

# Current Affairs MONTHLY



CivilsTap Himachal

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By  
**CivilsTap Himachal**



## For HPAS & Other Competitive Exam in Himachal Pradesh

### Mains

+91 7814622609

[www.civilstaphimachal.com](http://www.civilstaphimachal.com)

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# GENERAL STUDIES 1.

## GEOGRAPHY

### HEAT DOME

#### Why in News?

- Several countries in Europe recorded their hottest January weather ever in 2023 with temperatures 10 to 20 degrees Celsius above average.
- These included **Poland, Denmark, the Czech Republic, the Netherlands, Belarus, Lithuania and Latvia.**
- Experts said that the **continent is experiencing an extremely warm spell** because of the **formation of a heat dome over the region.**
- In 2021, a heat dome formed over western Canada and the US, causing deadly **heat waves.**
- **Another heat dome settled over the US in September 2022** and raised temperatures to a new high.

#### What is a Heat Dome and Heat Wave?

##### Heat Dome:

- A **heat dome occurs when an area of high-pressure traps warm air over a region, just like a lid on a pot**, for an extended period of time.
- The **longer that air remains trapped, the more the sun works to heat the air**, producing warmer conditions with every passing day.
- Heat domes **generally stay for a few days but sometimes they can extend up to weeks**, which might cause deadly heat waves.
- Scientists suggest that **any region of high pressure, whether a heat dome or not, forces air to sink and once it reaches the ground, it gets compressed and becomes even warmer.**
- Moreover, **when air sinks, it gets drier and further raises the temperature of the area.**

##### Heat Domes and the Jet Stream:

- The heat dome's formation is **related to the behaviour of the jet stream.**
  - Jet streams are relatively narrow bands of strong wind in the upper levels of the atmosphere
- The **jet stream is believed to have a wave-like pattern** that keeps moving from north to south and then north again.
- **When these waves get bigger and elongated**, they move slowly and sometimes can become stationary.
- This is **when a high-pressure system gets stuck** and leads to the occurrence of a heat dome.
- **Although heat domes are likely to have always existed**, researchers say that **climate change** may be making them more intense and longer.
- They suggest with the rising temperatures, it is expected that the jet stream will become more wavy and will have larger deviations, causing more frequent extreme heat events.

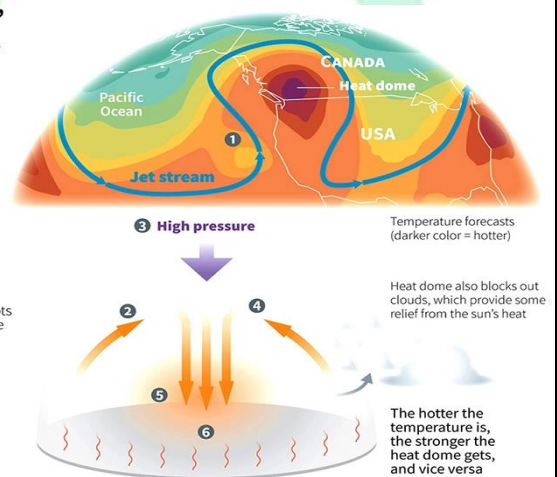
##### What are the Causes of Formation of Heat Dome?

- **Change in Ocean Temperature:** The **phenomenon begins when there is a strong change (or gradient) in ocean temperatures.**
  - In the process known as convection, the **gradient causes more warm air, heated by the ocean surface, to rise over the ocean surface.**

#### The 'heat dome'

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

- 1 In summer, the **jet stream** (which moves the air) shifts northward
- 2 **Hot and stagnant air expands upwards**
- 3 Strong and **high-pressure** atmospheric conditions combine with influences from La Nina act like a dome or cap
- 4 In a process known as **convection**, hot air attempts to escape but high pressure pushes it back down
- 5 Under the dome, the air sinks and **compresses**, releasing more heat
- 6 As winds move the hot air east, the jet stream traps the air where it sinks, resulting in **heat waves**



- As prevailing winds move the hot air east, the northern shifts of the jet stream trap the air and move it toward land, where it sinks, resulting in heat waves.
- **Change in Atmospheric Pressure:** Heat waves **begin when high pressure in the atmosphere moves in and pushes warm air toward the ground.** This effect is fueled by heat rising from the ocean, creating an amplification loop.
  - The high-pressure system pressing down on the ground expands vertically, forcing other weather systems to change course.
    - It even minimizes wind and cloud cover, making the air more stifling.
    - This is also why a heat wave parks itself over an area for several days or longer.
- **Climate Change:** The rising temperatures lead to hotter weather. Heat waves have been a regular phenomenon on land.
  - However, **global warming has caused them to be hotter** with a longer duration and an increased frequency.
  - Scientists studying the **climate tend to agree that the heat waves occurring today are more likely to be a result of climate change** for which humans are responsible.

