes of cells.
- The prevalence of Pompe disease varies, with estimates ranging from 1 in 40,000 to 1 in 300,000 births.
- It occurs in diverse ethnicities and populations, with varying ages of onset and severity, leading to a spectrum of clinical presentations.

### **How does Pompe disease affect an individual:**

- Pompe disease exhibits varying degrees of severity and symptom progression among individuals.
- Key symptoms include progressive muscle weakness affecting both skeletal and smooth muscles, leading to mobility challenges and difficulties in daily activities.
- Motor skill delays, particularly in achieving milestones like sitting, crawling, and walking, are common in affected children.
- Prolonged muscle weakness can result in bone degeneration, causing joint contractures and skeletal deformities.
- Respiratory complications, including weakened respiratory muscles and potential breathing difficulties, are prevalent, especially during physical exertion or while lying down.
- Cardiac involvement may occur, leading to symptoms like heart palpitations, fatigue, and chest pain, with the possibility of hypertrophic cardiomyopathy—thickening of heart muscle walls.
- The disease's impact on daily living is significant, as patients may face challenges in performing routine activities independently. Assistive devices such as wheelchairs and respiratory support equipment may become necessary for those affected by Pompe disease.

### **How is Pompe disease diagnosed:**

- The diagnosis of Pompe disease employs a comprehensive approach involving various

assessments:

- **Enzyme Assays:** These tests measure the **activity of acid alpha-glucosidase (GAA), the enzyme deficient** in Pompe disease. Enzyme assays are **often conducted on blood or skin cells to evaluate GAA activity levels.**
- **Genetic Testing:** Genetic analysis is performed to **identify specific mutations in the GAA gene associated** with Pompe disease. This **helps confirm the genetic basis** of the condition.
- **Clinical Evaluations:** Healthcare professionals consider the patient's symptoms and medical history as part of the diagnostic process. **Clinical assessments contribute valuable information** to the overall diagnosis.
- The **combination of enzyme assays, genetic testing, and clinical evaluations** allows for an **accurate and comprehensive diagnosis of Pompe disease.** This approach is crucial for timely intervention and effective disease management.

**Is Pompe disease curable:**

- Pompe disease **currently lacks a cure**, but there are **available treatment options aimed at managing symptoms** and enhancing the **patient's quality of life.**
- **Enzyme Replacement Therapy (ERT)** is a well-established **treatment approach**, involving the **infusion of the deficient enzyme to reduce glycogen accumulation and address** the underlying enzymatic deficiency.

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## **Topic 24. IN WORLD FIRST EUROPE REACHES DEAL ON AI**

*Important for the subject: Science and Technology*

Europe agrees landmark AI regulation deal

The **European Union (EU)** reached a **provisional deal** on ground breaking regulations for artificial intelligence (AI), addressing concerns such as the **use of AI in biometric surveillance and the regulation of AI systems like ChatGPT.**

- The agreement **requires foundation models and general-purpose AI systems** to comply with **transparency obligations, conduct evaluations,** and report on various aspects.
- Governments are **restricted in using real-time biometric surveillance, and the agreement bans practices like cognitive behavioral manipulation and untargeted scrapping of facial images.**
- The legislation, **once formally ratified,** is expected to **come into force in two years and could influence global AI governance standards.**

**Some details about the EU framework:**

- The European Union (EU) has reached a provisional deal on AI legislation, **incorporating safeguards** for consumer complaints, **restrictions on facial recognition technology**, and **penalties for rule violations**.
- The **legislation classifies AI applications** into risk categories, **with certain applications, such as mass-scale facial recognition**, being largely banned.
- High-risk applications, like **AI in self-driving cars**, will require **certification and transparency**. **Medium-risk applications, such as chatbots**, will have **documentation and transparency obligations**.
- The EU aims for this legal framework to **support trustworthy AI development** and **provide a launchpad for EU startups and researchers in the global AI race**.

#### What is the Legal Framework Related to AI in India:

- In India, there are **currently no specific legal regulations** governing the use of **deep fake technology**. However, **existing laws can be applied to address the misuse of this technology**, covering aspects such as **Copyright Violation, Defamation, and cybercrimes**.
- For instance, the **Indian Penal Code**, which addresses **defamation**, and the **Information Technology Act of 2000**, which pertains to **sexually explicit material**, could **potentially be used** to combat malicious deepfake usage.
- The **Representation of the People Act of 1951** contains **provisions that prohibit the creation or dissemination of false or deceptive information** about candidates or political parties during election periods.
- Additionally, the **Election Commission of India** has established **regulations requiring registered political parties and candidates to obtain prior approval for all political advertisements on electronic media**.
- Despite these measures, **they may still be inadequate in fully addressing the multifaceted challenges arising from AI algorithms, including the potential risks associated with deepfake content**

#### What are the Recent Global Efforts to Regulate AI:

- The world's **inaugural AI Safety Summit**, hosted at **Bletchley Park** in the UK, saw **28 major nations, including the US, China, Japan, the UK, France, India, and the European Union, unite in signing a declaration** emphasizing the necessity for **global action to address the potential perils of AI**.
- The declaration **underscores the recognition of significant risks** stemming from potential deliberate **misuse and unintended control challenges** in advanced AI, particularly in **domains such as cyber security, biotechnology, and the spread of**



**disinformation.**

- In response to these concerns, the **US President issued an executive order** aiming to **fortify defenses against AI-related threats and exercise regulatory oversight** over safety standards applied by companies in the assessment of **generative AI systems like ChatGPT and Google Bard.**
- During the **G20 Leaders' Summit held in New Delhi**, the **Indian Prime Minister advocated for the creation of a global framework governing the development of "ethical" AI tools.**
- This shift in **New Delhi's stance signifies a transition** from a position of **non-interference in AI regulation to a proactive approach, involving the formulation of regulations** grounded in a "risk-based, user-harm" perspective.

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### **Topic 25. HOW GOOGLE DEEPMIND'S AI BREAKTHROUGH COULD REVOLUTIONISE CHIP, BATTERY DEVELOPMENT**

*Important for the subject: Science and Technology*

Researchers at **Google DeepMind** have made a **significant breakthrough** by using **artificial intelligence (AI)** to predict the structures of **over 2 million new materials.**

This development, **facilitated by the AI tool named Graph Networks for Materials Exploration (GNoME)**, holds **immense potential** in various sectors, **including renewable energy, battery research, semiconductor design, and computing efficiency.**

While **earlier claims of breakthroughs** in materials like **LK-99** faced scrutiny, the **DeepMind AI tool** offers a **promising avenue** for the design and generation of potential recipes for new materials, marking a notable advancement in the field.

**Why is this significant**

- The **AI breakthrough by Google DeepMind** has significantly **increased the number of known 'stable materials'** by ten-fold, encompassing inorganic crystals **crucial for various modern tech** applications such as computer chips and batteries.
- This **development is particularly impactful** in fields like **the search for stable solid electrolytes to replace current Li-ion battery electrolytes** and the **exploration of new layered compounds akin to graphene** for potential advancements in electronics and superconductors.
- **DeepMind's AI-led discovery employs filters to scale up** the process, **narrowing down a list of synthesizable materials** that could meet specific requirements and potentially offering insights at the atomic bond level.
- Traditional **methods of discovering stable materials involve time-consuming trial and error processes, making AI predictions a more efficient** and groundbreaking approach.

### How does GNoME actually work

- Google DeepMind's project, Graph Networks for Materials Exploration (GNoME), utilizes a **state-of-the-art graph neural network model (GNN)** to predict the structures of over 2 million new materials.
- The model, trained using active learning, leverages a **graph representation resembling** atomic connections, **making it well-suited** for discovering new materials by **identifying patterns not present** in the original dataset.
- GNoME employs two pipelines—a structural one creating candidates akin to known crystals and a compositional one following a more randomized approach based on chemical formulas.
- The **precision rate for predicting materials** stability has been significantly boosted from 50% to around 80%, equivalent to nearly 800 years of knowledge based on publicly available stable predictions.
- GNoME was trained on crystal structure data from The Materials Project, contributing to the ongoing quest for innovative materials in various scientific domains.

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### Topic 26. INDIA'S ALARMING 'FIXED DOSE COMBINATION' PROBLEM

#### *Important for the subject: Science and Technology*

Antimicrobial resistance is at risk due to the study's shocking findings on the frequency of antibiotics' unapproved and illegal Fixed Dose Combinations (FDCs) in India.

Public health requires immediate action in response to the pharmaceutical industry's use of FDCs as a means of circumventing legislation and regulatory inefficiencies.

#### **Historical Aspect:**

- Tracing the issue back to 1978 and subsequent regulatory amendments provides context to the ongoing challenges.
- **Alarming Prevalence:** In 2020, 60.5% of antibiotics in India were unapproved FDCs, with an additional 9.9% banned, raising concerns about antimicrobial resistance.
- **Patient Compliance vs. Risks:** FDCs, aimed at improving patient adherence, pose risks due to potential interactions between combined drugs, necessitating a stringent approval process.
- **Pharmaceutical Industry's Strategy:** Exploitation of FDCs allows the industry to evade drug price regulations, contributing to the proliferation of irrational combinations.

#### **Key Terms:**

- **Fixed Dose Combination (FDC):** Combinations of multiple drugs in a single dosage form, potentially affecting drug interactions and therapeutic efficacy.
- **Antimicrobial Resistance (AMR):** The ability of microorganisms to resist the effects of medications, posing a global health threat.

#### Key Challenges:

- Continued sale of unapproved FDCs highlights regulatory inefficiency, allowing non-compliance despite existing legal provisions.
- Reliance on Section 26A orders reveals a reactive rather than proactive regulatory approach, indicating systemic challenges.

#### Key Issues:

- **Pharmaceutical Industry's Exploitation:** The strategic use of FDCs to avoid regulatory scrutiny undermines the integrity of drug pricing and quality.
- **Ineffectiveness of Regulatory Measures:** Despite legal provisions, the regulatory system relies on reactive prohibitions rather than proactive prevention.

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### Topic 27. U.S. FDA APPROVES PAIR OF GENE THERAPIES FOR SICKLE CELL DISEASE

#### *Important for the subject: Science and Technology*

The U.S. Food and Drug Administration (FDA) approved a pair of gene therapies for sickle cell disease, including the first treatment based on the breakthrough CRISPR gene editing technology.

- The agency approved **Lyfgenia** from bluebird bio, and a separate treatment called **Casgevy** by partners Vertex Pharmaceuticals and CRISPR Therapeutics for the illness.
- Both the therapies were approved for people **aged 12 years and older**.
- The Vertex/CRISPR gene therapy uses the breakthrough **gene editing technology** that won its inventors the **Nobel Prize in 2020**.
- Makers of both the therapies have pitched them as **one-time treatments**, but data on how long their effect lasts is limited. The **only longer-term treatment** for sickle cell disease is a **bone marrow transplant**.

#### Sickle cell disease:

- Sickle cell disease (SCD) is a group of **inherited red blood cell disorders**. Red blood cells contain **hemoglobin**, a protein that carries oxygen.

- **Healthy** red blood cells are **round**, and they move through small blood vessels to carry oxygen to all parts of the body.
- SCD, causes the red blood cells to become **hard and sticky** and look like a **C-shaped farm tool** called a “**sickle**.”
- The sickle cells **die early**, which causes a **constant shortage of red blood cells**. Also, when they travel through small blood vessels, they **get stuck and clog the blood flow**.
- This can cause **pain and other serious complications** (health problems) such as infection, acute chest syndrome and stroke.

### What is CRISPR?

- CRISPR is a powerful tool for **editing genomes**. It allows researchers to easily **alter DNA sequences** and **modify gene function**.
- It has many potential applications, including: correcting genetic defects, treating and preventing the spread of diseases, and improving the growth and resilience of crops. “CRISPR” is shorthand for “**CRISPR-Cas9**.”
- CRISPRs are specialized **stretches of DNA**, and the **protein Cas9** (where **Cas** stands for “**CRISPR-associated**”) is an **enzyme** that acts like a **pair of molecular scissors**, capable of cutting strands of DNA.
- CRISPR technology was **adapted from** the natural defense mechanisms of **bacteria** and **archaea**, a domain of relatively simple **single-celled microorganisms**. These organisms use **CRISPR-derived RNA** to **foil attacks by viruses**.
- When the components of CRISPR are transferred into more complex organisms those components can then **manipulate genes**, a process called “**gene editing**.” How CRISPR works as a genome-editing tool

### About Casgevy:

- Casgevy is a **gene therapy** that utilises the gene-editing tool **CRISPR**.
- The process works by taking the **patient’s bone marrow stem cells** and **editing them** to express the **fetal version** of haemoglobin before **transplanting** these edited stem cells **back into the patient**.
- **Fetal haemoglobin** is the version expressed in **utero, before birth**.
- In most people, expression of the **fetal version is turned down** and the **non-fetal version is turned on** when they are a baby, although there is still usually a very small amount of fetal haemoglobin expressed.
- Casgevy **edits this by turning up the expression** of the **fetal version**.
- The functional haemoglobin produced from this version of the gene **compensates for the**

**non-functional haemoglobin** that the non-fetal version of the gene is producing.

- The **edited stem cells** are the **patient's own cells**, just slightly edited, and as such there is **no risk of rejection**. The results have the **potential to be life-long**.

#### About Lyfgenia:

- Lyfgenia is a **cell-based gene therapy**.
- Lyfgenia uses a **lentiviral vector** (gene delivery vehicle) for **genetic modification** and is approved for the treatment of patients **12 years of age and older** with sickle cell disease and a history of **vaso-occlusive events**.
- With Lyfgenia, the patient's blood stem cells are **genetically modified to produce HbAT87Q**, a **gene-therapy derived hemoglobin** that functions similarly to hemoglobin A, which is the normal adult hemoglobin produced in persons not affected by sickle cell disease.
- Red blood cells containing HbAT87Q have a **lower risk of sickling** and occluding blood flow. These modified stem cells are then **delivered to the patient**.

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### Topic 28. GOOGLE GEMINI

#### *Important for the subject: Science and Technology*

Google has introduced Gemini, a new multimodal general AI model

#### What is Google Gemini:

- Gemini is a **family of highly capable multimodal models**, offering features such as **image recognition and real-time speech**, reported to be **five times more powerful than GPT-4**.
- Gemini is **now accessible to users worldwide** through platforms such as Bard, various developer platforms, and the newly released Google Pixel 8 Pro phones. The **AI model comes in three sizes: Ultra (yet to be launched), Pro, and Nano**.
- Gemini is **positioned as Google's response** to ChatGPT, which has been a **frontrunner in the field of generative artificial intelligence (GenAI)**

#### How Gemini has performed:

- Google shared a comparison sheet showcasing how **Gemini surpasses GPT-4, the most powerful model of ChatGPT**.
- **Gemini Ultra**, designed for **data centers**, achieved **state-of-the-art benchmarking** and is under safety review, expected to be **available in early 2024**.
- Gemini **excels in Massive Multitask Language Understanding (MMLU) with a 90%**

score, covering **57 Important** for the subjects across various domains.

- The model is **trained on massive datasets, including text, code, books, and multimedia, enabling real-time learning and constant improvement.**
- Gemini's capabilities in **analyzing vast data, recognizing patterns, and generating hypotheses** are seen as revolutionary for scientific research.
- Gemini Pro, **integrated into Google's chatbot Bard** and other apps, **outperforms GPT-3.5 in six out of eight benchmarks**, making it a **powerful free AI chatbot.**
- **Gemini Ultra, the most powerful in the family**, outperforms GPT-4 in 30 out of 32 academic benchmarks, showcasing superiority in reasoning and code generation.

**What is ChatGPT:**

- **OpenAI** is the **artificial intelligence** research company **responsible for developing ChatGPT**, an AI chatbot **employing natural language processing to generate humanlike conversational dialogue.**
- This language model can **answer questions and generate various types of written content**, encompassing articles, social media posts, essays, code, and emails.
- As a form of **generative AI**, **ChatGPT enables users to input prompts and receive AI-created images, text, or videos** that resemble human output.
- The term **"GPT" in ChatGPT stands for "Generative Pre-trained Transformer,"** reflecting the **model's process of handling requests and crafting responses.**
- **Reinforcement learning, incorporating human feedback** and reward models that rank responses, is used to **train ChatGPT**, enhancing its machine learning capabilities for improved future interactions.
- **Besides ChatGPT**, notable examples of AI algorithms, also recognized as **AI Chatbots**, include **Google's Bard and Microsoft's Bing Chat.**

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## **Topic 29. TARGETED CANCER DRUGS**

*Important for the subject: Science and Technology*

**What are targeted cancer drugs?**

These drugs work by **'targeting'** those differences that help a cancer cell to survive and grow. They are one of the **main treatments** for some cancers like **advanced melanoma** and some types of **leukaemia**.

**Different types of targeted drugs are-**

- **Monoclonal antibodies** (it is a type of immunotherapy that trigger the immune system to

attack and kill cancer cells), **Cancer growth blockers**, **Drugs that block cancer blood vessel growth** and **PARP inhibitors** (poly-ADP ribose polymerase is a protein (enzyme) found in our cells. It helps damaged cells to repair themselves).

- Targeted drugs are **not suitable** for **all types of cancers**.

**Targeted therapy depends on:**

- The type of cancer one have
- How far one's cancer has spread (the stage)
- Other cancer treatments one've had

**Testing:**

- It is done to find out whether the **treatment is likely to work**. These tests look for **changes in certain proteins or genes**.

**How do they work?**

- **Cancer cells** have **changes in their genes (DNA)** that make them **different** from **normal cells**.
- The changes that make a **lung cancer grow** can be **different** to ones that make a **breast cancer grow**. And the **changes in the genes of one person** who has **lung cancer** might be **different** to the **changes** in someone else with **lung cancer**.
- **Targeted cancer drugs** work by '**targeting**' those differences that a cancer cell has.

**Targeted drugs might:**

- stop cancer cells from dividing and growing
- seek out cancer cells and kill them
- encourage the immune system to attack cancer cells
- stop cancers from growing blood vessels
- help carry other treatments such as chemotherapy, directly to the cancer cells

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### **Topic 30. IMPROVED DRUG REGIMENS FOR TB LIKELY TO REDUCE TREATMENT TIME**

*Important for the subject: Science and Technology*

The **Union World Conference on Lung Health 2023** showcased optimism in the fight against tuberculosis (TB) with the **introduction of four new improved drug regimens**.