## BHOPAL GAS LEAK CASE

### Context

- The Union of India calls the Bhopal gas leak tragedy the world's largest industrial disaster. The government demanded more compensation in its curative petition. Thirty-nine years after the incident, a Constitution Bench of the Supreme Court led by Justice S. K. Kaul has reserved its judgment on a curative petition filed by the Centre in November 2010 to enhance the \$470 million (about ₹725 crore at the then exchange rate) compensation fixed in a 1989 settlement reached with Union Carbide Corporation (UCC), now a wholly owned subsidiary of Dow Chemicals, with the imprimatur of the apex court. The government has sought an additional amount of ₹675.96 crore in compensation from the pesticide company. The UCC has refused to pay a "farthing more". The court made it clear that it would not "try" the curative petition like an ordinary suit and reopen the settlement.

### Bhopal Gas Tragedy (1984):

- Methyl Isocyanate (MIC) leaked from the pesticide plant of Union Carbide (now Dow Chemicals), an MNC, in Madhya Pradesh capital Bhopal.
- It is estimated that about 40 tonnes of gas and other chemicals leaked from the Union Carbide factory.
- Methyl isocyanate: It is an extremely toxic gas and if its concentration in the air touches 21ppm (parts per million), it can cause death within minutes of inhaling the gas.
- It is one of the worst chemical disasters globally and still continues to have its ill effects on the people of the affected areas.
- **Public Liability Insurance Act (1991):**
  - Making it mandatory for industries to get insurance,
  - The premium for this insurance would contribute to an Environment Relief Fund to provide compensation to victims of a Bhopal-like disaster.

### Chemical Disaster:

- They are a by-product of **industrialization.**
- The Indian chemical industries comprise small, **medium and large-scale units.**
- **The chemical industry includes:**
  - basic chemicals and their intermediates
  - petrochemicals
  - fertilizers, paints, pesticides
  - bulk drugs and pharmaceuticals (most diversified industrial sectors)

### Rules governing the safety of the workers employed in factories and industries:

- Indian Factories Act, 1948.
- The Dock Workers (Safety, Health & Welfare) Act, 1986.
- These legislations regulate the working conditions of individuals employed at sites of industrial activity and prescribe rules for the maintenance of site safety.
- Labour codes.

#### What is the issue now?

- **Supreme Court:** It has reserved its judgment on a curative petition filed by the Centre in 2010 to enhance the \$470 million, compensation fixed in a 1989 settlement reached with Union Carbide Corporation (UCC).
- The government has sought an additional amount of ₹675 crore in compensation from the pesticide company.
- The UCC has refused to pay a “farthing more”.

#### What is the basis for the plea for more compensation?

- **The basis of the \$470 million settlement:** there were only around 3,000 death cases in the gas leak incident.
- The government’s curative petition in 2010 said the actual figure is 5,295 deaths.
- Report submitted by the Welfare Commissioner, Bhopal Gas Victims: It shows the number of deaths have increased to 5,479 as on December 15, 2022.
  - The Commissioner’s report further said the number of cases of cancer and renal failure were 16,739 and 6,711, respectively.
- The government’s chart shows that the total number of cases of deaths, disability, injuries, loss of property and livestock have increased to around five lakh seventy four thousand from the two lakh “assumed”.

#### Is more relief possible in a curative petition?

- **Ashok Hurra versus Rupa Hurra case(2002):**
- It is the rarest-of-rare remedies when “the duty to do justice shall have to prevail over the policy of certainty of a judgment and declining justice would be oppressive to judicial conscience and perpetuate an irreparable injustice”.

#### A party can take only two limited grounds in a curative petition:

- He/she was not given an opportunity to be heard,
- Judges were biased.

#### What are the rival contentions?

- **Attorney General of India:** It had urged the court to look beyond the conservative principles of law(beyond the restrictions of the curative jurisdiction).
- **Government:** Parliament had enacted the Bhopal Gas Leak Disaster (Processing of Claims) Act of 1985.
  - It has an obligation to protect the victims’ interests “effectively and equitably”.
- **The UCC:**
  - **Settlement was arrived at** on the basis of a “consent decree” sourced from a suit.
  - **The liability of UCC** for the tragedy was never established.
  - There was no “reopener clause” in the settlement.