- The primary focus was on reducing the treatment time for drug-resistant tuberculosis,

which is crucial due to the long duration of conventional treatments leading to **patient intolerance and non-compliance**.

- The duration of TB treatment and the associated drug toxicity contribute to the development of **drug-resistant TB**, a serious concern in global TB control efforts.
- Previous advances in TB care have been limited, with the absence of a viable vaccine for prevention, making news of effective treatments particularly significant.

#### **New Drug Regimens:**

- Four improved drug regimens were presented at the conference, demonstrating the **potential to reduce treatment time for drug-resistant TB by up to two-thirds**.
- These regimens offer hope for more effective and tolerable treatments, addressing the challenge of patient non-compliance and drug resistance.

#### **Positive Outcomes:**

- **Three regimens achieved favorable outcomes in 85-90% of participants for the treatment of multidrug-resistant tuberculosis or rifampicin-resistant tuberculosis (MDR/RR-TB).**
- **A fourth regimen showed a strong treatment response at 85.6%**, providing an alternative for individuals unable to tolerate specific drugs.
- The regimens demonstrated similar efficacy and safety to conventional treatments but significantly reduced treatment time.

#### **Research Impact:**

- Over 750 participants from 11 sites, 7 countries, and 4 continents were involved in the study, funded by Unitaid, highlighting a collaborative global effort.
- Combining antibiotics in new ways through research led by organizations such as Médecins Sans Frontières, Partners in Health, and Interactive Research and Development showed promising results.

#### **Global Significance:**

- The findings represent a **significant step in addressing issues related to access to and affordability of quality TB care, offering hope to vulnerable populations globally**.
- The urgency of continued research and innovation, along with accountability of private companies receiving public funds, was emphasized.

#### **Multi-pronged Approach:**

- Experts emphasize a **multi-pronged approach to tackle TB, addressing not only treatment regimens but also improving case detection**.
- Advances in diagnostic tools, including AI-assisted tests and portable, battery-operated



tests, were discussed as essential for early detection and prevention.

**Future Directions:**

- Calls for a stronger commitment to **developing a TB vaccine** were made, highlighting the need for global efforts to eliminate the disease.
- **Phasing out old diagnostic tools like smear microscopy in favor of rapid molecular tests** was emphasized to narrow the diagnostic gap.

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**Topic 31. PROGRESS ON INDUSTRY STANDARDS FORUM PROPOSED BY SEBI**

*Important for the subject: Economy*

**Forum Composition:**

Comprising **apex industry chambers of CII, FICCI, and Assocham.**

**Chairman's Statement:**

Chairman KV Kamath announced significant progress in **establishing new standards.**

Emphasis on compliance with SEBI regulations.

**Deliberations and Consultations:**

- **Extensive deliberations ongoing with industry representatives in consultation with SEBI.**

**Upcoming Standards:****ESG Disclosures:**

- Precise compliance standards for **SEBI-mandated ESG disclosures under Business Responsibility & Sustainability Reporting (BRSR) Core framework.** Applicable assurance requirements.

**Rumour Verification:**

- Developing standards for compliance with the **recently introduced requirement of verification of rumors by listed entities.**

**SEBI Regulations:**

- Focus on recently amended provisions of **SEBI Listing Obligations and Disclosure Requirement (LODR) Regulations.**

**Future Agenda:**

- Post finalization of the first set of standards, the **Forum plans to address disclosure requirements under Regulations 30 and 30A of the LODR Regulations.**

### About Industry Standards Forum:

#### Objective:

- **SEBI (Securities and Exchange Board of India) aims to facilitate capital formation and improve the ease of doing business.**

#### Formation of Industry Standards Forum:

- SEBI proposes the establishment of an **Industry Standards Forum**. The forum will be formed by **Industry Associations** and chaired by a leader from the industry. It will **operate under the auspices of the stock exchanges**.

#### Pilot Initiatives:

- The industry associations express interest in undertaking more than one pilot initiative.

#### Priority Areas for Initial Focus:

- The following areas have been identified as priority areas for the initial phase:
- **Rumour Verification Requirements**
- **Disclosure Requirements under Regulations 30 and 30A of LODR Regulations**
- **BRSR Core/ESG Assurance Requirements**
- **Structured Digital Database Requirements under PIT Regulations**

#### Timeline:

- Industry associations propose a timeline of **three to four months** for designing standards to effectively implement regulations.

#### Forum's Role:

- The **Industry Standards Forum** will be responsible for formulating standards to **implement specific regulations and circulars**.

#### Detailed Standards:

- Standards will be **designed at a detailed level to demonstrate compliance with the specified regulations and circulars**.

#### Regulatory Compliance Focus:

- The initiative **aligns with SEBI's commitment to promoting regulatory compliance and streamlining business operations in the financial markets**.

#### Capital Market Efficiency:

- The overall objective is to **enhance capital market efficiency and foster a conducive environment for businesses in India**.

## SEBI Listing Obligations and Disclosure Requirement (LODR) Regulations

- SEBI Listing Obligations and Disclosure Requirement (LODR) Regulations are **guidelines and obligations imposed by the Securities and Exchange Board of India (SEBI) on listed companies.**
- The regulations aim to **ensure transparency, provide material information to investors, and maintain the integrity and efficiency of the securities market.** Applicable to all companies **whose securities are listed on recognized stock exchanges.**
- Mandates **specific disclosure requirements related to financial performance, shareholding patterns, corporate governance, and other material events.**
- **Regulation 30 and 30A: Regulation 30:** Deals with disclosure of events or information that may have a bearing on the company's performance or share prices. **Regulation 30A:** Pertains to disclosures of material events by listed entities.
- **Rumour Verification Requirements:** SEBI has **proposed the formation of an Industry Standards Forum to address Rumour Verification requirements under these regulations.**
- **BRSR Core/ESG Assurance Requirements:** BRSR (Business Responsibility and Sustainability Reporting) Core and ESG (Environmental, Social, and Governance) Assurance Requirements are part of the disclosure framework.
- **Structured Digital Database Requirements under PIT Regulations:** Deals with requirements **related to a Structured Digital Database under the Prevention of Insider Trading (PIT) Regulations.**

## Securities and Exchange Board of India (SEBI):

- SEBI is a statutory body established in 1992 under the Securities and Exchange Board of India Act, 1992.
- **SEBI's primary functions include protecting the interests of investors in securities and promoting and regulating the securities market. The headquarters of SEBI is located in Mumbai.**
- Before SEBI, the **regulatory authority was the Controller of Capital Issues, operating under the Capital Issues (Control) Act, 1947.**
- **In 1988, SEBI was formed as the regulatory body for capital markets in India through a government resolution.**

- Initially, SEBI was a non-statutory body without statutory powers. **It later gained autonomy and statutory powers with the enactment of the SEBI Act in 1992.**
- **The SEBI Board includes a Chairman and several other whole-time and part-time members. SEBI can appoint committees as needed to address specific issues.**

### **Topic 32. SHIFT FROM WPI TO PPI**

*Important for the subject :Economy*

India plans to **transition from Wholesale Price Index (WPI) to Producer Price Index (PPI)** in the future.

Most G20 countries, **including China, already use PPI, making it a more globally accepted practice.**

#### **Current Status:**

- The **National Statistical Commission (NSC) is examining a working group report on the roadmap for introducing PPI.** Recommendations from the NSC are awaited before further decisions are made.

#### **Future Plan:**

- **Initially, both WPI and PPI may coexist.** After a few years, there is a possibility of phasing out WPI, aligning with global practices.

#### **Background:**

#### **Past Discussions:**

- A working group was established to determine the methodology and data requirements for the transition. In 2019, a **working group was formed to revise the current WPI series, suggesting a new base year and considering the shift to PPI.** **Base Year Revision:**
- Work is also underway to **revise the WPI base year from 2011-12 to 2017-18.** This revision aims to present a more realistic picture of the country's price situation. The DPIIT issued a draft technical report suggesting changes in the base year and additions to the commodity basket.

### Wholesale Price Index (WPI):

- **WPI measures the average change in the selling prices received by producers for their goods and services at the wholesale level.**

### Commodity Basket:

- It includes a **representative basket of goods covering various sectors** like industry, agriculture, and mining.
- WPI is calculated **based on the wholesale prices of a set of commodities at a specific point in time.**
- Primarily used by policymakers and **analysts to assess inflation at the wholesale level.** Helps in **analyzing price movements at the early stages** of the supply chain.
- In India, **WPI has been historically used as a key indicator of inflation. However, there is a plan to transition to the Producer Price Index (PPI).**

### Consumer Price Index (CPI):

- CPI measures the **average change in the prices paid by consumers for goods and services they commonly purchase over time.**
- It includes a **representative basket of goods and services commonly consumed by households.**
- CPI is calculated based on the prices of goods and services at the retail level, **reflecting the expenses incurred by consumers.**
- Widely used to assess inflation from the perspective of the average consumer. Central for adjusting wages, pensions, and other income-related aspects.
- **Multiple CPIs are calculated in India, such as CPI for Industrial Workers (CPI-IW) and CPI for Agricultural Laborers (CPI-AL).**

### Producer Price Index (PPI):

- PPI measures the **average change in the selling prices received by producers for their goods and services.**
- It includes a representative basket of goods and services produced by industries. **PPI is calculated based on the prices of goods and services at various stages of production.**
- Primarily used to analyze inflation from the perspective of producers. **Reflects price movements at different stages of the production process.**
- **India is considering transitioning from WPI to PPI to align with global practices and improve the accuracy of inflation measurement.**

**Key Differences:****Focus:**

- WPI focuses on the **wholesale level**, assessing price changes at the early stages of production.
- CPI focuses on the **retail level**, reflecting the expenses incurred by consumers. **PPI assesses price changes at different stages of the production process.**

**Basket Composition:**

- **WPI and PPI include a basket of goods and services related to production.**
- CPI includes a basket of goods and services commonly consumed by households.

**Calculation Basis:**

- WPI and PPI are calculated based on wholesale prices.
- **CPI is calculated based on retail prices.**

**Usage Perspective:**

- WPI and PPI provide insights from the **producer's perspective.**
- CPI provides insights from the **consumer's perspective.**

**Policy Implications:**

- CPI is crucial for adjusting income-related aspects, while WPI and PPI are vital for policy formulation related to production and industry.

**About National Statistical Commission (NSC) –**

- The National Statistical Commission (NSC) is a statutory body in India that **operates as an autonomous advisory body dedicated to enhancing the statistical infrastructure and promoting the use of reliable and timely statistical data for informed decision-making.**
- **Establishment:** The Government of India through a resolution dated 1st June, 2005 set up the National Statistical Commission (NSC). The setting up of the NSC followed the decision of the Cabinet to accept the recommendations of the Rangarajan Commission, which reviewed the Indian Statistical System in 2001.
- **The NSC was constituted with effect from 12th July 2006 with a mandate to evolve policies, priorities and standards in statistical matters. The NSC has four Members besides a Chairperson, each having specialization and experience in specified statistical fields.**
- **Objective:** The primary objective of the NSC is to **evolve policies, priorities, and standards in statistical matters, ensuring statistical coordination among various**

agencies involved in statistical activities, and improving the statistical system in the country.

- **Composition:** The NSC is headed by a part-time Chairperson, and it includes a maximum of seven members. The **Chief Statistician of India (CSI) and Secretary of the Ministry of Statistics and Programme Implementation (MoSPI) serve as ex-officio members.**

#### **Functions:**

- **Advisory Role:** The NSC acts as the **apex advisory body for all statistical matters**, providing guidance on statistical methodology, data collection, and dissemination.
- **Coordination:** It **promotes coordination among various statistical agencies** to avoid duplication of efforts and ensure the efficient use of resources.
- **Policy Formulation:** The commission is **involved in formulating policies related to statistical activities** and recommends improvements in the statistical system.
- **Review and Evaluation:** The NSC reviews the **functioning of the statistical system, evaluates data quality, and suggests measures for improvement.**
- **Reports and Recommendations:** The NSC submits its reports and recommendations to the government, and these play a crucial role in **shaping the statistical policies and practices in the country.**
- **Independence:** The NSC **operates independently in its advisory role**, providing an unbiased and expert perspective on statistical matters.
- **Statistical Workshops and Seminars:** The NSC conducts workshops, seminars, and conferences to **promote awareness and understanding of statistical concepts and methodologies.**
- **Statistical Agencies:** While the NSC itself does not collect or compile statistical data, it **oversees and coordinates the activities of various statistical agencies, including the Central Statistical Office (CSO) and the National Sample Survey Office (NSSO).**

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### **Topic 33. ANARCHO-CAPITALISM AND LIBERTARIAN LIBERALISM**

#### *Important for the subject: Economy*

Political ideologies such as anarcho-capitalism and libertarian liberalism, which **advocate for limited government involvement in economic and social matters.**

#### **Political Ideologies:**

- **Libertarianism and Anarcho-Capitalism:** Emphasize limited government involvement in economic and social affairs. **Libertarianism upholds individual liberty and limited government, while anarcho-capitalism advocates for a society without government**

intervention.

#### Advantages Advocated by Proponents:

- **Personal Liberty, Innovation, Economic Efficiency:** Advocates argue that these ideologies provide advantages such as **personal liberty, fostering innovation, and promoting economic efficiency.**

#### Conceptual Differences:

- **Libertarianism vs. Conventional Liberalism:** Barry differentiates libertarianism from conventional liberalism, **highlighting the adherence to moral and economic individualism that distinguishes libertarianism.**

#### Inclusive Development and Economic Growth:

- **Structural Basis for Innovation:** Proponents assert that these ideologies establish a structural basis for **innovation and private enterprise, particularly in economic development and urban planning.**
- **Inclusive Development:** Anarcho-capitalism fosters **inclusive development by providing greater access to resources like water and sanitation.**

#### Critiques and Concerns:

- **Conceptual Flaws:** Critics like Barry and Steinberg et al. argue that these ideologies suffer from conceptual flaws and **may reinforce existing social and economic structures without addressing underlying problems.**

#### Recent Scholarly Contributions:

- **Brennan's Work:** Brennan's work on libertarianism, including anarcho-capitalism, generates considerable discussion in economics, philosophy, and political science.

#### Social Capital and Economic Growth:

- **Social Capital Defined:** The concept of social capital, explored by Adler and Kwon, refers to the **value derived from social networks and their tendencies to favor one another.**
- **Human Capital and Economic Growth:** Sani et al. argue that **human capital significantly impacts technological advancements and economic growth.**

#### Ethics and Morality:

- **Libertarian Morality:** Lyer et al. discuss the psychological dispositions of self-identified libertarians, **emphasizing their ethical underpinnings related to injury and justice.**

#### Origins and Historical Context:

- **Roots in Classical Liberalism:** The libertarian tradition traces its roots to classical liberals who **emphasized the human desire for liberty, as discussed in Wilkin's work.**



### Complex Interconnections:

- **Interplay of Concepts:** The text suggests that the interaction of concepts such as **anarcho-capitalism, libertarian liberalism, social and human capital, economic expansion, and moral foundations** creates a complex fabric with potential societal ramifications.
- **Impact of political ideologies such as anarcho-capitalism and libertarian liberalism on Indian Economy**

### Limited Government Intervention:

- **Potential Positive Impact:** Anarcho-capitalism and libertarian liberalism emphasize limited government involvement. In theory, **this could lead to reduced bureaucracy, lower regulatory burdens, and increased economic freedom, potentially fostering entrepreneurship and innovation.**

### Individual Liberty:

- **Positive Implications:** Emphasizing individual liberty could lead to a more open and free society, which might encourage individual initiatives and a dynamic business environment.

### Economic Efficiency:

- **Positive Outlook:** Both ideologies advocate for economic efficiency. **A more efficient allocation of resources and reduction in wasteful government spending could contribute to economic growth.**

### Innovation and Private Enterprise:

- **Positive Influence:** Proponents argue that **these ideologies provide a structural basis for innovation and private enterprise. This could result in a more competitive business environment and technological advancements.**

### Inclusive Development:

- **Potential Challenges:** While anarcho-capitalism is seen by some as fostering inclusive development, **critics argue that it might not address underlying social and economic issues.**
- **In India, with its diverse socio-economic landscape, achieving true inclusivity may require targeted interventions.**

### Critiques and Concerns:

- **Social Disparities:** Critics argue that these ideologies may inadvertently strengthen existing social and economic structures. **In a country like India with significant socio-**

economic disparities, the impact on marginalized communities could be a concern.

#### **Cultural and Social Context:**

- **Adaptation Challenges:** The implementation of these ideologies might face challenges due to India's diverse cultural, social, and economic contexts. Cultural factors, historical legacies, and the existing welfare structures might influence the acceptance and effectiveness of such ideologies.

#### **Government Services and Welfare:**

- **Potential Impact:** Anarcho-capitalism, which advocates for minimal state intervention, might have implications for government services and welfare programs. It could impact sectors such as healthcare, education, and social safety nets.

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### **Topic 34. 'LOGISTICS COSTS DROP TO 7.8%8.9% OF GDP'**

#### *Important for the subject: Economy*

India's logistic costs ranged between 7.8% and 8.9% during 2021-22, down from 8.7-9.9% during 2011-12, according to a report by economic think tank National Council of Applied Economic Research (NCAER) and the Department for Promotion of Industry and Internal Trade (DPIIT).

#### **What Aspects Led to India's Improved Logistics Performance?**

##### **Policy Interventions:**

- **PM Gati Shakti Initiative:** In October 2021, government announced the PM Gati Shakti initiative, a National Master Plan for multimodal connectivity. This initiative aims to reduce logistics costs and boost the economy by 2024-25.
- **National Logistics Policy (NLP):** The PM launched the National Logistics Policy (NLP) in 2022 to ensure quick last-mile delivery, end transport-related challenges, save time and money for the manufacturing sector and ensure desired speed in the logistics sector.
- These policy interventions are fructifying, which can be seen in India's jump in **Logistic Performance Index (LPI)** and its other parameters.

##### **Infrastructure Improvements:**

- According to the LPI report, India's rank moved up five places in the infrastructure score from 52nd in 2018 to 47th in 2023.
- The government has invested in trade-related soft and **hard infrastructure**, connecting port gateways on both coasts to the major economic centers located in the interior regions of the country.
- This investment has paid off, with India climbing to the 22nd spot for **international**

shipments in 2023 from 44th in 2018.

### Technology's Role:

- Technology has been a **critical component** of India's logistics performance improvement efforts.
- Under a public-private partnership, the government has implemented a **supply chain visibility platform**, which has contributed to remarkable reductions in delays.
- **NICDC Logistics Data Services Limited applies radio frequency identification tags** to containers and offers consignees end-to-end tracking of their supply chain.
- The report also states that emerging economies like **India are leap frogging advanced countries due to modernization and digitalization.**

### Reduced Dwell Time:

- Dwell time is how long a vessel spends at a specific port or terminal. It may also refer to the amount of time that a container or cargo spends at a port or terminal before being loaded onto a vessel or after being unloaded from a vessel.
- **India's very low dwell time (2.6 days) is one example of how the country has improved its logistics performance.**
- According to the report, the **average dwell time for containers between May and October 2022 was 3 days for India and Singapore, much better than in some of the industrialized countries.**
- The **dwell time for the U.S. was 7 days** and for Germany, it was 10 days. With the introduction of **cargo tracking**, dwell time in the eastern port of Visakhapatnam fell from 32.4 days in 2015 to 5.3 days in 2019.

### What are the other Initiatives Related to Logistics?

- **Multimodal Transportation of Goods Act, 1993:** The Multimodal Transportation of Goods Act, 1993 (MMTG) provides for the regulation of **Multimodal Transportation of Goods from any place in India to any place outside India involving two or more modes of Transport on the basis of a single Multimodal Transport Contract.**
- **Multi Modal Logistics Parks:** The Multi Modal Logistic Park project is poised to **develop state-of-the-art large scale warehousing facilities** for different types of commodities, to become a **one stop solution for all services** related to cargo movement like **warehousing, custom clearance, parking, maintenance of trucks etc.**
- **LEADS Report:** The LEADS is an indigenous data-driven index **under the Ministry of Commerce and Industry** to assess logistics infrastructure, services, and human resources across all 36 States and UTs.
- **Dedicated Freight Corridor:** It is a **high speed and high capacity railway corridor**

that is exclusively meant for the transportation of freight, or in other words, goods and commodities. DFC consists of two arms, **Eastern Dedicated Freight Corridor (EDFC) and Western Dedicated Freight Corridor (WDFC)**.

- **Sagarmala Projects:** The Sagarmala Programme was approved by the Union Cabinet in 2015 which aims at holistic port infrastructure development along the 7,516-km long coastline through modernisation, mechanization and computerisation.
- **Bharatmala Project:** It focuses on the new initiatives like development of Border and International connectivity roads, Coastal & port connectivity roads, improving efficiency of National Corridors, Economic corridors and others.

### Topic 35. SOCIAL STOCK EXCHANGE (SSE)

*Important for the subject: Economy*

Unnati, specifically the SGBS Unnati Foundation (SUF), is mentioned as the first entity to list on the SSE.

#### **Listing on NSE Social Stock Exchange (SSE):**

Unnati became the first entity to be listed on the NSE Social Stock Exchange.

#### **Nature of the Entity:**

- SGBS Unnati Foundation (SUF) is **described as a not-for-profit organization (NPO) incorporated in 2011.**

#### **Training and Fundraising:**

- SUF has a **focus on training youth and had trained over 45,000 youth.** The entity raised ₹1.8 crore from various sources, including Zerodha, Nabard, etc.

#### **Zero Coupon Zero Principal (ZCZP) Instruments:**

- Upon listing, **Zero Coupon Zero Principal (ZCZP) instruments with a face value of ₹1 each were credited into the demat accounts of the respective donors.**
- These **instruments are not traded but are held in the donors' accounts, and their value becomes zero at the end of one year when SUF's project is completed.**

#### **Purpose of Fundraise:**

- The funds raised were intended to train 10,000 youth across states and assist them in finding jobs.

#### **Transparency and Monitoring:**

- Listing on the stock exchange allows for checks and balances, **including disclosing the**

purpose for raising funds and providing a timeline for their utilization. Annual impact reports audited by social audit firms contribute to transparency.

#### **Credibility for Investors:**

- Listing enhances credibility and comfort for investors as they can monitor how the funds are utilized.

#### **SEBI Board Approval:**

- The SEBI board recently approved changes, **including halving the minimum issue size of ZCZPs by NPOs on SSEs to Rs 50 lakh and reducing the minimum application size to ₹10,000 to enable wider participation.**

#### **Future Listings:**

- There are 38 more NPOs registered with the NSE SSE, suggesting the potential for more listings in the coming months.

#### **Impact Investing and Social Change:**

- SSEs are described as representing a unique approach to **impact investing, creating a bridge between donors and NPOs dedicated to driving social change.** SSEs offer advantages such as transparency, trust, efficiency, and cost savings.
- It's important to note that the **impact of this development on the Indian economy depends on the scale and success of SSEs in promoting impact investing and supporting social enterprises and voluntary organizations.**
- The inclusion of more NPOs and changes in regulatory requirements, as approved by the SEBI board, could influence the landscape of impact investing in India.
- **About SGBS Unnati Foundation:** SGBS Unnati Foundation is a not-for-profit organization formed in November 2011. It **focuses on providing vocational training for underprivileged and unemployed youth, particularly in the age group of 18 to 25 years.**
- The funds raised through the ZCZP bonds issued by SGBS Unnati Foundation are **aimed at training up to 10,000 graduating youth from government colleges in various states to help them secure employment.**
- The training program includes **165 hours of training for each youth, comprising 90 hours of classroom learning over 30 days and 75 hours of self-learning content on a mobile application.** The cost per head for training is ₹2,000 per youth.

#### **About Social Stock Exchanges (SSEs) –**

- SSEs are trading platforms **designed to facilitate capital raising for social businesses and non-profits by connecting them with ethical investors interested in organizations with both corporate and social missions.**
- The establishment of SSEs aims to provide a unified and coherent framework for **funding, utilization, impact measurement, disclosure, and reporting in the social development sector.**

#### **Purpose of SSEs:**

- SSEs serve as platforms for social enterprises and **voluntary organizations to raise capital through various financial instruments, including debt, equity, mutual funds, and specific instruments like Zero Coupon Zero Principal (ZCZP) bonds.**

#### **Coherence in Funding:**

- SSEs seek to bring coherence to the **diverse funding sources for the social development sector, including corporate social responsibility (CSR), philanthropy, government funding, and retail charity.**

#### **Uniform Frameworks:**

- SSEs aim to establish uniform frameworks for funding, impact creation, measurement, disclosures, and reporting across different social organizations.

#### **Initiative by the Indian Government:**

- The Indian government announced plans to **set up an SSE in 2019 to enhance the ability of social enterprises to raise capital.**

#### **Key Building Blocks:**

- The SSE consists of three key building blocks: **the demand-side ecosystem (social organizations), the supply-side ecosystem (investors), and the infrastructure (the SSE and its intermediaries).**

#### **Government's Role:**

- The government plays a crucial role as the market maker and influencer in the SSE ecosystem.

#### **Regulation by SEBI:**

- The **Securities and Exchange Board of India (SEBI) serves as the SSE regulator, overseeing the functioning of SSEs and providing guidance.**

#### **Approved Financial Instruments:**

- SSEs offer various financial instruments approved by SEBI, **including mutual funds,**

social impact funds (with grant-in/grant-out models), and ZCZP bonds.

### ZCZP Bonds

- A Zero Coupon Zero Principal (ZCZP) bond is a **financial instrument that does not provide any periodic interest payments, and the principal amount is not repaid at maturity.**
- These bonds are issued with a face value, and they mature when a specified project is completed or after a predetermined period, typically 12 months from the date of allotment.
- They are issued to non-profit organizations (NPOs) for social development projects, promising a social return on investment rather than financial returns.

### Interest Structure:

- **ZCZP bonds do not provide any interest income to investors.** Instead, they are structured as zero-coupon bonds, meaning that investors do not receive periodic interest payments.

### Maturity Conditions:

- The bonds mature when the project for which they are raised is completed or after a fixed period, such as 12 months from the date of allotment.

### Listing on Social Stock Exchanges:

- ZCZP bonds issued by non-profit organizations are listed on social stock exchanges (SSEs). **While they are not available for trading in the secondary market, they can be transferred to legal heirs since they are issued in dematerialized form.**

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## Topic 36. MORATORIUM ON E-COMMERCE CUSTOMS DUTIES

### *Important for the subject: Economy*

The WTO is addressing the **extension of the moratorium on e-commerce customs duties.** The **moratorium prevents countries from imposing customs duties on electronic transmissions.**

- Introduced in 1998, it faces **potential expiration at the Ministerial Conference in February 2024.**

### Divergent Views:

#### US Position:

- Supports extending the moratorium. **Emphasizes the importance of advancing the**

### WTO work program on e-commerce.

- **Aims to maintain the moratorium to allow robust exploration within the work program.**

### Developing Nations' Position:

- Led by India, Indonesia, Sri Lanka, and South Africa. **Favors ending the moratorium. Believes it is crucial to preserve policy space for digital advancement, import regulation, and revenue generation through customs duties.**

### Previous Extension:

- **Extended previously at WTO MC 12 with arguments favoring post-COVID recovery.** Several members, including the US, the UK, and the EU, supported the extension.

### Economic Impact:

- A UNCTAD study reveals a \$55 billion loss in customs revenue in 2020 due to the moratorium.

### Developing Nations' Concerns:

- Argue that the **moratorium disproportionately favors developed nations.** Digital trade is dominated by industries in wealthier countries.

### WTO Director-General's Perspective:

- Ngozi Okonjo-Iweala emphasizes the need for clarity on the moratorium.
- **Members consider reaching an agreement on this matter vital in the lead-up to MC13.**

### Future Outlook:

- Ongoing discussions highlight the evolving dynamics and relevance of digital economy and trade issues on the global stage.

### E-transmission Moratorium:

- **Implemented since 1998, members agreed not to impose customs duties on electronic transmissions.**
- Periodically extended at successive Ministerial Conferences (MC). **Covers digitizable products like photographic films, cinematographic films, printed matter, music, media, software, and video games.**
- Emerged from the **Declaration on Global Electronic Commerce at the Second Ministerial Conference in 1998.**
- Work program established to examine global e-commerce-related issues



comprehensively.

### India's Stance:

#### Opposition to Extension:

- India opposes the continuation of the moratorium, **stressing its adverse impact on developing nations.**
- **Seeks an end to the moratorium to preserve policy space for digital advancement, import regulation, and revenue generation.**

#### Work Program Intensification:

- Calls for an intensified work program on the e-commerce sector at the WTO. **Advocates discussions in various councils like Trade in Goods, Trade in Services, TRIPS, and Trade and Development.**

#### Challenges and Concerns:

##### Tariff Revenue Loss:

- India experiences a surge in imports of electronic transmissions. **Potential tariff revenue loss estimated at USD 10 billion annually for developing countries.**

##### Impact on Industrialization:

- **Lapse of the moratorium affects industrialization and the use of digital technologies like 3D printing.**
- Limits governments' ability to generate additional tariff revenues.

#### Way Forward:

##### Preserving Flexibility:

- **Developing countries need flexibility to implement policies for digital catch-up.** Emphasizes improving domestic physical and digital infrastructure.

##### Regulating Luxury Imports:

- Urges regulating luxury imports of movies, music, and video games.
- **Removal of the moratorium provides policy space for governments in this regard.**

##### World Trade Organisation (WTO):

- **Intergovernmental organization regulating and facilitating international trade. Used by governments to establish, revise, and enforce rules governing global trade. Officially started operations on January 1, 1995.**
- **Established under the 1994 Marrakesh Agreement, replacing the General Agreement on Tariffs and Trade (GATT) from 1948.**

**World's largest international economic organization.**

- **164-member states, representing over 98% of global trade and GDP.**
- Located in Geneva, Switzerland.

**Ministerial Conference:**

- **Top decision-making body.**
- Composed of all member states.
- Typically **convenes biennially**, with an emphasis on consensus in decision-making.

**General Council:**

- **Handles day-to-day functions.**
- Includes representatives from all member states.

**India's Participation:**

- India is a founding member since January 1, 1995.
- Also, a member of GATT since July 8, 1948.

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### **Topic 37. CAUTION BY RBI ON LOAN WAIVER ADVERTISEMENTS**

*Important for the subject: Economy*

The Reserve Bank of India (RBI) issues a caution to the public.

**Misleading Advertisements:**

RBI notices **misleading ads on loan waiver offers in print and on social media.**

Entities actively promoting such campaigns.

**Service Fee Scam:**

- Reports of entities charging service or legal fees for issuing 'debt waiver certificates' without authority.

**Undermining Banks' Efforts:**

- **Individuals running campaigns undermining banks' efforts** to enforce rights over securities.

**False Representation:**

- Entities misrepresenting that dues to financial institutions need not be repaid.

**Consequences:**

- Such activities **undermine financial institutions' stability and depositors' interests.**
- **Associating with such entities can result in direct financial losses.**

### **Other Laws/Agencies to Curb Unfair Advertisements in India:**

#### **Advertising Standards Council of India (ASCI):**

- Self-regulatory voluntary organization founded in 1985.
- Objective: Maintain and enhance public confidence in advertising.

#### **Mandate:**

1. Advertising material must be truthful, legal, and honest.
2. Must be decent, not objectify women.
3. Should be safe for consumers, especially children.
4. Should be fair to competitors.

#### **Composition of ASCI:**

#### **Board of Governors:**

- 12 members representing key sectors (Advertisers, advertising agencies, media, allied professions).

#### **Consumer Complaints Council (CCC):**

- Currently has about 21 members. 9 from the industry, 12 from civil society (doctors, lawyers, journalists, consumer activists, etc.).
- CCC's decision on complaints is final.

#### **Secretariat:**

- Independent Secretariat with 5 members.
- Headed by the Secretary General.

#### **Complaint Process:**

- If an ad in India seems objectionable, a person can complain to ASCI.
- CCC deliberates on the complaint after due process for the advertiser to defend. Decision based on ASCI code and the law of the land.
- If upheld, the ad is voluntarily withdrawn or modified. Government amendment in 2007: **Ads violating ASCI code not permitted on TV under Cable TV Network Rules' Advertising Code.**

## Central Consumer Protection Authority (CCPA):

### Establishment:

- **Regulatory body founded in 2020 under the Consumer Protection Act, 2019.**
- **Works under the Ministry of Consumer Affairs.**

### Objectives:

- Promote, protect, and enforce consumer rights. Conduct investigations into consumer rights violations.
- **Order recalls of unsafe goods, stop unfair trade practices, and prevent misleading advertisements.**

### Impose penalties on those responsible for misleading ads.

- **Central Consumer Protection Authority Guidelines:** Guidelines issued by CCPA in 2022 to prevent false or misleading advertisements.

### Guidelines Overview:

- **Non-Misleading Advertisements:** Advertisements must contain true and honest representations without exaggeration. Even unintentional lapses are acceptable if promptly communicated to consumers.
- **Surrogate Advertisements:** Prohibits surrogate or indirect ads for goods or services restricted by law.
- **Advertisements Targeting Children:** Prohibits ads that condone, encourage, or exploit behavior dangerous for children. Aims to prevent influencing children's buying behavior negatively.
- **Disclaimers in Advertisements:** Introduction of disclaimers to clarify claims, make qualifications, or resolve ambiguities. **Advertisers must not hide material information likely to make the ad deceptive.**
- **Duties Imposed:** Manufacturers, service providers, and advertising agencies: **Should not make claims or comparisons related to objectively ascertainable facts and advertisements must gain consumer trust and avoid exploiting their lack of experience or knowledge.**
- **Cable Television Networks (Regulation) Act:** Regulates content on cable TV, prohibiting misleading, indecent, or offensive ads.
- **Consumer Protection Act:** Provides legal recourse for **consumers affected by unfair**

advertising practices. And Allows consumers to file complaints against companies and seek compensation. **Drugs and Magic Remedies (Objectionable Advertisements) Act:** Prohibits advertising drugs or remedies claiming miraculous or supernatural properties.

- **Food Safety and Standards Act:** Regulates advertising of food products, prohibiting false claims about nutritional value. **Press Council Act:** Regulates ad content in newspapers, prohibiting false, misleading, or offensive advertisements.

## Facts for Prelims

### What are Dark Patterns?

- **Deceptive design techniques in user interfaces to manipulate or deceive users online. Unethical designs exploiting cognitive biases and behaviors for the benefit of the platform or business. Types include urgency, basket sneaking, confirm shaming, forced action, nagging, subscription traps, etc.**
- **How Companies Use Dark Patterns:** Social media and Big Tech firms like Apple, Amazon, Google use dark patterns for their advantage. **Examples include Amazon's confusing cancellation process, YouTube's pop-ups for YouTube Premium, and LinkedIn's unsolicited messages.**

### Basket Sneaking –

- **Sneaking products into users' shopping baskets to trick them into purchasing more than intended.** Il-legalized by the European Commission under the consumer rights directive.

### Confirm Shaming –

- **A manipulative tactic in UI design or online interactions using guilt or social pressure. Occurs when users are presented with a choice, and emotionally manipulative language induces guilt or embarrassment for declining or opting out.**

### Surrogate Advertising:

- **Marketing technique indirectly promoting products or services restricted from direct advertising and common in industries like alcohol, tobacco, and gambling with strict advertising regulations. Example:** Alcohol brand advertises mineral water with the same logo to create brand awareness without mentioning the alcohol product.

### **Topic 38. IN LAST 9 YEARS, PSBS HAVE NOT RECOVERED EVEN ₹1 VS ₹5 WRITTEN OFF: FINMIN IN LS**

*Important for the subject: Economy*

Against an aggregate loan write-off of Rs 10.42 lakh crore, PSBs have recovered just Rs 1.61 lakh crore from written-off loans, since financial year 2014-15. PSBs could not recover even Re 1 as against Rs 5 written-off during nine fiscal years starting 2014-15.