#### Way Forward

- At the heart of the legal dispute is a paragraph from the October 3, 1991 order of the Supreme Court. The paragraph discussed the “unlikely event” of the 1989 settlement funds being found insufficient to satisfy the claims of all the victims. While stressing that the victims should not be left to “fend for themselves”, the court, in 1991, had said the “reasonable way to protect the interests of the victims is to hold that the Union of India, as a welfare state and in the circumstances under which the settlement was made, should not be found wanting in making good the deficiency, if any”.



## EROSION ALONG THE BANKS OF RIVER

### Context:

- Massive erosion along the banks of the Ganga River has left hundreds of people homeless in West Bengal.

### Major Reasons

- Flood is the most crucial reason for river bank erosion.
- Deforestation also causes River Bank Erosion.
- Humans extract excessive amounts of soil from the bank for their uses or they extract huge amounts of sand and gravel which help to hold back the soil. By doing this they accelerate river bank erosion.
- Key factors causing the river to be extremely unstable at many reaches are '**aggradation**' (raising of the river bed due to sediment deposition), intense '**braiding**' and **large water discharge**.
- Other than the natural process, like storms and sea level rise, anthropogenic issues like aquaculture, port construction and other developmental activities also lead to erosion.

### Implications and Concerns

- The recurring incidents of river bank erosion have doubled the safety concerns of people.
- Apart from the loss of cropped areas, they fear that their residential areas might cave in.
- People have begun to move out of villages as erosion of the river has affected agricultural lands.
  - All these reasons are a major cause of migration
- The erosion of river banks is also having an **impact on education and employment in the area**.
  - Since locals have to keep shifting their homes, it has become difficult for them to continue their children's education
- The locals are mostly farmers and agricultural labourers, and it has become **difficult for them to sustain their livelihood** as large stretches of farmland have been swallowed up by the river.
- Protection of river banks from erosion is a problem in **flood-prone areas and involves a huge expenditure**.
- Many local bodies are also reluctant to use their own funds, expecting contributions from other government sources.

### Initiatives

- The **grass vetiver**, whose scientific name is *Chrysopogon Zizanioides*, has been planted on the embankment of the Mundeswari River in the Hooghly district experimentally under the MGNREGA programme.
- The **XVth Finance Commission** had recommended the creation of a **National Disaster Risk Management Fund (NDRMF) and State Disaster Risk Management Fund (SDRMF)** comprising a Mitigation Fund at the National and State-levels (NDMF/SDMF), and a Response Fund at the National and State level (NDRF/SDRF) for the award period from 2021-22 to 2022-26.
  - The Commission has also made specific recommendations for '**Mitigation Measures to Prevent Erosion**' under NDMF and '**Resettlement of Displaced People Affected by Erosion**' under NDRF.
- The **projects for flood management and control** are formulated and implemented by respective state governments/Union Territories from their own resources and as per their priority.
- The **Central Government provides financial assistance** to states/UTs for implementing some projects in critical areas. Central Govt. has been providing financial assistance through a scheme called **Flood Management Programme (FMP) since XI Plan**.
  - The scheme since its inception has undergone several changes as per demands of states/UTs and also on account of various directions and policies of Govt. of India.

### Suggestions and Way Forward

- There is a need to **develop suitable norms for mitigation measures** to prevent erosion and for both the Union and the State Governments to develop a policy to deal with the extensive displacement of people caused by coastal and river erosion.
- The **phase-wise solution is required for the mitigation of erosion** by including a **combination of measures** including strategic dredging, and protection of erodible bank materials with anchored bulkhead or tie-back sheet piles, spurs, toe and bank revetments.

- **Improvement of data quality and quantity** by extending rain, flow and sediment monitoring networks using state-of-the-art equipment and considering physical modelling to study severe and potential scour sites and their control have also been suggested by the experts.
- There is a need for adopting the holistic science of river management as well as comprehensive land use plans for vulnerable areas.
- There is a need to generate awareness among the people:
  - People should understand that this is the land of the river and the river needs space to play.

## KEN-BETWA RIVER LINK PROJECT

### Context:

- Recently, the **Steering Committee** of the **Ken-Betwa Link Project (KBLP)** held its third meeting in New Delhi.