- The recovered amount is 15.45 per cent of the total written-off amount during the said period.
- Though the government maintains that a write-off does not mean loan waiver, banking industry sources say considering the hair cut ratio after a compromise or long-drawn legal battle, actual recovery from written-off accounts is low and the latest data proves that.
- According to RBI guidelines and the policy approved by bank boards, NPAs, including those in respect of which full provisioning has been made on completion of four years, are removed from the balance-sheet of the bank concerned by way of a write-off. Such write-offs do not result in waiver of liabilities of borrowers to repay.
- Further, the process of recovery of dues from the borrower in written-off loan accounts continues, write-off does not benefit the borrower.
- Recovery from written-off accounts are initiated through various mechanisms, including filing of **civil suits** or in the **Debts Recovery Tribunals**, **action under the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002**, filing of cases in the **National Company Law Tribunal under the Insolvency and Bankruptcy Code, 2016**, through negotiated settlement/ compromise, and sale of non-performing assets.
- Government does not spend any amount on write-offs of corporate loans, The Minister did not name individual borrowers whose accounts have been written off citing the **RBI Act**.
- Banks can also negotiate settlements or compromise or even sell non-performing assets. Further, in line with the **RBI's Framework for Compromise Settlements and Technical Write-offs on June 8, 2023**, compromise settlements are undertaken by lenders in respect of wilful defaulters without prejudice to criminal proceedings underway against such debtors, he said.

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### **Topic 39. RBI'S AGREEMENT WITH BANK OF ENGLAND FOR CCIL MATTER**

*Important for the subject : Economy*

**Recognition of RBI's Regulatory Role:**

RBI Governor Shaktikanta Das highlighted the **agreement with the Bank of England**

during the recent monetary policy statement.

- The agreement recognizes the RBI as the principal regulator of Clearing Corporation of India (CCIL).
- It affirms mutual respect for each jurisdiction's current regulatory regime and supervisory practices.

#### **Resolution of Regulatory Ambivalence:**

- The agreement aims to **bring an end to regulatory ambivalence regarding CCIL**. It addresses doubts raised on India's regulatory capabilities by affirming the regulatory role of the RBI.

#### **Assessment of UK Banks' Use of CCIL:**

- The agreement facilitates the **Bank of England in assessing whether UK-based banks can utilize CCIL for settling transactions in Indian government bonds, foreign exchange, and derivative markets.**

#### **Guidance for Other Regulators:**

- The agreement sets an example for other regulators, **including the European Securities Markets Association (ESMA), on resolving contentious issues related to the external supervision of Indian clearing corporations.**

#### **Resolution of External Supervision Dispute:**

- Over the past year, **ESMA and Bank of England had set a deadline for derecognizing Indian clearing corporations regulated by RBI, SEBI, and IFSCA.**
- The agreement **signifies a resolution to the dispute, emphasizing the regulatory competence of Indian clearing corporations.**

#### **Superiority of Indian Clearing Corporations:**

- The agreement reinforces that **Indian clearing corporations are superior to their European counterparts in terms of risk management and investor protection.**
- Indian clearing corporations operate as independent entities with robust settlement guarantee funds.

#### **Concerns About Data Access:**

- **Indian regulators have expressed concerns about data access provided by external rules, emphasizing the need to safeguard data privacy.**

#### **Global Implications:**

- The agreement has global implications, **signaling that jurisdictions may not be willing to adhere to external regulatory demands.**

- European banks facing restrictions may lead to a shift in business to banks in the US or Asia.

#### **RBI's Assertive Response:**

- The RBI's assertive stance in calling out the aspersions on Indian regulators and **securing the agreement with the Bank of England is commendable**. The agreement serves as a model for similar agreements with other regulators.

#### **Model for Future Agreements:**

- The agreement with the Bank of England is **expected to serve as a model for future agreements with other regulators, providing a framework for addressing regulatory issues**.

#### **Clearing Corporations (CC):**

##### **Definition:**

- Clearing Corporations (CC) are organizations **associated with financial exchanges that facilitate the confirmation, settlement, and delivery of financial transactions**. They play a crucial role in ensuring the smooth functioning of financial markets.

##### **Functions of Clearing Corporations:**

- **Confirmation:** Verifying the details of a trade or transaction.
- **Settlement:** Ensuring the actual exchange of assets and funds between parties.
- **Delivery:** Facilitating the transfer of financial instruments or commodities.

##### **Examples of Clearing Corporations in India:**

- In the context of Indian financial markets, some examples of Clearing Corporations include:
- **The Clearing Corporation of India Limited (CCIL):** Handles clearing and settlement for various financial instruments.
- **Indian Clearing Corporation Ltd (ICCL):** Associated with the BSE (Bombay Stock Exchange).

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### **Topic 40. RBI'S MONETARY POLICY REVIEW HIGHLIGHTS**

*Important for the subject: Economy*

#### **Policy Rate Unchanged:**

The Reserve Bank of India (RBI) has **maintained the policy rate at 6.5%, marking the fifth consecutive time without a change**.



- The decision is driven by the central bank's vigilant stance on inflation.

#### **Liquidity Management Tools Adjusted:**

- RBI has **tweaked liquidity management tools, specifically the Marginal Standing Facility (MSF) and Standing Deposit Facility (SDF).**
- Reversal of MSF and SDF facilities will be **allowed on weekends and holidays**, effective from December 30, to enhance liquidity management.
- The **move aims to address the simultaneous high utilization of both MSF and SDF by banks.**

#### **Rate Details:**

- The **Standing Deposit Facility rate remains at 6.25%.**
- The **Marginal Standing Facility (MSF) rate is maintained at 6.75%.**

#### **Deficit Liquidity and Government Spending:**

- **System liquidity, measured by the net position under the Liquidity Adjustment Facility (LAF), turned into a deficit in September 2023 for the first time since May 2019.**
- Deficit liquidity was influenced by factors such as **higher currency leakage during the festive season, government cash balances, and RBI's market operations.** RBI expects liquidity conditions to ease as government spending increases.

#### **Additional Spending Proposal:**

- The Indian government has sought parliamentary approval for additional spending of Rs 1.29 trillion in the current fiscal year.
- The proposed spending includes higher subsidies for farmers and funding for a rural job employment program.
- Net additional spending for the fiscal year is Rs 58,378 billion rupees, with the remaining amount accommodated through expense reshuffling.

#### **Future Outlook:**

- The RBI remains **committed to nimble liquidity management, anticipating that government spending will further alleviate liquidity conditions.**

#### **Review Period for Adjusted Measures:**

- The newly introduced measure of allowing the reversal of liquidity facilities under SDF and MSF on weekends and holidays will be reviewed after six months or earlier if necessary.

#### **Conclusion:**

- The RBI's monetary policy review emphasizes maintaining the status quo on the policy rate, introducing measures for effective liquidity management, and addressing deficit liquidity concerns while anticipating the impact of increased government spending.
- The adjustments in liquidity tools aim to enhance flexibility and responsiveness in the banking system. The central bank remains watchful of inflation and committed to supporting economic stability.

### **Monetary Policy Instruments of RBI:**

#### **Qualitative Instruments:**

##### **Moral Suasion:**

- Persuasion and communication techniques to influence banks' behavior.
- Encourage or discourage certain activities without using direct regulatory measures.

##### **Direct Credit Controls:**

- Regulation of credit flow to specific sectors or industries.
- Target and control credit allocation to influence economic activities.

##### **Selective Credit Controls:**

- Targeting specific types of loans to control demand in specific areas.
- Direct control over credit for specific purposes, such as curbing inflation or promoting certain sectors.

#### **Quantitative Instruments:**

##### **Cash Reserve Ratio (CRR):**

- Reserves that banks must maintain with the central bank against their total deposits.
- Regulate the overall money supply in the economy.

##### **Repo Rate:**

- The interest rate at which the central bank lends short-term funds to commercial banks.
- Influence short-term interest rates and control liquidity in the banking system.

##### **Reverse Repo Rate:**

- The interest rate at which banks can park excess funds with the central bank. Control the money supply by managing the flow of funds in the banking system.

### Bank Rate:

- The rate at which the central bank provides long-term funds to commercial banks.
- Regulate long-term interest rates and provide a benchmark for other interest rates.

### Open Market Operations (OMOs):

- Buying or selling government securities in the open market.
- Influence money supply, interest rates, and liquidity conditions.

### Liquidity Adjustment Facility (LAF):

- Includes Repo Rate and Reverse Repo Rate.
- Provide liquidity or absorb excess liquidity in the banking system.

### Marginal Standing Facility (MSF):

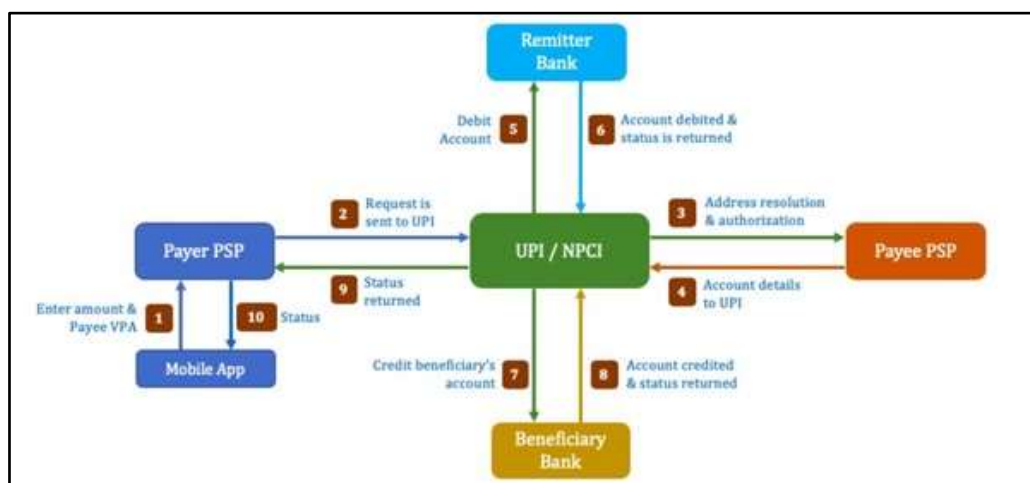
- Allows banks to borrow overnight funds against collateral.
- Manage short-term liquidity needs of banks.

### Statutory Liquidity Ratio (SLR):

- Percentage of Net Demand and Time Liabilities (NDTL) to be maintained in approved securities. Ensure banks hold a certain proportion of their deposits in liquid assets to meet obligations.

## Topic 41. RS 5 LAKH UPI LIMIT FOR PAYMENT TO HOSPITAL AND EDUCATIONAL INSTITUTION

*Important for the Important for the subject Economy*



Rs 5 lakh UPI limit for payment to hospital and educational institution.

The Reserve Bank of India (RBI) has **announced several regulatory measures** in the UPI and **fintech ecosystem**, along with developments in the financial markets:

- The **UPI transaction limit for medical and educational services** has been **raised from Rs 1 lakh to Rs 5 lakh**.
- RBI has **exempted e-mandates additional factor authentication (AFA)** for **transactions up to Rs 1 lakh** for activities such as **mutual fund subscriptions, insurance premium payments, and credit card bill payments**.
- Existing requirements like **pre- and post-transaction notifications and opt-out facilities will continue**.
- RBI **plans to establish a Fintech Repository** to better understand developments in the fintech ecosystem. It will be operationalized by the Reserve Bank Innovation Hub by April 2024 or earlier.
- RBI is **working on setting up a cloud facility** for the financial sector in **India** to enhance **data security, integrity, privacy, scalability, and business continuity**. The rollout will be calibrated over the medium term.
- A **unified regulatory framework for connected lending for all regulated entities** will be introduced, strengthening credit pricing and management.
- RBI will establish a regulatory framework for the **web-aggregation of loan products**, aiming to **enhance customer centricity and transparency** in digital lending.

#### **What is Unified Payments Interface (UPI):**

- The **Unified Payments Interface (UPI)** is a system that **consolidates multiple bank accounts into a single mobile application** provided by any participating bank.
- Developed by the **National Payments Corporation of India (NPCI)**, UPI serves as a **payment system enabling seamless money transfers** between any two bank accounts using a smartphone.
- This **payment interface allows customers to make direct payments from their bank accounts to various merchants**, both online and offline, **eliminating the need to input credit card details, IFSC codes, or net banking/wallet passwords**.
- UPI **integrates numerous banking features**, facilitating effortless fund routing and merchant payments within a unified framework.
- UPI was launched in **April 2016**, and has **gained significant popularity**, becoming a preferred **choice for users engaged** in sending and receiving money.
- Additionally, the platform addresses **“Peer to Peer” collect requests**, which can be **scheduled and paid at the user’s convenience** and as **per specific requirements**.

## Topic 42. ASYMMETRIC FEDERALISM

### *Important for the subject: Polity*

Constitutionally, India's governance structure is **quasi-federal**. While in a unitary setup, the power to legislate is concentrated in the Centre, in a **federal structure**, the units that form the federation have varying **degrees of autonomy and powers to conduct their affairs**.

- In the Indian context, while states do **have autonomy**, the Constitution tilts towards the Centre on certain areas, thus making it quasi-federal. The Seventh Schedule of the Constitution contains the **Union, State and Concurrent lists** that prescribe Important for the subjects that the Centre and states are empowered to legislate upon.
- For those in the concurrent list—which both the Centre and state can legislate upon—the Union law would prevail in case of a conflict between the law made by Parliament and the state legislature.
- However, even in this quasi-federal structure that leans more towards the Centre, not all states are equal. India's plurality necessitates such an arrangement and the Constitution provides for differentiated equality for states depending on various factors, ranging from the fiscal, political and the administrative.
- However, an argument is made against asymmetric federalism, that the so-called special statuses sow seeds of regionalism and separatism and that it impacts 'national integration.'
- The term asymmetrical federalism refers to **“differences in the status of legislative or executive powers assigned by the constitution to different regional units”**.
- It is a flexible type of union of states which allows the government to cut different deals with different states in special matters pertaining to them.
- This method allows the government to grant special status to some units providing them with special powers not enjoyed by other states. Asymmetry involves providing greater autonomy to some states when compared with others.
- It permits particular states to have greater executive, legislative, and at times, judicial powers than other states.

### **Why asymmetric federalism?**

- To address specific local, historical and geographical contexts. Besides the Centre and the States, the country has Union Territories with a legislature, and Union Territories without a legislature.

### **How does it play out in India?**

### Case Study 1 : UTs

- Puducherry and Delhi have legislatures, while the other territories under the Centre do not have legislatures or a ministerial council to advise the administrator. Even between Puducherry and Delhi, there is a notable difference.
- Puducherry has legislative powers on any matter mentioned in the State List or the Concurrent List, insofar as it applies to the Union Territory. Delhi, which has the same field, has three further exceptions: police, land and public order are outside its purview. However, Parliament has overriding powers over any law made by the Assembly in the Union Territories.
- Puducherry has one more unique feature. Despite being a single administrative unit, the Union Territory is '**non-contiguous**'. That is, its territory is not limited to one extent of land. Besides Puducherry and its adjoining areas, it has enclaves located within other States: Karaikal (within Tamil Nadu) Yanam (within Andhra Pradesh) and Mahe (within Kerala).

### Case Study 2: Article 370 (Now amended)

- The foremost example of asymmetry among Centre-State ties was in the way J&K related to India until August 6, 2019, the day the President declared that its special status ceased to be operative.
- Under Article 370, the State was allowed to have its own Constitution, its own definition of 'permanent residents', the right to bar outsiders from holding property, and the privilege of not having any Indian law automatically applicable to its territory.
- Indian laws had to be specifically permitted by its Assembly before it could operate there. It was allowed to have its own Penal and Criminal Procedure Codes.
- The President was empowered to notify, from time to time, the provisions of the Constitution that could be extended to the State, with or without modifications

### Case Study 3: Article 371

- The 'special provisions' applicable to some other States are mainly in the form of empowering the Governors to discharge some special responsibilities.
- These States are **Maharashtra, Gujarat, Manipur, Nagaland, Sikkim and Arunachal Pradesh**. The common feature is that wherever Governors have been asked to discharge special responsibilities, their discretionary power overrides the process of consultation

with the respective Council of Ministers.

- **Article 371** says the Governor of Maharashtra has a special responsibility to establish separate development boards for Vidarbha, Marathwada, and the rest of the State, while the Governor of Gujarat has a similar responsibility towards Saurashtra, Kutch and the rest of Gujarat.
- The responsibilities cover equitable allocation of funds for development expenditure, and providing facilities for technical education and vocational training.
- **Article 371A** confers special status on Nagaland. Under this provision, no law made by Parliament in relation to Naga customary law and procedure, including civil and criminal justice matters, and ownership or transfer of land and resources will apply to Nagaland, unless the Legislative Assembly of Nagaland decides so.
- The protection of Naga laws and customs was written into the Constitution following the July 1960 agreement between the Centre and the Naga People's Convention, under which the State was later created. Further, the Governor of Nagaland has a 'special responsibility' regarding law and order in the State.
- Article 371B contained a special provision for Assam under which a committee of legislators from the tribal areas was formed to look after their interest. The tribal areas later became Meghalaya State.
- **Under Article 371C**, the Hill Areas of Manipur ought to have a committee of legislators. The Governor has a special responsibility to make an annual report to the President on the administration of the Hill Areas. The Centre is empowered to give directions to the State as far as these areas were concerned.
- **Article 371D** is a detailed provision under which the President can pass an order to provide equitable opportunities and facilities to people belonging to different parts of Andhra Pradesh in public employment and education. In particular, the President can create local cadres in various classes of employment and allot civil posts to specified local cadres only.
- The President can specify any part of the State as a 'local area' for this purpose. To give effect to this arrangement, an Administrative Tribunal has been set up. No court, other than the Supreme Court, has any power of superintendence over this tribunal.
- **Article 371F** incorporated special provisions after the addition of Sikkim to India. One major objective was to grant protection to existing laws in Sikkim so that they are not declared unconstitutional after being brought under the Constitution of India.
- **Article 371G** contains special provisions to preserve the religious and social practices of Mizos in Mizoram and their customary law and procedure and administration of criminal and civil justice, besides ownership of land.
- **Article 371H** vests a special responsibility on the Governor of Arunachal Pradesh with

respect to law and order. It makes clear that the Governor shall discharge this function after consulting the Council of Ministers, but exercise his individual judgment as to the action taken.

#### Case Study 4: Sixth Schedule

- There is another significant tier of administration under the larger framework of asymmetric federalism.
- The **Sixth Schedule** to the Constitution contains provisions for the administration of tribal areas in **Assam, Meghalaya, Tripura** and **Mizoram**. These create autonomous districts and autonomous regions.
- Any autonomous district with different Scheduled Tribes will be divided into autonomous regions. These will be administered by District Councils and Regional Councils.
- These Councils can make laws with respect to allotment, occupation and use of land, management of forests other than reserve forests and water courses. Besides they can regulate social customs, marriage and divorce and property issues.
- In Assam, the Karbi-Anglong Autonomous Council, Dima Hasao Autonomous District Council and the Bodoland Territorial Council have been set up under the Sixth Schedule.
- Another six autonomous councils have been formed by Acts of the legislature. Ladakh has two autonomous hill development councils (Leh and Kargil). The Darjeeling Gorkha Hill Council is in West Bengal.

#### Topic 43. ALLAHABAD HIGH COURT ALLOWS SURVEY OF MATHURA'S SHAHI IDGAH MOSQUE

##### *Important for the subject: Polity*

On December 14, the Allahabad High Court allowed an application for the inspection of the Shahi Idgah mosque complex, **reigniting the Sri Krishna Janmabhoomi-Shahi Idgah Masjid dispute**.

- Hindu petitioners assert that the **mosque, constructed by Emperor Aurangzeb in 1670, was built over Lord Krishna's birthplace in Mathura**. The mosque is adjacent to the Krishna Janmasthan Temple, a significant pilgrimage site.

##### **Latest Legal Plea on Sri Krishna Janmabhoomi:**

- **Nature of the Application:** The application is part of a petition initiated by eight individuals including the "next friend" of Bhagwan Shree Krishna Virajman.
- **Survey Approval:** Allahabad High Court approved the survey of the Shahi Idgah mosque on December 14.
- **Petition's Demands:** The petitioners seek the removal of structures allegedly



encroaching on the disputed land by the UP Sunni Central Waqf Board and the mosque committee, and the transfer of this land to the Shree Krishna Janmbhoomi Trust.

- **Challenge to the 1968 Agreement:** The plea contests the legality of a compromise agreement dated October 12, 1968, **between the Shri Krishna Janmasthan Seva Sansthan and the Trust Shahi Masjid Idgah.**

### Historical context and Claims

- **Aurangzeb's Alleged Demolition:** The Hindu petition cites historical records, claiming Aurangzeb ordered the demolition of Hindu temples, including one at Lord Krishna's birthplace, to construct the Idgah Mosque in 1669-70.
- **Reference to Official Records:** The petition mentions the Official Court Bulletin (Akhbaraat) from January to February 1670 as evidence of Aurangzeb's orders.

### Counterclaims by the Muslim Side

- **Legal Arguments:** Representatives of the **UP Sunni Central Waqf Board** and the mosque committee argue in the High Court that the mosque does not fall within the disputed 13.37 acres and dispute the location of Krishna's birthplace.
- **Challenging the Hindu Claims:** They assert that the Hindu claims are based on speculation and lack documentary evidence.

### Historical Ownership and Management

- **Land Ownership Changes:** The site, originally **nazul land**, was **auctioned by the East India Company** in 1815 to Raja Patni Mal of Benaras.
- **Subsequent Transactions:** The land was later sold to **Jugal Kishore Birla**, and the ownership rights were transferred to the **Shri Krishna Janmabhoomi Trust, established by Birla.**
- **Temple Management:** In 1956, the Shri Krishna Janmasthan Sewa Sangh, later renamed as Sansthan, was established for temple management.

### Similarities with the Gyanvapi Case

- **Similar Legal Proceedings:** The Mathura case is comparable to the Gyanvapi Mosque dispute in Varanasi, **where a court-ordered survey led to the discovery of a structure claimed as a "shivling" by Hindus and a "fountain" by Muslims.**
- **Archaeological Surveys and Legal Challenges:** The Varanasi district court's order for a scientific survey of the Gyanvapi mosque and the subsequent legal hurdles reflect similar developments in the Mathura case.

## **Topic 44. THE ADVOCATES AMENDMENT BILL, WHICH AIMS TO WEED OUT 'TOUTS'**

*Important for the subject: Polity*

The Advocates Amendment Bill

The **Advocates Amendment Bill, 2023**, was passed in the **Lok Sabha during the first day of Parliament's Winter Session**. The bill aims to eliminate 'touts' from the legal system by **repealing the Legal Practitioners Act, 1879**, and **amending the Advocates Act, 1961**.

- The bill focuses on **reducing unnecessary enactments** in the statute book and **eliminating obsolete laws**.

**What does the now-repealed 1879 Act state**

- The **Legal Practitioners Act**, enacted in **1880**, aimed to **consolidate and amend the law related to legal practitioners** in certain provinces.
- The Act applied to areas in **West Bengal, Uttar Pradesh, Punjab, Bihar, Madhya Pradesh, Assam, Orissa, and Delhi**, and could be extended to other states by their governments.
- **Section 2** defined "legal practitioner" to include **advocates, vakils, or attorneys of any High Court**.
- It also introduced the term "**tout**," referring to someone who **procures employment for a legal practitioner** in exchange for remuneration.
- The **Advocates Act of 1961** repealed most provisions of the **1879 Act** but retained elements related to its extent, definitions, and powers to frame and publish lists of touts.

**What is the Advocates Act of 1961:**

- The **Advocates Act of 1961** was enacted to amend and **consolidate the law concerning legal practitioners and the establishment of Bar Councils** and an **All-India Bar**.
- Before its enactment, legal practitioners were governed by **three Acts – the Legal Practitioners Act of 1879, the Bombay Pleaders Act of 1920, and the Indian Bar Councils Act of 1926**.
- The need for **judicial administration reforms post-independence** prompted the **Law Commission** to recommend **repealing the 1879 Act** in its **249th Report**, titled '**Obsolete Laws: Warranting Immediate Repeal**'.
- The **All-India Bar Committee** also provided **recommendations in 1953**, contributing to the passage of the 1961 Act.

What does the Advocates Amendment Bill, 2023, say:

- The **Advocates Amendment Bill, 2023**, has been passed in the Lok Sabha to **eliminate ‘touts’** from the legal system.
- The bill **repeals the Legal Practitioners Act, 1879**, and **amends the Advocates Act, 1961**, with the aim of **reducing superfluous enactments and eliminating obsolete laws**.
- The new **Section 45A** allows **High Courts and district judges** to frame and **publish lists of touts**. Individuals can **contest their inclusion** in such lists before publication.
- If found to be a **tout**, their names will be **published and displayed in every court**. The Bill also **imposes penalties** for acting as a **tout** while included in such a list.

### Topic 45. WHAT WAS BOMMAI JUDGMENT ON WHICH SC RELIED ON

*Important for the subject: Polity*

In the **Bommai case**, a **nine-judge bench** of the Supreme Court provided an **interpretation of Article 356** of the Constitution, **defining the conditions for the proclamation of President’s rule**.

- Article 356 addresses situations **“in case of failure of constitutional machinery in States”** and **outlines the process for imposing President’s rule**.
- The unanimous ruling **affirmed the provision but established that the President’s decision would be Important for the subject to judicial review**.
- The Bommai case **remains the established legal precedent** for determining **when and how President’s rule can be imposed**.
- It was referenced in **recent cases challenging President’s rule in Uttarakhand (2016) and Arunachal Pradesh (2016)**, both of which were **overturned** by the Supreme Court.

What is the background of the case:

- In **1989**, the **Congress government** at the Centre **dismissed the Janata Dal-led Karnataka government**, led by **Chief Minister SR Bommai**, by **imposing President’s rule**.
- The dismissal was **based on alleged letters from 19 MLAs withdrawing their support**. **Karnataka Governor P Venkatasubbaiah** recommended to the President to take over the state’s administration, citing the **lack of majority support for Bommai** and no other political party being in a position to form the government.
- The **move was controversial**, and the **Supreme Court later noted that the Governor did not ascertain Bommai’s view** before making the **report to the President**.
- Furthermore, **seven out of the 19 legislators** who **allegedly withdrew support** later

reversed their stance, claiming their signatures were obtained through misrepresentation.

- **Bommai challenged the dismissal in the Karnataka High Court**, which ruled against him. The case was then appealed to the **Supreme Court**, leading to the formation of a **nine-judge bench** to address the matter.

#### What was the verdict:

- The **Supreme Court**, in the **Bommai case**, unanimously ruled that the **President's proclamation of President's rule** can be **Important for the subject to judicial review** on grounds of **illegality, mala fide, extraneous considerations, abuse of power, or fraud**.
- The Court clarified that **while the President's Important for the subjective appraisal** couldn't be examined, the **material relied upon** for the decision could be reviewed.
- The verdict **also mandated Parliamentary approval** for imposing **President's rule**. The **President could only exercise** this power after the **proclamation was approved by both Houses of Parliament**. Until then, the **President could only suspend the state legislature**.
- If **Parliament didn't approve the proclamation within two months**, the **dismissed government would automatically** be revived.
- The **ruling established a clear boundary for center-state relationships**, emphasizing that **states were not mere appendages** of the Center.
- The **Bommai judgment significantly reduced the imposition of President's rule** after scrutinizing the **conduct of the Governor's office**, especially when dismissing state governments run by opposition parties.
- From **1950 to 1994, President's rule was imposed 100 times**, averaging 2.5 times a year. After Bommai, between 1995 and 2021, it was **imposed only 29 times**, a little over once a year

#### What was the Kashmir reference

- In the **Kashmir case**, a **crucial question was whether Article 370** could be abrogated during the **President's rule** in the state.
- The Supreme Court, **drawing on the Bommai ruling**, affirmed the **constitutionality of the President's actions**.
- The Court referred to the **Bommai judgment**, emphasizing that **actions taken by the President post-proclamation were Important for the subject to judicial review**.
- It **highlighted the standards set by different judges** in Bommai, particularly those of **Justice PB Sawant (mala fide or palpably irrational exercise of power) and Justice**

**Reddy (consideration of advisability and necessity by the President).****Key Highlights:**

- **SR Bommai Case Background:** Arising from the 1989 dismissal of Karnataka's Janata Dal-led government, Governor Venkatasubbaiah recommended President's rule, citing SR Bommai's loss of majority.
- **Controversy Surrounding Governor's Recommendation:** The move sparked controversy as some MLAs retracted support, alleging misrepresentation in obtaining their signatures.
- **Supreme Court's Verdict on President's Proclamation:** The Court unanimously ruled that the President's proclamation is Important for the subject to judicial review, considering grounds such as illegality, malafide, and abuse of power.
- **Impact on President's Rule Frequency:** Post-SR Bommai, President's rule decreased significantly, from an average of 2.5 times annually (1950-1994) to just over once a year (1995-2021).
- **Kashmir Reference in Article 370 Ruling:** The central question during the Article 370 ruling was whether its abrogation during J&K's President's rule (since 2018) was permissible.
- **Supreme Court's Reliance on SR Bommai:** The Court validated the President's actions in J&K by applying SR Bommai standards, as set by Justices PB Sawant and Jeevan Reddy, for testing the validity of executive orders.

**Topic 46. NOT POSSIBLE TO ACCURATE DATA TO ILLEGAL MIGRANTS CENTER TO SC*****Important for the subject: Polity***

Supreme Court is hearing petitions challenging the constitutional validity of Section 6A

The **Indian government** informed the **Supreme Court** that the entry of **illegal immigrants** into the country is **clandestine and surreptitious**, making it impossible to **gather accurate data** on their numbers.

Responding to the **court's direction** seeking **details on the estimated inflow of illegal migrants to Assam** and other north eastern states after **March 25, 1971**, the government stated that **between 2017 and 2022, 14, 346 foreigners** were **deported due** to reasons **such as overstay**, visa violation, and illegal entry.

- The **affidavit also mentioned the challenges and delays** in border fencing, particularly in **West Bengal**, due to land acquisition **issues and non-cooperation** from the state government.

- The matter is scheduled for a hearing in the Supreme Court on Tuesday.

#### What is Section 6A of the Citizenship Act, 1955:

- Section 6A is a special provision inserted into the 1955 Act in furtherance of a Memorandum of Settlement called the 'Assam Accord' signed on August 15, 1985 by the then Rajiv Gandhi government with the leaders of the Assam Movement to preserve and protect the Assamese culture, heritage, linguistic and social identity.
- Under Section 6A, foreigners who had entered Assam before January 1, 1966, and been "ordinarily resident" in the State, would have all the rights and obligations of Indian citizens.
- Those who had entered the State between January 1, 1966 and March 25, 1971 would have the same rights and obligations except that they would not be able to vote for 10 years.

#### What was Assam accord:

- The Assam Accord was signed in 1985 between the Union government and the All Assam Students' Union at the end of a 6-year-long agitation against the influx of migrants from Bangladesh into the state.
- It determines who is a foreigner in the state of Assam. Clause 5 of the Assam Accord states that January 1, 1966 shall serve as the base cut-off date for the detection and deletion of "foreigners".
- But it also contains provisions for the regularization of those who arrived in the state after that date and up till March 24, 1971.

#### Some facts about National Register of Citizens (NRC)

- National Register of Citizens, 1951 is a register prepared after the conduct of the Census of 1951 in respect of each village, showing the houses or holdings in a serial order and indicating against each house or holding the number and names of persons staying therein.
- The NRC was published only once in 1951 and since then, it has not been updated until 2019.
- The NRC of 1951 and the Electoral Roll of 1971 (up to midnight of 24 March 1971) are together called Legacy Data. Persons and their descendants whose names appeared in these documents are certified as Indian citizens.

## Topic 47. SC UPHOLDS REPEAL OF J&K'S SPECIAL STATUS

*Important for the subject: Polity*

A Constitution Bench of the Supreme Court unanimously upheld the power of the President to abrogate special status of Jammu and Kashmir under Article 370 of the Constitution, leading to the reorganization of the full fledged State to two Union Territories and the removal of its privileges.

- **Court's Ruling on J&K Sovereignty:** The Court unanimously dismissed the claim that J&K retained sovereignty, emphasizing its integral status in the Indian Constitution.
- **Article 370's Nature – Temporary or Permanent:** Petitioners argued for permanence, but both CJI Chandrachud and Justice Kaul concurred that Article 370 was temporary.
- **Legality of Article 370 Abrogation:** President's 2019 order redefining the Constituent Assembly was upheld; CJI Chandrachud asserted post-dissolution, the President could unilaterally abrogate Article 370.
- **President's Rule and Union's Actions:** The challenge focused on powers under Article 356; Court, citing Bommai ruling, stressed actions must not be mala fide or irrational.
- **Centre's Supremacy Upheld:** Here, interpreting Parliament's powers, the Court indicated it could change a state's status under President's rule; J&K Reorganisation Bill was referred to Parliament during President's rule.
- **Validation of Executive Orders:** Applying Bommai standards, the Court emphasized proof of mala fides is necessary to challenge executive orders.

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## Topic 48. AFTER MAHUA EXPULSION

*Important for the subject: Polity*

Trinamool Congress MP Mahua Moitra was Friday expelled from the Lok Sabha. The Lok Sabha **expelled Trinamool Congress** member Mahua Moitra over the “**cash-for-query**” **allegation** through a voice vote amid chaos.

- Union Parliamentary Affairs Minister had moved the motion to **expel Ms. Moitra as per the recommendation of the Ethics Committee report.**
- The **report found her guilty** of sharing her credentials with others, **accepting gifts for favors from a businessman.**

**Can she go to the Supreme Court:**

- The **expelled individual** has the **option to challenge the expulsion** in the **Supreme Court.**
- While **Article 122** of the **Constitution** typically grants **immunity to parliamentary**

proceedings from court challenges based on procedural irregularities, **the Supreme Court, in the 2007 Raja Ram Pal case**, clarified that **these restrictions are specifically for procedural irregularities.**

- In certain cases, judicial review may be deemed necessary, despite the general immunity outlined in Article 122.

#### What can be the grounds for a challenge

- Former Lok Sabha secretary general **P. D. T. Achary** explains that **while a House has the authority to expel a Member for breaching privilege**, the court can assess whether that **specific privilege** was in effect at the time.
- He notes the **distinct roles of the Privileges Committee and Ethics Committee**, emphasizing that they investigate misconduct and assess if a member has compromised the House's dignity.
- While **investigative procedures lack specific rules**, Achary suggests that **fair methods, such as allowing the accused to depose, cross-examine individuals, and present relevant evidence, should be followed to uncover the truth.**
- In the case of lawmaker Moitra, **who claims denial of natural justice, she alleges not being permitted to cross-examine** individuals involved in the bribery accusations against her.

#### What had been Supreme Court's stand on the issue in the past:

- The Supreme Court has **presented contrasting perspectives on analogous cases** in the past, illustrating the **intricacies of parliamentary expulsions.**
- The **2007 Raja Ram Pal case** emphasized **Parliament's authority to expel members**, contingent upon justiciability.
- Nevertheless, **discrepancies arose among judges regarding the interpretation of Article 101**, addressing seat vacation in Parliament. The **minority judgment** expressed reservations about the **comprehensive nature of Article 101**, pointing out its **omission of expulsion as a basis for vacancy.**
- In a subsequent case, **Amarinder Singh vs Special Committee, Punjab Vidhan Sabha**, the Supreme Court declared the **expulsion of former Punjab Chief Minister Amarinder Singh as unconstitutional.**
- The **ruling highlighted concerns about potential misuse** of legislative privileges to target political adversaries or dissenters, **particularly in relation to their past legislative actions.**
- The **Supreme Court's position** in this instance **raises apprehensions regarding vague grounds for expulsion**, such as **conduct unbecoming of a member or lowering the dignity of the House**, which could potentially lead to the selective application of



**legislative privileges against political opponents.**

**What is Article 105:**

- **Article 105 of the Constitution addresses the powers and privileges of Parliament and its members and committees.**
- **Article 105(3) specifies that these powers, privileges, and immunities are to be defined by Parliament through law.**
- **Until such definition, they are to be those in effect before the Constitution's Forty-fourth Amendment Act, 1978.**
- **The court emphasized that Article 105(3) does not grant absolute immunity to parliamentary proceedings, allowing for judicial scrutiny.**
- **However, the court clarified that it won't question the truth or correctness of the material relied upon by the legislature, nor will it assess the adequacy of the material or substitute its opinion for that of the legislature.**
- **Certain Constitutional provisions, such as Article 122 or 212, impose restrictions on this judicial scrutiny.**

**Some facts about Ethics Committee:**

- **Each of the two Houses of Parliament has an ethics committee. They deal with the members'**
- **Besides overseeing the moral and ethical conduct of members, ethics committee also prepares a Code of Conduct for members, which are amended from time to time.**
- **The ethics committee in Lok Sabha has 15 members while in Rajya Sabha has 10 members.**
- **The members of the Ethics Committee are appointed by the Speaker for a period of one year.**

**What is the history of Ethics Committees:**

- **A Presiding Officers' Conference held in Delhi in 1996 first mooted the idea of ethics panels for the two Houses.**
- **Then Vice President K R Narayanan constituted the Ethics Committee of the Upper House on March 4, 1997, and it was inaugurated that May to oversee the moral and ethical conduct of members and examine cases of misconduct referred to it.**
- **The Rules applicable to the Committee of Privileges also apply to the ethics panel. In the case of Lok Sabha, a study group of the House Committee of Privileges, after visiting Australia, the UK, and the US in 1997 to look into practices pertaining to the conduct and ethics of legislators, recommended the constitution of an Ethics**

Committee, but it could not be taken up by Lok Sabha.