### River-linking in India

- **The idea of river-linking:**
  - In the 1970s, the idea of transferring surplus water from a river to a water-deficit area was proposed by the then Union Irrigation Minister (earlier the Jal Shakti Ministry was known as the Ministry of Irrigation).
- **National Perspective Plan (NPP):**
  - **About:**
    - It was prepared by the then Ministry of Irrigation (now Ministry of Jal Shakti) in 1980 for **water resources development** through the **inter-basin transfer of water**.
    - It aimed for transferring water **from water-surplus basins to water-deficit basins**.
  - **The NPP comprised two components:**
    - **Himalayan Rivers Development:**
      - It envisages the construction of storage reservoirs on the main **Ganga and Brahmaputra Rivers** and their **principal tributaries** in India and Nepal so as to conserve monsoon flows for irrigation and hydro-power generation, besides flood control.
      - Links will **transfer surplus flows of the Kosi, Gandak and Ghagra to the west**.
      - Surplus flows that will become available on account of the interlinking of the Ganga and the Yamuna are proposed to be transferred to the **drought-prone areas of Haryana, Rajasthan and Gujarat**.
    - **Peninsular Rivers Development:**
      - The main component of Peninsular Rivers Development is the “**Southern Water Grid**” which is envisaged to **link Mahanadi, Godavari, Krishna, Pennar, and Cauvery rivers**.

### Significance of River interlinking

- **Balancing the uneven water availability:**
  - Most part of the country is **monsoon dependent** and the **quantum of rain varies widely across different regions**.
  - Therefore, interlinking will help in **balancing the uneven water availability**.
- **Tackling droughts and floods:**
  - The Indian Rivers Inter-link aims to link India’s rivers with a network of reservoirs and canals and so **reduce persistent floods in some parts and water shortages in other parts** of India.
- **Efficient logistic movement:**
  - The interlinking of river projects can help India in increase connectivity by creating more **inland waterways**, therefore, cater the logistic deficiency.

### Criticisms around River interlinking

- **Damage to ecology:**
  - Changes to **Rivers natural course** will have an **impact on all the flora and fauna**, the **wetlands** and the **floodplains** that are **intricately linked to the river system**.
  - The **long-term environmental impact** of such a project is a major concern.
- **Threat to Fertile deltas:**



- The River Linking Projects will not only reduce the inflow of the northern rivers but also **significantly reduce the sediments deposited** by the rivers in deltas.
  - **Fertile deltas will be under threat**, with coastal erosion expected to threaten the **land and livelihoods of local economies**.
- **Costly affair:**
  - River inter-linking is an **expensive business** from building the **link canals to the monitoring and maintenance of infrastructure**.
- **Disagreement between the states:**
  - The states couldn't agree on how water would be shared, particularly in the non-monsoonal months.
- **Regarding Ken-Betwa river link project:**
  - **Issues of water security:**
    - Critics are concerned that the project will endanger the **water security of Panna**.
    - According to them, there **may not even be enough water in the Ken**, a non-perennial river, **to meet the projected needs of the Betwa**.
  - **Inter-state conflicts:**
    - This linking may also intensify water conflicts between Madhya Pradesh and Uttar Pradesh;
  - **Endangering Panna Tiger Reserve & Ken Gharial Sanctuary:**
    - Out of the 6,017 ha of forest area coming under submergence of Daudhan dam of Ken Betwa Link Project, 4,206 ha of the area lies within the **core tiger habitat of Panna Tiger Reserve**.
      - Panna is exceptional tiger habitat because of its **deep gorges, which will be drowned if the new dam is built**.
    - Downstream of the national park lies the **Ken Gharial Sanctuary**, created to protect the **critically endangered Gangetic gharial**.
    - According to the experts, the destructive impact of the proposed dam on the flow of water into and outside of this sanctuary should be immediately clear.

#### Way ahead

- River interlinking can lead to large-scale displacement of people and animals.
  - Hence appropriate rehabilitation measures should be taken by the Government.
- A careful scientific assessment of the project and its impact on the environment is necessary in case of a project of this magnitude.

### INDIA'S GROUNDWATER GOVERNANCE IS IN BETTER SHAPE

#### Context:

- India, with nearly **18%** of the world's population, occupies about **4(two point four)% of the total geographical area** and consumes **4% of total water resources**.
- Groundwater is the water present below the earth's surface and is a vast resource of water.
- Almost **22 percent** of water is below the surface land in the form of groundwater.
- **World Bank report:** India is the largest groundwater user.

#### Importance of Groundwater:

- **Groundwater is the backbone of India's agriculture** and drinking water security in rural and urban areas
- **It meets nearly 80% of the country's drinking water** and two-thirds of its irrigation needs.
- **Groundwater** is pivotal to India's water security.