- The Committee of Privileges finally recommended the constitution of an Ethics Committee during the 13th Lok Sabha.
- The late Speaker, G M C Balayogi, constituted an ad hoc Ethics Committee in 2000, which became a permanent part of the House only in 2015.

**What is the Procedure for complaints:**

- Any individual has the right to file a complaint against a Member of Parliament (MP) by going through another Lok Sabha MP. This process requires providing evidence of the alleged misconduct and submitting an affidavit affirming that the complaint is not “false, frivolous, or vexatious.”
- If the MP in question files the complaint, there is no need for an affidavit. The Speaker has the authority to forward any complaint against an MP to the Ethics Committee.
- Notably, the committee does not entertain complaints solely based on media reports or matters under judicial consideration.
- Before deciding to investigate a complaint, the committee conducts a prima facie inquiry and subsequently issues recommendations based on its evaluation.
- The committee then presents its report to the Speaker, who seeks the House’s opinion on whether to consider the report. Additionally, there is provision for a half-hour discussion on the report.

**Topic 49. CENTRE ANNOUNCES ₹1,500CR. AID TO T.N. AND A.P. AFTER CYCLONE WREAKS HAVOC**

*Important for the subject: Polity*

The Union government on Thursday released ₹493.60 crore to Andhra Pradesh and ₹450 crore to Tamil Nadu in the wake of the damage inflicted by severe cyclonic storm Michaung this week.

- The Prime Minister has approved the first urban flood mitigation project of ₹561.29 crore for ‘Integrated Urban Flood Management activities for Chennai Basin Project’ under the National Disaster Mitigation Fund (NDMF).

**About Cyclone Michaung**

- **Severe Intensity:** December cyclones in the North Indian Ocean typically do not reach high intensities. Michaung, with its severe storm classification, is an exception.
- **Upgraded Intensity:** Initially predicted as a tropical cyclone, IMD upgraded Michaung to a ‘severe’ storm due to its unexpected intensification.

- **Heat Index Contribution:** The intensification is attributed to the above-normal heat index values off the southern Andhra Pradesh coast.

### How Is a Cyclone Named?

- **Rotational Basis for Naming:** The naming of cyclones is done by countries on a rotational basis, following certain existing guidelines.
- **Responsibilities of RSMCs and TCWCs:** Worldwide, there are six regional specialized meteorological centers (RSMCs) and five regional Tropical Cyclone Warning Centers (TCWCs) mandated for issuing advisories and naming of tropical cyclones.
- **IMD's Role:** IMD is one of the six RSMCs providing tropical cyclone and storm surge advisories to 13 member countries under the WMO/Economic and Social Commission for Asia-Pacific (ESCAP) Panel.
- **Naming Authority of IMD:** RSMC, New Delhi, is also mandated to name the tropical cyclones developing over the north Indian Ocean, including the Bay of Bengal and the Arabian Sea.
- **Guidelines for Naming:** Some rules are to be followed while naming cyclones, such as being neutral to politics, religious beliefs, cultures, and gender, avoiding offensive or cruel names, and keeping the name short and easy to pronounce.
- **Future Naming:** After 'Michaung', the next cyclone as per India's suggestion will be named 'Tej'.

### About

- The **Disaster Management Act**, defines **National Disaster Mitigation Fund (NDMF)** is constituted under section 47(1) of the **DM Act, 2005**.
- This fund is exclusively for the purpose of mitigation projects in respect of disasters covered in **National Disaster Response Fund (NDRF) Guidelines only**.
- The Mitigation Fund shall be used for those local level and community-based interventions, which reduce the risks and promote environment-friendly settlements and livelihood practices.
- Large-scale mitigation interventions such as construction of coastal walls, flood embankments, support for drought resilience etc. shall be pursued through regular development schemes and not from the mitigation fund.
- Mitigation measures can be both **structural** and **non- structural**.
- **Structural measures:** Structural mitigation measures include any physical construction

to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems.

- These measures attempt to strengthen buildings to better endure future disasters like cyclones and earthquakes.
- **Non- Structural measures:** It does not involve physical construction but use of knowledge, practices, policies, laws / regulations etc. e.g. building codes and laws, location specific planning/strategies, forest management / restoration of mangroves, awareness campaigns etc.
- These guidelines are issued under sections 47 and 62 of the DM Act, 2005 and shall be called 'National Disaster Mitigation Fund (NDMF) guidelines and will be operative from the financial year 2021-22 to 2025-26, and will continue till further orders.

#### **Technical Guidelines:**

- For the guidance of the State Governments/implementing partners etc., National Disaster Management Authority (NDMA) will issue technical guidelines separately, within the broad framework of these guidelines and with the concurrence of Ministry of Home Affairs (MHA).
- Further, Hazard specific mitigation guidelines and detailed procedures for project execution will continue to be issued by the NDMA from time to time in consultation with MHA.

#### **Long Term Mitigation Strategy:**

- At the national and state level, the Disaster Management Authorities will conduct a risk assessment, which presents an assessment of hazards, exposure and vulnerability and their likely impacts.
- Based on the risk assessment, the Disaster Management Authorities will prepare long-term mitigation strategy for their respect jurisdiction.

#### **National Disaster Mitigation Fund (NDMF):**

- The NDMF will be constituted with the nomenclature of "National Disaster Mitigation Fund" in the Public Account in the sub-section (b) Reserve funds not bearing interest of Government of India under Major Head 8235-'General and Other Reser Funds'-145-

‘National Disaster Mitigation Fund’.

- The NDMF will be operated by the Department of Expenditure, Ministry Finance (MoF) in consultation with Ministry of Home Affairs with an objective to release Grants-in-aid to the State Governments for mitigation projects as approved by High Level Committee (HLC).
- The NDMF will be applied by NDMA for appraisal, monitoring and supervision mitigation projects.

#### **Contribution/Allocation to the NDMF:**

- Fifteenth Finance Commission (XV-FC) has recommended Rs. 13,693 crore [20% of National Disaster Risk Management Fund (NDRMF) of Rs.68, 463 crore] for NDMF for the period 2021-22 to 2025-26.
- The details of annual allocations for the period from 2021-22 to 2025-26 is given in Annexure-1.
- The Central Government can mobilize and pool funds in the NDMF from various other sources viz reconstruction bonds, contingent credit/standby facilities with international financial institutions, counterpart funding from implementing partners, crowd funding platforms and Corporate Social Responsibility (CSR) window etc.
- Funds will be credited into the NDMF established in the Public Account of India by operating Major Head “2245-Relief on account of Natural Calamities-07-Disaster Management-797-Transfer to Reserve Funds/Deposits Accounts, in accordance with the provisions of section 47(1) of the DM Act, 2005.
- The budget provision for transferring funds to the NDMF shall be made in Demand for Grants No.40 ‘Transfers to the State of Department of Expenditure, Ministry of Finance.

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#### **Topic 50. NEW DELHI DECLARATION’ ON ARTIFICIAL INTELLIGENCE ADOPTED**

***Important for the subject: International Relations***

Representatives from 28 countries and the European Union convened to adopt the ‘New Delhi Declaration’ at the Global Partnership on Artificial Intelligence (GPAI) summit.

Hosting the summit, **India is set to chair the GPAI grouping in 2024.**

## Key points of ‘New Delhi Declaration’

- The **New Delhi declaration** has attempted to find a **balance between innovation** and the **risks associated with AI systems**. While it is largely upbeat about the economic benefits that AI can bring, it also flags issues around fairness, privacy, and intellectual property rights that will have to be taken into consideration.
- The declaration said that a global framework for use of AI should be rooted in democratic values and human rights; safeguarding dignity and well-being; ensuring personal data protection; the protection of applicable intellectual property rights, privacy, and security; fostering innovation; and promoting trustworthy, responsible, sustainable, and human-centred use of AI.
- **Commitment to AI Principles:** The declaration reaffirms the commitment to responsible stewardship of trustworthy AI, emphasizing democratic values, human rights, and a human-centered approach.
- **Focus on Trustworthy AI:** GPAI aims to promote the trustworthy development, deployment, and use of AI across member countries.

## GPAI’s Inclusive Approach and Global Impact

- **Inclusivity and Global South Participation:** The declaration emphasizes the inclusion of countries in the Global South, aiming to make AI benefits universally accessible.
- GPAI members also promoted equitable access to critical resources for AI innovation including computing, high-quality diverse datasets, algorithms, software, testbeds, and other AI-relevant resources.
- It said that the GPAI will pursue a diverse membership, with a particular focus on low- and middle-income countries to ensure a broad range of expertise, national and regional views, and experiences based on shared values.
- **Japan’s Role as Outgoing Chair:** The previous summit, chaired by Japan, set the stage for expanding the GPAI’s reach and inclusivity.
- **Addressing Modern Challenges:** The declaration acknowledges the need to address issues like misinformation, unemployment, and threats to human rights in the AI context.

## Collaborative Efforts and Future Goals

- Pooling Resources for AI Solutions: Jean-Noël Barrot, France’s Minister for Digital Transition and Telecommunications, highlighted the importance of leveraging OECD resources for AI development and governance.
- **Encouraging Broader Participation:** Japan and India emphasized the importance of including more developing countries in GPAI.
- **Senegal’s Involvement:** Senegal has joined the GPAI steering committee, marking a significant step towards greater inclusivity.

### India’s Contribution to AI in Agriculture

- **Agriculture as a Priority:** The declaration also agreed to support AI innovation in the agriculture sector as a new “**thematic priority**”. The declaration specifically acknowledges India’s role in bringing agriculture into the AI agenda.
- **Support for Sustainable Agriculture:** The commitment to using AI innovation in sustainable agriculture is a new thematic priority for GPAI.

### How does the New Delhi declaration contrast with the Bletchley declaration?

- While the **GPAI New Delhi declaration** addresses the need to tackle **AI-related risks**, it largely supports **innovation** in the technology in various sectors, including agriculture and healthcare.
- The essence of the declaration can be summed up as follows: AI is inherently good and is a catalyst for economic growth, but some harms need to be mitigated along the way.
- By contrast, the declaration that was signed at the **UK AI Safety Summit** last month put security and safety risks related to AI in the centre of the discussions.
- At the **Bletchley Park** meeting, **28 major countries including the United States, China, Japan, the United Kingdom, France, and India, and the European Union** agreed to sign on a declaration saying global action is **needed to tackle the potential risks of AI**.
- The declaration noted the “potential for serious, even catastrophic, harm, either deliberate or unintentional, stemming from the most significant capabilities of these AI models”, as well as risks beyond frontier AI, including those of bias and privacy.
- “**Frontier AI**” is defined as highly capable foundation generative AI models that could possess dangerous capabilities that can pose severe risks to public safety.

## Topic 51. GLOBAL PARTNERSHIP ON ARTIFICIAL INTELLIGENCE (GPAI) SUMMIT

*Important for the subject: International Relations*

Modi inaugurated the GPAI summit

**India is hosting the Global Partnership on Artificial Intelligence (GPAI) Summit** in New Delhi, where Prime Minister Narendra Modi inaugurated the event.

- The **summit aims to reach a consensus among the 29 member countries** on a **declaration document** outlining the **proper use of AI**, establishing guardrails for the technology, and **promoting its democratization**.
- Prime Minister Narendra Modi, **addressing the summit, emphasized the dual potential of AI as a significant development tool** for the 21st century but also as a potential factor in its destruction.
- He called for a **global framework to establish guardrails** for responsible AI use and **stressed the need for extreme caution** in deploying AI, citing its impact on current and future generations.
- PM Modi **raised concerns about deep fakes, cybersecurity, and cyber-terrorism** resulting from **unchecked AI development**, proposing an audit mechanism to categorize AI tools based on their capabilities.
- He highlighted the **importance of ethical AI use and mentioned India's negotiations with GPAI member countries** to achieve consensus on a declaration document outlining proper AI use, technology guardrails, and democratization.
- PM Modi **announced India's upcoming AI mission** to provide AI compute power for startups and innovators, promoting **AI applications in sectors like agriculture, health, and education**.
- The mission **aims to extend AI skills to Tier 2 and Tier 3 cities**, with ethical AI use as the guiding principle for the global framework.
- PM Modi emphasized that **AI's power lies in connecting people, and its responsible use can drive economic growth, equality, and social justice**. The Theme of GPAI is **Advancing Responsible AI in Public-Sector Applications**

**What is Global Partnership on AI summit:**

- The Global Partnership on Artificial Intelligence (GPAI) is a **multi-stakeholder initiative** which **aims to bridge the gap between theory and practice on AI by supporting cutting-edge research** and applied activities on AI-related priorities.
- Its **establishment was announced** during the **2018 G7 Summit** by Canadian PM Justin Trudeau and French President Emmanuel Macron. GPAI was **officially**



**launched on June 15, 2020**

- The Global Partnership in Artificial Intelligence is **described as the ‘fruition of an idea developed within the G7.’**
- At present, GPAI has **twenty-nine member states** i.e **Australia, Belgium, Brazil, Canada, Czech Republic, Denmark, France, Germany, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Poland, the Republic of Korea (South Korea), Singapore, Slovenia, Spain, Sweden, the United Kingdom, the United States, and the European Union (EU).**

**India joined the GPAI in 2020 as a founding member.**

- Its **Secretariat** is hosted at the **OECD.**
- Currently, India has assumed the **presidency Global Partnership on Artificial Intelligence (GPAI) for 2022-23**
- The **2022 GPAI Summit took place in Tokyo, Japan**

**What is the composition and structure of GPAI**

- GPAI has a **Council and a Steering Committee**, supported by a **Secretariat hosted by the OECD**, and **two Centers of Expertise:**
- one in **Montreal (CEIMIA, the International Centre of Expertise in Montreal for the Advancement of Artificial Intelligence)** and one in **Paris (at INRIA, the French National Institute for Research in Digital Science and Technology).**
- These Centers of Expertise will facilitate **GPAI’s four working groups** and their research and practical projects, across various sectors and disciplines. The working groups will **initially focus on four themes:**

**Working Group on Responsible AI (Montreal)**

**Working Group on Data Governance (Montreal)**

**Working Group on the Future of Work (Paris)**

**Working Group on Innovation and Commercialization (Paris)**

**What is the Legal Framework Related to AI in India:**

- In **India**, there are **currently no specific legal regulations** governing the use of **deep fake technology**. However, **existing laws can be applied to address the misuse of this technology**, covering aspects such as **Copyright Violation, Defamation, and cybercrimes.**
- For instance, the **Indian Penal Code**, which addresses **defamation**, and the **Information Technology Act of 2000**, which pertains to **sexually explicit material**, could **potentially be used** to combat malicious deepfake usage.

- **The Representation of the People Act of 1951 contains provisions that prohibit the creation or dissemination of false or deceptive information about candidates or political parties during election periods.**
- **Additionally, the Election Commission of India has established regulations requiring registered political parties and candidates to obtain prior approval for all political advertisements on electronic media.**
- **Despite these measures, they may still be inadequate in fully addressing the multifaceted challenges arising from AI algorithms, including the potential risks associated with deep fake content.**

#### **What are the Recent Global Efforts to Regulate AI:**

- **The world's inaugural AI Safety Summit, hosted at Bletchley Park in the UK, saw 28 major nations, including the US, China, Japan, the UK, France, India, and the European Union, unite in signing a declaration emphasizing the necessity for global action to address the potential perils of AI.**
- **The declaration underscores the recognition of significant risks stemming from potential deliberate misuse and unintended control challenges in advanced AI, particularly in domains such as cyber security, biotechnology, and the spread of disinformation.**
- **In response to these concerns, the US President issued an executive order aiming to fortify defenses against AI-related threats and exercise regulatory oversight over safety standards applied by companies in the assessment of generative AI systems like ChatGPT and Google Bard.**
- **During the G20 Leaders' Summit held in New Delhi, the Indian Prime Minister advocated for the creation of a global framework governing the development of "ethical" AI tools.**
- **This shift in New Delhi's stance signifies a transition from a position of non-interference in AI regulation to a proactive approach, involving the formulation of regulations grounded in a "risk-based, user-harm" perspective.**

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#### **Topic 52. RAJYA SABHA PASSES BILL TO REGULATE APPOINTMENT OF CEC AND ECS**

##### ***Important for the subject: International Relations***

The Rajya Sabha passed a bill that revises the process for appointing the Chief Election Commissioner (CEC) and Election Commissioners (ECs), replacing the Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991.

#### **Key Features of Election Commission Appointments Bill**

- **Appointment Process:** The President will appoint the CEC and ECs based on recommendations from a Selection Committee comprising the Prime Minister, a Union Cabinet Minister, and the Leader of Opposition in Lok Sabha.
- **Search Committee Role:** A Search Committee led by the Cabinet Secretary will suggest candidates to the Selection Committee.
- **Eligibility Criteria:** Candidates must have held a post equivalent to the Secretary to the central government.
- **Salary and Conditions:** The CEC and ECs will receive salaries and benefits equivalent to the Cabinet Secretary, a change from the previous equivalence to a Supreme Court judge.

### Constitutional Aspect

- **Constitutional Provisions:** Article 324 of the Constitution allows the President to appoint the CEC and ECs but does not specify the appointment process.
- **Supreme Court Directive:** In March 2023, the Supreme Court mandated a selection process involving the Prime Minister, Leader of Opposition, and the Chief Justice of India, until Parliament legislates otherwise.

### Key Issues and Analysis

- **Independence Concerns:** The government-dominated Selection Committee could impact the Election Commission's independence.
- **Validity despite Vacancies:** The Selection Committee's recommendations will be valid even with vacancies, potentially leading to government control in appointments.
- **Salary and Status:** Aligning the CEC and ECs' salary with the Cabinet Secretary, determined by the government, may affect their independence compared to a salary fixed by Parliament.
- **Exclusion of Candidates:** Limiting eligibility to senior bureaucrats may exclude other qualified individuals, particularly those with judicial experience.
- **International Practices:** The appointment processes for election commissions in countries like South Africa, the UK, the US, and Canada vary, with some involving judicial members or parliamentary approval.

### Concerns over Independence and Selection Process

- **Government Influence:** The Bill's provisions for a government-majority Selection Committee and the acceptance of recommendations despite vacancies could lead to executive dominance in appointments.
- **Salary and Removal Parity:** The change in salary equivalence and the lack of parity in

the removal process of the CEC and ECs compared to Supreme Court judges raise concerns about the Commission's independence.

### Goswami Committee (1990) Recommendations

- **Background:** The Goswami Committee on Electoral Reforms (1990) made significant recommendations regarding the Election Commission's functioning.
- **Appointment Process:** The Committee suggested that the CEC should be appointed by the President in consultation with the Chief Justice and the Leader of Opposition in Lok Sabha. For ECs, it recommended a similar process but included the CEC in the consultative process.
- **Importance of Independence:** The Committee emphasized the need for the Election Commission's independence from executive influence to ensure free and fair elections.

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### Topic 53. 75TH ANNIVERSARY OF THE UNIVERSAL DECLARATION OF HUMAN RIGHTS

*Important for the subject: International Relations*

75th anniversary of the Universal Declaration of Human Rights.

On **December 10, 2023**, the **Universal Declaration of Human Rights (UDHR)** celebrated its **75th anniversary**.

- The UDHR stands as a **pivotal document, safeguarding human rights and fundamental freedoms** for every individual.

#### What is the Universal Declaration of Human Rights:

- The **Universal Declaration of Human Rights (UDHR)** is a **concise document comprising a preamble and 30 articles** outlining fundamental rights and freedoms.
- **Article 1** emphasizes the **inherent freedom and equality** of all human beings, while **Article 2** asserts that **everyone is entitled to these rights without discrimination**.
- The declaration further addresses the **rights to life, liberty, and security of person, prohibiting slavery, torture, and degrading treatment**.
- It emphasizes **equality before the law, the right to a fair trial, and the entitlement to seek asylum from persecution** in other countries.
- The **UDHR also safeguards freedom of religion, opinion, expression, peaceful assembly, and the right to education**.
- The **UDHR, together with the International Covenant on Civil and Political Rights and its two Optional Protocols, and the International Covenant on Economic, Social and Cultural Rights (ICESCR)**, form the so – called **International Bill of**

### Human Rights.

- It is **not a legally binding treaty**

#### Why and how was it drawn up:

- The **Universal Declaration of Human Rights** emerged from the **collective determination of political leaders**, driven by the “**never again**” sentiment **following two world wars and the Holocaust**.
- Complementing the **U.N. Charter, the foundational document** of the United Nations, the **UDHR was conceived** as a “road map” to **secure the rights of every individual**.
- **Eleanor Roosevelt**, widow of U.S. President Franklin D. Roosevelt, **chaired the drafting committee, composed of members from eight countries**, selected for geographical representation.
- With the **participation of over 50 U.N. member countries**, the **General Assembly approved the declaration on Dec. 10, 1948**, with unanimous support except for eight abstentions.
- Despite the **prevalence of colonial rule** at that time, the **drafting process, according to Amnesty International**, avoided dominance by powerful nations.
- Smaller nations **played a strategic role, ensuring the final text pledged** human rights for all, and **female delegates championed equal rights** for men and women.

#### What did it achieve:

- While **not legally binding** as a treaty, the **Universal Declaration of Human Rights (UDHR)** has **profoundly influenced** many countries’ **legal frameworks, serving as the foundation for international human rights law**.
- It has **inspired over 70 global and regional human rights treaties** and played a **pivotal role in movements such as decolonization, anti-apartheid, and fights against gender discrimination, LGBTQ+ rights, and racism**.
- **The Vienna Declaration of 1993 is built upon the principles of the 1948 declaration**.

### Topic 54. ITALY LEAVES CHINA BRI

*Important for the subject: International Relations*

Italy leaves China BRI

Italy has **officially withdrawn from China’s Belt and Road infrastructure** initiative, becoming the **first G7 nation to do so more** than four years after initially joining.

- The decision, **communicated to Beijing three days prior**, was confirmed by an Italian

government source, although no official communication has been released by either side.

- **Prime Minister Giorgia Meloni**, who has been **critical of the initiative**, expressed the **decision was made to “keep channels of political dialogue open.”**
- Italy’s **participation in the project**, seen by many as a means for **Beijing to exert political influence**, was set to automatically renew in March 2024 **unless Italy opted out by the end of the year.**
- The move is **in line with Meloni’s stance** against the **project**, citing **limited benefits to Rome** and concerns about **provoking Beijing.**

### What is China’s Belt and Road Initiative

- The **Belt and Road Initiative (BRI)**, also known as the **One Belt, One Road (OBOR)** Initiative, is a **massive infrastructure and economic development** project launched by the **People’s Republic of China in 2013.**
- The initiative **aims to promote economic cooperation** and **connectivity among countries primarily in Asia, Europe, and Africa**, through the construction of infrastructure networks, **including roads, railways, ports, and pipelines, as well as the development of trade and investment corridors.**

### What are the Components of BRI

- The Belt and Road Initiative **consists of two main components:**
- **The Silk Road Economic Belt:** This land-based component **seeks to connect China to Europe through a network of roads and railways** that traverse Central Asia and the Middle East.
- **The 21st Century Maritime Silk Road:** This sea-based component **aims to link China to Southeast Asia, South Asia, Africa, and Europe through a network of ports and shipping routes.**

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### Topic 55. ARTICLE 99 OF UN CHARTER

#### *Important for the subject: International Relations*

Article 99 of the UN Charter, invoked for the first time in decades as Israel attacks Gaza.

- **United Nations Secretary-General Antonio Guterres** has called for a **humanitarian ceasefire in the Gaza Strip** amid ongoing Israeli military attacks, **especially in the southern region.**
- Guterres **invoked Article 99** of the **UN Charter** and addressed a **letter to the President of the UN Security Council**, expressing concerns about the **imminent collapse** of the humanitarian system in Gaza.
- He urged the Council to take **action to prevent a humanitarian catastrophe** and

requested the declaration of a ceasefire.

- The **UN Security Council**, consisting of **permanent and non-permanent members**, plays a **crucial role in addressing global security issues**. As of December 2023, Ecuador holds the presidency of the Security Council.

#### What is Article 99 of the UN Charter:

- The UN Charter serves as the **foundational document** of the **United Nations**, granting the **organization** the authority to address various global issues. Although **member states are legally bound by the Charter**, practical enforcement mechanisms are limited.
- **Article 99 of the Charter** provides the **Secretary-General with discretionary power** to bring to the **Security Council's attention** any matter deemed a **threat to international peace and security**.
- This provision **emphasizes the need for the Secretary-General to exercise political judgment, tact, and integrity**.
- According to the UN, **if the Secretary-General invokes Article 99**, the **President of the Security Council is obligated to convene a Council meeting to address the matter**.

#### When has Article 99 been invoked in the past:

- **Article 99 of the UN Charter**, which grants the **Secretary-General the authority to bring matters threatening international peace and security** to the attention of the Security Council, has been seldom utilized.
- Historical instances include its **invocation during the upheaval in the Republic of the Congo in 1960 following the end of Belgium's colonial rule**, as well as a **complaint by Tunisia in 1961 against France's military actions**.
- The **current Secretary-General, Antonio Guterres**, is expected to **address the Security Council on the situation in Gaza and advocate for a humanitarian ceasefire this week**.
- UN spokesman **Stephane Dujarric** described the use of **Article 99 as a "very dramatic constitutional move" by the Secretary-General**.

#### How has Guterres invoked Article 99:

- UN Secretary-General Antonio Guterres **invoked Article 99 of the UN Charter in a letter to the UNSC President**, expressing concern about the escalating threats to international peace and security in the Israel-Palestine conflict.
- Guterres **highlighted the severe human suffering and trauma** in the region, condemned recent attacks, and called for a humanitarian ceasefire.
- The **UAE presented a draft resolution to the UNSC based on Guterres' letter**, demanding an **immediate ceasefire**, but achieving unanimous support, especially from permanent members like the US and Britain who back Israel's actions, remains

uncertain.

- The resolution **requires at least nine votes in favor and no vetoes from the five permanent members**. The vote is expected after Guterres briefs the council on Gaza.

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### **Topic 56. WHAT IS THE CONTROVERSY OVER GERMANY'S DEBT BRAKE RULE?**

#### ***Important for the subject: International Relations***

Germany's constitutional court on November 15 ruled unlawful a government move to reallocate €60 billion, unused from the sums initially earmarked for the pandemic emergency, to a "climate and transformation fund" (KTF).

#### **What is the Debt Brake Rule?**

- The **debt brake rule caps government borrowing and restricts the federal government's fiscal deficit to 0.35% of GDP, while prohibiting deficit spending by Germany's 16 regions**.
- This rule was incorporated into German law in 2009 by a coalition, mirroring the EU's Stability and Growth Pact and the 2012 Fiscal Compact Treaty.

#### **Challenge and Its Legal Implications**

- **Opposition's Argument:** It argued that climate change and energy transition investments, being long-term, shouldn't be funded by the debt brake's emergency exemption, which was specific to COVID-19 relief.
- **Government's Defense:** The government contended that the reallocated funds addressed economic consequences of the pandemic by linking investment shortfalls to COVID-19's economic impact

#### **Economic Performance Of Germany Since 2009**

- **Pandemic Response:** In 2020, the debt brake rule was suspended for pandemic-related borrowing, with plans for reinstatement.
- **Mixed Outcomes:** Germany experienced growth and budget surpluses in the last decade, benefiting from low-interest policies of the ECB.
- **Zero-Deficit Budget:** The government achieved a zero-deficit budget, promoting it as an ideal approach for the EU during a sovereign debt crisis.

#### **Criticisms:**

- A cooling economy highlighted under-investment in infrastructure. Critics urged for expansionary fiscal measures, while others favored higher taxation. Chancellor Angela Merkel emphasized the need to avoid burdening the younger generation with debt.



## Topic 57. INDIA'S EXTREME RAINFALL 'CORRIDOR'

*Important for the subject: Geography*

The **Indian monsoon** has well-known features, such as the **onset of the monsoon, the withdrawal, the active and break periods, and the low-pressure systems (or monsoon depressions)**.

Every aspect of the monsoon has been affected by **global warming**.

**Where does extreme rain occur?**

- **India's monsoon forecasts** rely heavily on its relation to the **El Niño** and the **La Niña** phenomena, although this relation holds only about **60%** of the time.
- A new study has found that a remarkable **stationary element exists in terms of where synchronised extreme rainfall events occur**.
- The **large-scale extreme rainfall events** are actually **simultaneous** or **near-simultaneous heavy rain episodes** that are strewn across a 'highway' that extends from parts of **West Bengal** and **Odisha** to parts of **Gujarat** and **Rajasthan**.
- This corridor has **remained unchanged** from **1901** to **2019**.

**What does this mean for the monsoon's stability?**

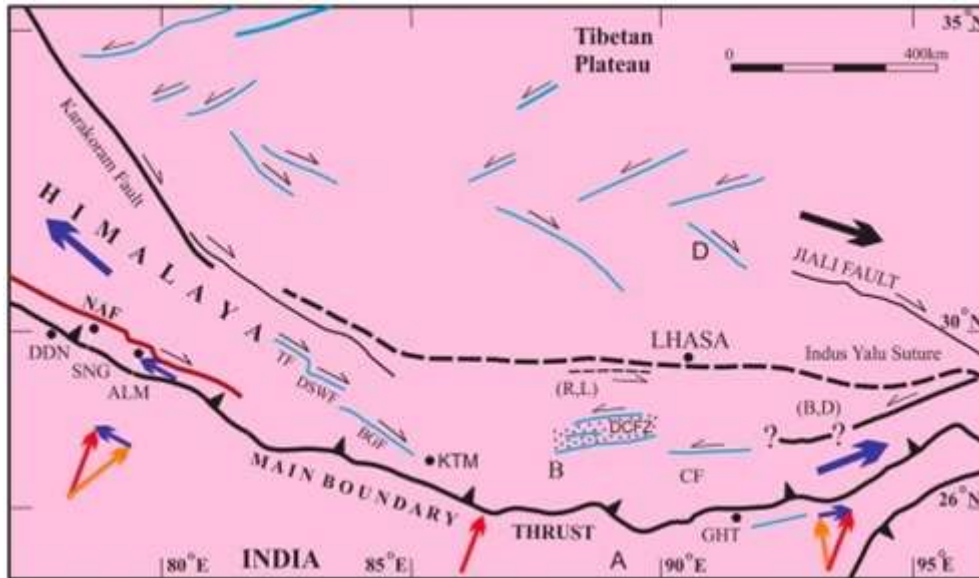
- Traditional statistical methods tend to miss the complex relations between multiple nodes of rainfall centres.
- This study shows that the most active nodes have followed this 'highway' for more than a century.
- The link lengths between nodes, or the scales of synchronicity, have remained nearly constant, at an average value of about 200 km.

**What do the findings mean for forecasts?**

- Researchers had earlier considered that stationary elements no longer exist in climate systems because of global warming. But the **Indian monsoon** is able to **synchronise heavy rain events** as well as **stick to the 'highway'** for such a long time.
- One of the main factors for this synchronised and stable heavy rainfalls is the **range of mountains running along the west coast and across Central India**.
- This finding will help in better predictions and forecasts of heavy rainfall. It will also help in **reducing risk** in the fields of agriculture, water, energy, transportation, health, etc.

**Topic 58. HAVE EARTHQUAKES REALLY INCREASED IN INDIA DUE TO ACTIVATION OF ALMORA FAULT?**

*Important for the subject: Geography*



There has been an increase in the number of earthquakes in January to November, 2023 compared to the last three years and it was mainly attributed to the **activation of the Almora fault** in Western Nepal.

- However, various geologists reject the theory that Almora fault is active.
- None of the faults in the **Himalayas** — Main Boundary Thrust, North Almora Thrust or South Almora Thrust — are **active**.

**Thrust fault:**

- A thrust fault is a **break in the Earth's crust**. There are **two thrusts** in **Kumaon, Uttarakhand**: One is the **South Almora Thrust** and the other is the **North Almora Thrust**.

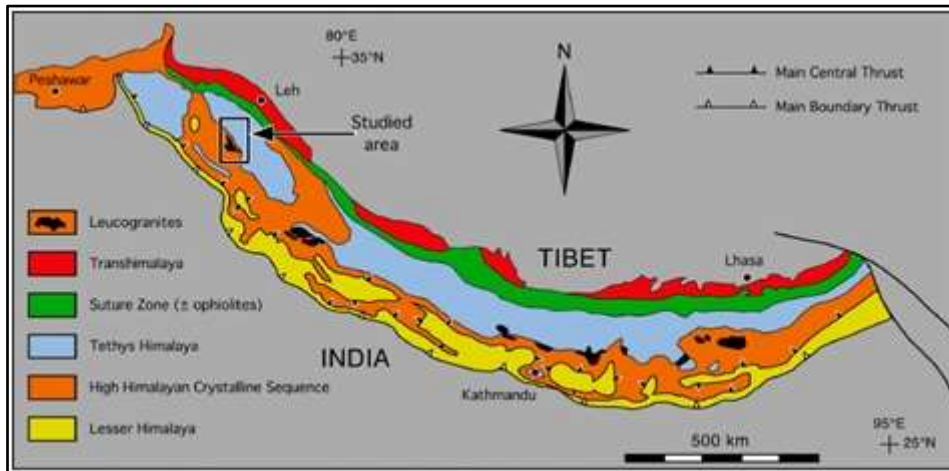
**Almora fault:**

- The **Almora fault** is a **high angle west-northwest-east-southeast to northwest-southeast trending tectonic plane** that separates the **Garhwal group of inner lesser Himalayas** in the **north** from **Jaunsar and Dudatoli Groups of outer lesser Himalayas** in the **south**.
- This **Almora Fault** extends to **western Nepal**. The Almora Thrust is not deep and does not reach the mantle.

**Main Himalayan Thrust:**

- The **Main Himalayan Thrust (MHT)** is a **décollement** under the **Himalaya Range**.

- This thrust fault follows a **NW-SE strike**, reminiscent of an **arc**, and **gently dips about 10 degrees** towards the **north**, beneath the region. It is the **largest active continental megathrust** fault in the world.



### Topic 59. GOVERNMENT DIRECTS SUGAR MILLS TO NOT USE SUGARCANE JUICE FOR ETHANOL PRODUCTION TO KEEP PRICES IN CHECK

#### *Important for the subject: Geography*

The Centre banned the use of ‘**sugarcane juice and sugar syrup**’ for **ethanol production** in the **2023-24** supply year, in order to **maintain adequate sugar availability** for **domestic consumption** and to **keep prices under check**.

- But, the government has allowed use of ‘**B-molasses**’ for ethanol production in 2023-24. The directive was issued as per the **clause 4 and 5** of the **Sugar (Control) Order 1966**.
- The decision comes in the backdrop of **estimated fall in sugar production** in **2023-24** marketing year.
- **Indian Sugar Mills Association (ISMA)** has projected a **9 per cent** fall in **gross sugar production** at **337 lakh tonnes** for the **2023-24** marketing year.
- India exported **61 lakh tonnes** of sugar during the **2022-23** marketing year, as against a record **112 lakh tonnes** in the previous year.
- To contain **food inflation**, the Central government has also **banned exports of wheat and broken rice**. It has also **fixed minimum export price (MEP)** for **basmati rice**.

#### **Ethanol:**

- **Ethanol**, also known as **ethyl alcohol**, is a **biofuel** produced from various sources such as **sugarcane, corn, rice, wheat, and biomass**.
- The production process involves the **fermentation of sugars** by **yeasts** or

via **petrochemical processes** such as **ethylene hydration**. Ethanol is **99.9% pure alcohol** that can be **blended with petrol** to create a **cleaner fuel alternative**.