#### Steps taken by the government for sustainable groundwater management:

- **Reduction** in groundwater extraction to below **70%**
- **Increasing the network** of groundwater observation wells,
- **Installing digital water level** recorders for real-time monitoring,
- **Periodic monitoring** of groundwater quality

- **Aquifer mapping** and data dissemination
- **Having better regulation** of groundwater extraction by industries
- **Promoting participatory** groundwater management
- **Periodic** groundwater resource assessment.
- **Creation of Jal Shakti Ministry** (a merger of the erstwhile Ministries of Water Resources, River Development and Ganga Rejuvenation along with Drinking Water and Sanitation).
- **Jal Shakti Abhiyan** was launched to transform **Jan Shakti** into **Jal Shakti** through asset creation
  - Rainwater harvesting ('Catch the Rain' campaign)
  - extensive awareness campaign.

#### **Initiatives for the effective management and regulation of groundwater:**

- **Atal Bhujal Yojana (ABY):** It looks to inculcate behavioral change made possible by incentivisation.
- **National Project on Aquifer Management (NAQUIM):** It envisages the mapping of subsurface water bearing geological formations (aquifers) to help gather authentic data and enable informed decision-making.
- **There are around 65,025 groundwater monitoring stations in India**, which include 7,885 automated stations.
- **Samples from fixed locations** are obtained to check for the presence of heavy and trace metals.
- **A software, 'India-Groundwater Resource Estimation System (IN-GRES)',** has also been developed.

#### **What does the latest groundwater assessment show?**

- **There has been a 3% reduction** in the number of 'overexploited' groundwater units and a **4% increase** in the number of 'safe' category units as compared to 2017.
- **There was an improvement** in groundwater conditions in 909 units.
- **A reduction in annual extraction** (of about **53(nine point five three) billion cubic meters**)
- **Overall extraction** saw a declining trend, of about **25(three point two five)% since 2017.**

#### **What does the groundwater assessment indicate?**

- **It shows that a time-bound and scientific approach** is being adopted to monitor precious water resources.
- **It indicates a positive inclination** in the management of groundwater.

#### **Reasons for success:**

- **Implementation of comprehensive groundwater guidelines** in 2020 for regulation in various sectors
- **Making the processes of issuing a no-objection certificate** transparent and time-bound using a web-based application.
- **The government's interventions** in enabling a positive impact on the overall groundwater scenario.

#### **Way Forward**

- **The Theme of UN World Water Day 2022: 'Groundwater, Making the Invisible Visible'** is a reflection of the importance given to the resource across the globe.
- **A heli-borne based survey (state-of-the-art technology),** has also been used along with traditional exploratory methods for rapid and accurate aquifer mapping.
- **Region-wise aquifer management plans** are being prepared and shared with States.
- **Dynamic groundwater assessments** will be done annually now and a groundwater estimation committee formed to revise the assessment methodology.
- **The positive change in groundwater:** It reflects the spirit of cooperative federalism in managing this precious resource.
  - Around **37(nine point three seven) BCM** of additional groundwater potential was created through artificial water conservation structures
- **India will need adequate groundwater resources** to manage anthropogenic pressures.
- **It is important to ensure source sustainability** to provide safe drinking water to all rural households by **2024, under the Jal Jeevan Mission.**

- **Communities will have to manage their groundwater resources** better with the help of various government agencies and non-governmental organizations.
- **Find solutions** that are essential for sustainable development.
- **Steps must be taken to make India a water surplus nation**, thus fulfilling the objective of a key United Nations Sustainable Development Goal, of water for all.





## IMPORTANT PERSONALITIES

### IDEALS OF MAHATMA GANDHI

#### Context:

- The Nation pays tribute to **Mahatma Gandhi on his 75<sup>th</sup> death anniversary** on 30<sup>th</sup> January 2023. The day is also observed as **Martyrs' Day**.