- Apart from being a **fuel additive**, ethanol production yields valuable **byproducts** like **Distillers' Dried Grain with Solubles**, and **Potash from Incineration Boiler Ash** that find applications across various industries.

#### **Ethanol production in India:**

- **Ethanol production in India** was mainly based on '**C-heavy**' **molasses**, with a **sugar content** of **40-45%**, yielding **220–225 liters** of ethanol per tonne.
- **India** explored **direct sugarcane juice** for ethanol production, **increasing yield** and **efficiency**.
- The country **diversified its feedstocks** by including **rice, damaged grains, maize, jowar, bajra, and millets**.
- Ethanol yields from **grains** are **higher** compared to **molasses**, with **rice** producing **450-480 liters** and other grains **380-460 liters** per tonne.
- Sugar mills diversified to use rice, damaged grains, maize, and millet as feedstocks. Leading sugar companies installed distilleries that can operate on multiple feedstocks throughout the year.

#### **Types of Molasses:**

- **A Molasses (First Molasses):** An intermediate by-product from initial sugar crystal extraction, containing **80-85% dry matter (DM)**. Should be inverted to prevent crystallization if stored.
- **B Molasses (Second Molasses):** Similar DM content as A molasses but with **less sugar** and **no spontaneous crystallization**.
- **C Molasses (Final Molasses, Blackstrap Molasses, Treacle):** The end by-product of sugar processing, containing significant amounts of **sucrose** (about 32 to 42%). It does **not crystallize** and is used as a commercial feed ingredient in liquid or dried form.

#### **Government Initiatives to Promote Ethanol Blending in India:**

- National Policy on Biofuels 2018
- E100 Pilot project
- Pradhan Mantri JI-VAN Yojana 2019
- Repurpose Used Cooking Oil (RUCO)

## Topic 60. AT 2826 KG, DRUG SEIZURE AT PORTS, IN COASTAL WATERS AT A NEW HIGH

*Important for the subject: Geography*

At least **2826 kg** of banned substances have been busted across **Indian ports and coastal waters**, so far in **2023**, according to the **Ministry of Ports, Shipping and Water ways**.

**Methamphetamine (crystal meth) accounted for 99% of these seizures.**

- **Methamphetamine (or crystal meth)** is a **man-made psychotropic substance** and comes in **blue crystal**. It affects the **central nervous system**.
- The manufacture, possession, transport, import, export, sale, purchase and use of crystal meth is **illegal** in India.
- Maximum seizures were from **Gujarat, Kerala and Andaman**, with the source nation being **Pakistan**. Highest single seizure was made from **Kochi**, followed by **Pagla Mundi** in **Little Andaman** and **Okha** in **Gujarat**.
- **Cocaine** was seized from **Kachchh port** in **Gujarat** which was sourced from **Ecuador**.
- **Heroin** was seized from **Kuchchh, Porbandar and Jakhau** in **Gujarat**, **Ernakulam and Thiruvananthapuram** in **Kerala**, **Tuticorin** in **Tamil Nadu**, **JNPT** in **Mumbai**, **Maharashtra** and **Adani Port** at **Mundra** in **Gujarat** and sourced from **Afghanistan, Pakistan, Iran and Panama**.

## Topic 61. G7 MOVE ON RUSSIAN ROUGHS RATTLES INDIA'S DIAMOND SECTOR

*Important for the subject: Geography*

**Rough diamond:**

It is a diamond that has **not been cut or processed**. They come in a **variety of naturally occurring shapes**, including **octahedral** (eight-sided bipyramid), **cubic**, and **triangular** (most commonly macles).

A **raw diamond** or **rough diamond** can also be a **type of diamond** that is **not fully developed** or can have **less brilliance**. **Extreme heat and pressure** beneath the ground make the **carbon atoms fuse in a specific structure**.

**Diamond production:**

- **Russia** is the **largest producer (42 million carats in 2022)** and **exporter of rough diamonds** in the world followed by **Botswana, Canada, DR Congo, South Africa, Angola, Zimbabwe, Namibia, Sierra Leone, Lesotho and Australia**.

- **African continent** contributes to 50% of **global production**.

#### **Diamond Exporter:**

- In **2022, India** was the **largest exporter of polished diamonds worldwide**, amounting to a total value of **23.9 billion U.S. dollars** compared to the nearly **18 billion U.S. dollars of diamonds exported by the United States** that year, ranked second, followed by the UAE, Hong Kong, Belgium, Israel, Botswana, Russia, South Africa, China and Angola.
- **India** imported a provisional **\$8.48 billion** worth of **rough diamonds** and exported **polished diamonds** worth **\$9.96 billion** from April through October 2023.
- **India** cuts **14** out of **15** of the **world's rough diamonds**. **India** exports diamond to the **USA (36%), Hong Kong** and **Japan** among others.

#### **Gem and Jewellery Export Promotion Council (GJEPC):**

- Established in **1966** by the **Ministry of Commerce and Industry (India)** Aim- to promote the Indian gem and jewellery industry and its products.
- **Headquarters** in **Mumbai** and **Regional Offices** in **New Delhi, Kolkata, Chennai, Surat** and **Jaipur**.
- It is the **apex body** for the **gems and jewellery industry of India** and represents almost 7,000 exporters.

### **Topic 62. CRUMBLING HILLS**

*Important for the subject: Geography*

#### **Mineral resources in Meghalaya:**

**Meghalaya**, a state in the northeast region of India, is **bound** to the **south** by the **Bangladeshi** divisions of **Mymensingh** and **Sylhet**, to the **west** by the **Bangladeshi** division of **Rangpur**, and to the **north** and **east** by **India's State of Assam**.

**Meghalaya** has an abundance of **coal** and **limestone**.

- **Other minerals found in Meghalaya-** uranium, granite, kaolin, clay and glass sand.
- About **9%** of the **country's total limestone reserves** are distributed across the State.
- **Limestone mining** is carried out by **open cast method** both at **large–** and **small-scale**
- Used chiefly for manufacturing products such as **cement, lime** and **edible lime** and exported to **Bangladesh**

#### **Mineral distribution across Meghalaya:**

- **Coal-** East and South Garo Hills, East and West Khasi Hills and Jaintia Hills district.
- **Limestone-** Jaintia Hills in the East, Garo Hills in the West, Cherrapunjee, Mawlong, Ichamati, Shella, and Komorrah in the **East Khasi Hills district**.
- **Uranium:** Domiasiat and Porkut-Nongjri around Wahkynshi area in the West Khasi Hills District
- **Granite:** East Khasi Hills, West Khasi hills and East Garo hill district.
- **Kaolin (China clay):** Mawphlang, Smit and Laitlyngkot in the East Khasi Hills District; Thandlaskein, Shangpung, Mulieh and Mynsngat in the Jaintia Hills District; and Darugiri in the East Garo Hills District.
- **Glass sand:** Laitryngew, Umstew and Kreit in the **East Khasi Hills** and Tura in the **West Garo Hills**

#### Other minerals:

- Quartz occurs almost in all districts in the Northern part of the State.
- Feldspar and iron ore are reported in the Ri-Bhoi and West Khasi Hills Districts; and Bauxite and rock phosphate are found in the Jaintia Hills District.

#### Challenges in mining in Meghalaya:

- Uncontrolled coal mining and illegal limestone mining
- Roadside dumping of coal is a major source of pollution
- Rat hole mining (banned by NGT in 2014)
- **Environmental implications-** loss of forest cover, pollution of water, soil and air, depletion of flora and fauna, reduction in biodiversity, erosion of soil and instability of rock masses, changes in landscape and degradation of arable land.

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### Topic 63. WHAT WAS KARAN SINGH PROCLAMATION OF 1949

#### *Important for the subject: History*

SC to uphold abrogation of Article 370 citing Karan Singh proclamation of 1949

#### What was the proclamation by Karan Singh:

- Karan Singh's **proclamation declared the repeal** of the **Government of India Act, 1935**, which previously **governed Jammu and Kashmir's** constitutional relationship with the **Dominion of India**.
- It stated that the **upcoming Constitution of India**, as **applicable to J&K**, would govern the **state's constitutional relationship** with the **Union of India**.

- The proclamation emphasized the enforcement of the Indian Constitution in J&K by Karan Singh, his heirs, and successors, superseding all inconsistent constitutional provisions currently in force in the state.

**Why did Karan Singh make the proclamation:**

- **Karan Singh**, responding to the Supreme Court's judgment, mentioned that the proclamation in 1949 was necessary to eliminate ambiguity surrounding Jammu and Kashmir's status.
- He explained that despite Hari Singh signing the Instrument of Accession (IoA), the state retained a level of autonomy, distinct from the full integration seen in other princely states.
- The court's decision aligns with the government's stance that the 1949 proclamation acknowledged the supremacy of the Indian Constitution and surrendered sovereignty to "We the people of India."

**What did the Supreme Court say:**

- The Supreme Court clarified that Jammu and Kashmir did not retain an element of sovereignty upon joining the Union of India.
- The court pointed to a proclamation issued by Yuvraj Karan Singh on November 25, 1949, stating that the Constitution of India would supersede and abrogate all other inconsistent constitutional provisions in the state.
- This proclamation was viewed as a full and final surrender of sovereignty by Jammu and Kashmir to India and its people, rendering paragraph 8 of the Instrument of Accession legally inconsequential.

### **Topic 64. HOUSE PANEL RECOMMEND PRAYER AT PROTECTED SITE OF RELIGIOUS SIGNIFICANCE**

*Important for the subject History*

House Panel recommend Prayer at protected site of religious significance

A parliamentary panel in India has recommended exploring the possibility of allowing puja (worship) and religious activities at Archaeological Survey of India (ASI) protected monuments that have religious significance.

This could open the door for rituals at dilapidated temples, dargahs, churches, and other religious sites. The ASI currently permits worship at monuments where traditions were ongoing at the time of custody.

- The Ministry of Culture will explore the feasibility, but the policy generally prohibits reviving worship if it wasn't present during ASI protection or has been abandoned for a



long time.

#### **Why prayers are held at some protected sites:**

- According to **Archaeological Survey of India** rules, **prayers are allowed at protected sites only if they were “functioning places of worship”** at the time the ASI took charge of them.
- **Some well-known examples** include the **Taj Mahal**, where **namaz is held every Friday**, and other living monuments such as **three mosques in Kannauj**, the **Roman Catholic Church in Meerut**, **Nila Mosque in Delhi’s Hauz Khas Village**, and various **Buddhist monasteries in Ladakh**.
- However, **many protected monuments** also witness **“unauthorized worship,”** as per **ASI records**, including **Lal Gumbad**, **Sultan Ghari’s tomb**, and **Ferozeshah Kotla**, all in **Delhi**.

#### **Some facts about the Archaeological Survey of India (ASI):**

- **ASI is the premier organization** for **archaeological research**, **scientific analysis**, **excavation of archaeological sites**, and **conservation and preservation of protected monuments**.
- It is an **attached office under the Department of Culture (Ministry of Culture)**. **ASI was founded in 1861 by Alexander Cunningham** who became its **first Director-General**.

#### **What are the Regulation and protection of monuments:**

- The **ASI regulates construction around the protected monuments** through the **Ancient Monuments and Archaeological Sites and Remains (Amendment) Act, 2010**.
- The **Act prohibits the construction of 100 metres** around a protected monument. **The next 300-metre radius is regulated too**.
- Further amendments have been **proposed which seek to do away with the ban on construction within 100 metres** of a **ASI-protected monument** and regulate **construction within 100-200 metres**, under the Act that protects monuments and sites over 100 years old.
- This is expected to **give more powers to the ASI on the encroachments**.

#### **What is a National Monument**

- ‘Ancient Monument’ is **defined under the Ancient Monument and Archaeological Sites and Remains Act, 1958**
- The Act **defines Ancient Monument as any structure or monument or any cave, rock sculpture, an inscription that is of historical, or archaeological interest**.
- Further, **Ancient Monument has to be in existence for not less than 100 years**.

**Maintained by:** The Central Government is authorised to maintain, protect and promote Monuments of National Importance.

- **Nodal Authority:** Monuments of National Importance are designated by the Archaeological Survey of India (ASI).

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**Topic 65. IN GREATER NOIDA, A SHAH JAHAN-ERA TOMB WITH RED FORT LINK**

*Important for the subject: History*

Shah Jahan-era tomb with Red Fort link

Greater Noida, known for modern infrastructure, houses a historical gem—the tomb of **Ikram Khan**, a key figure in the construction of Delhi’s Red Fort during Shah Jahan’s era.

**Located in Kasna Park**, the tomb, built with red sandstone, remains in a state of decay.

- Historians connect the structure with the **Nihalde Sati Temple**, linked to the Rajasthani epic of Nihalde and Narsultan.
- Despite its **historical significance**, the tomb has suffered neglect, and there are calls for its restoration to preserve this unique monument dedicated to a craftsman.
- The **story of Nihalde and Narsultan adds a layer of folklore** to the site, emphasizing its cultural importance.

**What is the story of Nihalde and Narsultan:**

- The tomb of **Ikram Khan** in Greater Noida has **historical ties to the Rajasthani epic of Nihalde and Narsultan**.
- Legend has it that **Nihalde, spotted by Rajasthani prince Narsultan**, moved to his **kingdom at Keshavgarh** after their marriage.
- Following **Narsultan’s exile due to court scheming**, **Nihalde pledged Sati, promising to jump on a funeral pyre if he didn’t return by Teej**. Unfortunately, **Narsultan arrived late**, and in her memory, **he built the Nihalde Sati Temple**, adding **cultural significance** to the historical site.

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**Topic 66. WHAT DOES A SPECIAL PACKAGE MEAN FOR PVTGS?**

*Important for the subject Schemes*

On December 6, the Tribal Affairs Ministry told the Rajya Sabha that the **population of Particularly Vulnerable Tribal Groups (PVTGs) was not in decline**, citing information provided by the **Office of the Registrar General and Census**

### Commissioner of India (ORGI).

- This was in variance with the State Wise Census data provided by the Ministry to a **Parliamentary panel last year showing that the numbers of these tribal groups fell almost 40% in at least nine States and Union Territories in the first decade of this century.**

### About Scheduled Tribes in India

- **Scheduled Tribe (ST) communities:** India's 705 Scheduled Tribe (ST) communities — making up 8.6% of the country's population — live in 26 States and six Union Territories.
- **Scheduled Areas:** Scheduled Areas cover 11.3% of India's land area, and have been notified in 10 States: Andhra Pradesh, Telangana, Odisha, Jharkhand, Chhattisgarh, Madhya Pradesh, Rajasthan, Gujarat, Maharashtra, and Himachal Pradesh.
- **PVTGS:** India has a Scheduled Tribe population of 10.45 crore, according to the 2011 census. Of the total, **75 communities in 18 states** and the Union Territory of Andaman and Nicobar Islands have been categorised as PVTGs.
- On the recommendation of the **Dhebar Commission**, the Central government began to identify the most vulnerable tribal groups as a separate category in 1975.
- These PVTGs continue to face vulnerability in social, economic and educational fields. The Pradhan Mantri PVTG Development Mission to improve the socio-economic conditions of these groups was announced in the Union Budget for 2023-24.

### Various Constitutional Provisions

- **Article 244:** Pertaining to the administration of Scheduled and Tribal Areas, Article 244 is the single most important constitutional provision for STs.
- **Article 244(1)** provides for the application of Fifth Schedule provisions to Scheduled Areas notified in any State other than Assam, Meghalaya, Tripura, and Mizoram.
- The **Sixth Schedule** applies to these States as per Article 244(2).
- The **Fifth Schedule under Article 244(1) of the Constitution** defines Scheduled Areas. On the other hand, the Sixth Schedule under Article 244 (2) of the Constitution defines Tribal areas.

### PM JANMAN

- The Union Cabinet chaired by the Prime Minister has approved Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (**PM JANMAN**) to **uplift the Particularly Vulnerable Tribal Groups (PVTGs).**

- The scheme will have a total outlay of Rs.24, 104 crore, with the Centre and the States sharing the cost in a **ratio of 64:36**.
- The PM-JANMAN scheme is in line with the Budget announcement of 2023-24, in which the Finance Minister had proposed to launch a **Pradhan Mantri PVTG of Development Mission to improve the socio-economic conditions of the PVTGs**.
- The Mission will aim to provide basic amenities and services to all PVTG households and habitations, such as safe housing, clean drinking water and sanitation, improved access to education, health and nutrition, road and telecom connectivity, and sustainable livelihood opportunities.
- The Mission will be implemented in the next three years under the **Development Action Plan for the Scheduled Tribes (DAPST), with an allocation of Rs.15,000 crore**.
- **The PM-JANMAN scheme will focus on 11 critical interventions through 9 Ministries including the Ministry of Tribal Affairs. These interventions are:**
  - **Housing:** To provide safe and dignified housing to all PVTG households under Pradhan Mantri Awas Yojana-Gramin (PMAY-G).
  - **Drinking water and sanitation:** To ensure universal coverage of piped water supply and individual household toilets under Jal Jeevan Mission (JJM) and Swachh Bharat Mission-Gramin (SBM-G).
  - **Education:** To enhance access to quality education for PVTG children through residential schools, hostels, scholarships, bridge courses, e-learning platforms and special coaching under Samagra Shiksha Abhiyan (SSA) and other schemes.
  - **Health and nutrition:** To improve health outcomes and nutritional status of the PVTG population through dedicated mobile medical units, health camps, immunization drives, supplementary nutrition programmes, Anganwadi centres and other schemes.
  - **Road connectivity:** To connect all PVTG habitations with all-weather roads under Pradhan Mantri Gram Sadak Yojana (PMGSY).
  - **Telecom connectivity:** To provide mobile connectivity and internet access to all PVTG habitations under BharatNet and other schemes.
  - **Livelihood opportunities:** To promote sustainable livelihoods for PVTG households through skill development, self-help groups, micro-enterprises, value addition, market linkages and other schemes.
  - **Land rights:** To secure land rights and titles for PVTG households under the Forest Rights Act (FRA) and other laws.
  - **Social security:** To provide social protection and insurance to PVTG households under Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima

Yojana (PMSBY) and other schemes.

- **Cultural preservation:** To preserve and promote the rich cultural heritage and identity of PVTGs through documentation, dissemination, festivals, awards and other schemes.
- **Institutional support:** To strengthen the institutional mechanisms for planning, monitoring, evaluation and convergence of the PM-JANMAN scheme at various levels.