#### What are the Major Gandhian Ideologies?

- **Vision for India:** Gandhi's vision for India went beyond **political independence** from colonial rule.
  - He aimed for **social emancipation, economic empowerment, and a shared sense of solidarity** across different language, religion, and cultural backgrounds.
- **Non-violence:** Gandhi was a **strong advocate of non-violence** and believed that it was the most powerful weapon in the struggle for justice and freedom.
  - He also believed that non-violence should be a way of life, not just a political strategy, and that it would lead to **lasting peace and social harmony**.
  - Gandhi was a leader who inspired and empowered the people through **love and compassion**.
- **Against Discrimination:** Gandhi travelled all over India and saw the different cultural parts of the country. He brought people together by **highlighting the common things that united them**, like their faith.
  - Gandhi strongly believed in treating everyone equally, regardless of religion or caste. He was **against discrimination and the practice of untouchability**.
- **Secular Outlook:** Gandhi was a Hindu but believed in a **secular India**, where all religions could exist peacefully together. He was very upset about the partition of India, which was based on religion.
  - Today, **it is important to remember Gandhi's values of peace**, inclusiveness, and harmony as these values are still relevant.
- **Communal Harmony:** Gandhi was a firm believer in the unity of all communities and worked tirelessly to promote communal harmony.
  - He believed that **India's strength lay in its diversity and that this diversity should be celebrated, not feared**.
  - He was deeply troubled by the **Hindu-Muslim divide** and worked to bring the two communities together.
- **Self-Reliance:** Gandhi believed in the **importance of self-reliance** and encouraged Indians to become **self-sufficient in as many ways as possible**.
  - He **encouraged the use of local resources** and traditional skills and the development of cottage industries.
  - He also believed that the **people of India should take responsibility for their own development** and not rely on external support.

#### What is the Relevance of Gandhiji in Today's Context?

- The ideals of **truth and nonviolence**, which underpin the whole philosophy, are relevant to all humankind, and are considered as universal by the Gandhians.
  - More than ever before, Mahatma Gandhi's teachings are valid today, when **people are trying to find solutions to the rampant greed, widespread violence**, and runaway consumptive style of living.
- The Gandhian technique of mobilising people has been successfully employed by many oppressed societies around the world under the leadership of people like **Martin Luther King in the United States, Nelson Mandela in South Africa**, and **Aung San Suu Kyi in Myanmar**, which is an eloquent testimony to the continuing relevance of Mahatma Gandhi.
- The **Dalai Lama** said, "**We have a big war going on today between world peace and world war, between the force of mind and the force of materialism, between democracy and totalitarianism.**" It is precisely to fight these big wars that the Gandhian philosophy needed in contemporary times.

## CULTURE OF INDIA

### VOKKALIGAS, LINGAYATS SHARE IN RESERVATION

#### Why in News?

- Recently, Karnataka has categorized the two dominant communities, **Vokkaligas and Lingayats**, as **“moderately backward”** from the **“backward”** category in a move that could increase their share in reservation for **Other Backward Classes (OBC)**.

#### What are the Key Points of the Move?

- Karnataka currently has **32% quota for OBC**, and **17% and 7% quota for Scheduled Castes and Scheduled Tribes**, respectively, taking the **total to 56%**.
- The **Panchamasali sub-sect of Veerashaiva Lingayats** has demanded inclusion in the 2A category which has 15% quota from their current 3B category which has 5% quota.
- The Cabinet’s decision is based on the **recommendations of the Karnataka State Commission for Backward Classes**.
- The Vokkaliga community, which is currently in the 3A category, will be moved to a **newly-created 2C category with 4% reservation**. And the Lingayat community, which is in the 3B category, will now be in a **new 2D category with 5% reservation**.
- The Cabinet decision ensures that there is no sub-categorisation of the Lingayat community.
- The Lingayats are a **dominant community who make up nearly 17% of Karnataka’s six crore population**-followed by Vokkaligas. The new categories will not affect the existing reservation provided to other communities.
- The reservation will be applicable only in education and jobs, and “not political reservation.

#### Who are Lingayats?

- **About:**
  - The term **Lingayat denotes a person who wears a personal linga, an iconic form of god Shiva**, on the body which is **received during the initiation ceremony**.
  - Lingayats are the followers of the **12<sup>th</sup>-century social reformer-philosopher poet, Basaveshwara**.
  - Basaveshwara was **against the caste system and Vedic rituals**.
  - The Lingayats are **strict monotheists**. They enjoin the worship of only one God, **namely, Linga (Shiva)**.
  - Lingayats had been classified as a **Hindu subcaste called “Veerashaiva Lingayats”** and they are considered to be Shaivites.
- **Separate Religion for Lingayats:**
  - Lingayats had distanced themselves from **Hindu Veerashaivas because the latter followed the Vedas** and supported the caste system, to which Basaveshwara was against.
  - Veerashaivas are the **followers of the five peethas (religious centers)**, called Pancha Peethas. These peethas are set up on similar lines to the four peethas set up by Adi Shankara.

#### Who are Vokkaligas?

- It is even believed that the **Rashtrakutas and Western Gangas were of Vokkaliga origin**.
- Vokkaliga is a category defined in **terms of occupation, and to that extent could be an ethnic category; these are largely farmers by origin**.
- The Vokkaliga caste originates in the Indian state of Karnataka. In the former princely state of Mysore, the Vokkaligas were the largest community.
- As a community of warriors and cultivators, they have historically wielded **tremendous demographic, political, and economic dominance in Old Mysore**.

#### How has the Status of OBC Reservation Emerged Over Time?

- The **Kalelkar Commission, set up in 1953**, was the **first to identify backward classes other than the Scheduled Castes (SCs) and Scheduled Tribes (STs)** at the national level.

- The **Mandal Commission Report, 1980** estimated the **OBC population at 52% and classified 1,257 communities** as backward.
  - It recommended increasing the existing quotas, which were only for SC/ST, from 22.5% to 49.5% to include the OBCs.
- **The central government reserved 27%** of seats in union civil posts and services for OBCs [Article 16(4)]. The quotas were subsequently enforced in central government educational institutions [Article 15 (4)].
  - In 2008, the **Supreme Court** directed the central government to **exclude the creamy layer (advanced sections) among the OBCs**.
- The **102<sup>nd</sup> Constitution Amendment Act, 2018** provided constitutional status to the National Commission for Backward Classes (NCBC), which was previously a statutory body under the Ministry of Social Justice and Empowerment.

### Questions For Practice

**Q.** Do government's schemes for up-lifting vulnerable and backward communities by protecting required social resources for them, lead to their exclusion in establishing businesses in urban economies?

**Q.** Discuss the role of the National Commission for Backward Classes in the wake of its transformation from a statutory body to a constitutional body.

## SUB-CATEGORIZATION OF OBC CASTES

### Context:

- Justice G. Rohini commission for the **sub-categorisation of other backward classes (OBCs)** received 14th extension from the President.

### Background

- The **Justice Rohini Commission** was constituted under **Article 340 of the Constitution**.
- In 2008, the Supreme Court directed the central government to exclude the creamy layer (advanced sections) among the OBCs.
- The **Kalelkar Commission, set up in 1953**, was the first to identify backward classes other than the Scheduled Castes (SCs) and Scheduled Tribes (STs) at the national level.
- The **Mandal Commission Report, 1980** estimated the OBC population at 52% and classified 1,257 communities as backward.
  - It recommended increasing the existing quotas, which were only for SC/ST, from 22.5% to 49.5% to include the OBCs.

### What is the Sub-Categorisation Process?

- **Identification of Dominant Caste:** The Commission identified a small group of dominant caste groups that were crowding out a large number of communities from the 27% OBC quota.
- **Division of OBC communities:** The commission decided to divide all OBC communities into four broad categories, with the largest quota going to the group that has been historically deprived of OBC quota due to crowding out by dominant OBC groups.

### Need for Sub-Categorisation

- **Larger benefits to small Groups:** Rich and dominant sections occupy a major chunk of reservations among OBCs.
- **Earlier Recommendations:** NCBC recommended sub-categorisation in 2011, which was supported by the standing committee.
- **Supreme Court Intervention:** In Ashoka Kumar Thakur vs UOI, 2008 case the Court categorically reiterated its prior stand that "**Creamy Layer**" should be excluded from the ambit of reservation policy and private institutions are also not to be included.

### Challenges faced in Sub-Categorisation

- **Absence of Data** for the population of various communities to compare with their representation in jobs and admissions.



- **Political Issue:** Sub-Categorisation will lead to discontent among dominant OBC groups. Regional parties oppose this as seen in Andhra Pradesh when an attempt to provide sub-quotas for OBCs was stalled by courts on the ground that a religion-based quota is not permitted.
- **Vote-Bank politics** over the prioritisation of caste-based categorisation over income-based differentiation to identify reservation beneficiaries.

#### **Reasons for Current Extension**

- The Bihar government is in the middle of its caste-based survey.
- The Uttar Pradesh government is conducting a new survey to assess the need for OBC reservation in its local body elections.
- States like Madhya Pradesh and Maharashtra are also looking to form panels to implement OBC reservations in local body polls.
- The Rohini Commission panel said that they are currently finalising the compilation of the report.

#### **National Commission for Backward Classes(NCBC)**

- NCBC is a constitutional body given the prestigious status after the 102nd amendment 2018 under Article 338B of the Indian Constitution.
- The Commission is authorised to investigate and monitor all matters relating to the safeguards provided for the socially and educationally backward classes under this Constitution or under any other law.



CivilsTap Hlmachal

# GENERAL STUDIES 2.

## POLITY

### DELIMITATION

#### Why in News?

The Assam state Cabinet recently approved the merger of four districts with their constituent districts.

- On 27<sup>th</sup> December, the **EC announced the process of delimitation of Assembly and Parliamentary constituencies in Assam**, saying it would be based on Census data from 2001. Assam currently has 14 Lok Sabha constituencies and 126 Assembly constituencies.

#### What is Delimitation?

##### • About:

- **Delimitation** literally means the act or process of fixing limits or boundaries of territorial constituencies in a country to represent changes in population.
- The Delimitation Commission is to **work without any executive influence**.
- The Constitution **mandates that the Commission's orders are final and cannot be questioned before any court** as it would hold up an election indefinitely.
- When the orders of the Delimitation Commission are laid before the Lok Sabha or State Legislative Assembly, they cannot effect any modification in the orders.

##### • Need:

- To provide equal representation to equal segments of a population.
- **Fair division of geographical areas** so that one political party doesn't have an advantage over others in an election.
- To follow the principle of **"One Vote One Value"**.

##### • Composition:

- The Delimitation Commission is appointed by the **President of India** and works in collaboration with the **Election Commission of India**.
  - Retired **Supreme Court judge**
  - Chief Election Commissioner
  - Respective State Election Commissioners
- **What is the Process of Delimitation?**

- **Under Article 82**, the Parliament enacts a Delimitation Act after every Census.

- **Under Article 170**, States also get divided into territorial constituencies as per Delimitation Act after every Census.

- Once the Act is in force, the Union government sets up a Delimitation Commission.

- The **first delimitation exercise** was carried out by the President (with the help of the Election Commission) in 1950-51.

- The **Delimitation Commission Act was enacted in 1952**.

- Delimitation Commissions have been set up four times — 1952, 1963, 1973 and 2002 under the Acts of 1952, 1962, 1972 and 2002.

- There was no delimitation after the 1981 and 1991 Censuses.

#### What are the Issues with Delimitation?

- States that take **little interest in population control** could end up with a greater number of seats in Parliament. The southern states that promoted family planning faced the possibility of having their seats reduced.

- In 2002-08, **Delimitation was done based on the 2001 census**, but the total number of seats in the Assemblies and Parliament decided as per the 1971 Census was not changed.

- The **87<sup>th</sup> Amendment Act of 2003** provided for the delimitation of constituencies on the basis of 2001 census and not 1991 census. However, this can be done without altering the number of seats allotted to each state in the Lok Sabha.
- The Constitution has also **capped the number of Lok Shaba & Rajya Sabha seats to a maximum of 550 & 250 respectively** and increasing populations are being represented by a single representative.

## DRAFT RULES FOR ONLINE GAMING

### Why in News?

- Recently, the Ministry of Electronics and IT (MeitY) has released the Draft Rules for Online Gaming.
- The proposed rules have been introduced as an amendment to the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**.

### What are the Draft Rules?

- **Self Regulatory Body:**
  - Online games will have to register with a self-regulatory body, and only games cleared by the body will be allowed to legally operate in India.
    - The self-regulatory body will have a board of directors with **five members from diverse fields**, including online gaming, public policy, IT, psychology and medicine.
  - There could be more than one self-regulatory body and all of them will have to inform the Centre about the games they have registered along with a report detailing the criteria for registering.
- **Due Diligence:**
  - Online gaming firms **will be required to undertake additional due diligence, including KYC of users**, transparent withdrawal and refund of money, and a fair distribution of winnings.
  - For KYC, they will have to **follow norms laid down for entities regulated by the Reserve Bank of India (RBI)**.
- **Random Number Generation Certificate:**
  - Gaming companies will also have to secure a Random Number Generation Certificate, which is typically **used by platforms that offer card games to ensure that game outputs are statistically random and unpredictable**.
  - They will also have to get a **“no bot certificate”** from a reputed certifying body.
- **Restrictions on Betting:**
  - Online gaming companies **will not be allowed to engage in betting on the outcome of games**.
- **Compliance:**
  - Similar to social media and e-commerce companies, **online gaming platforms will also have to appoint a compliance officer** who will ensure that the platform is following norms, a nodal officer who will act as a liaison official with the government and **assist law enforcement agencies, and a grievance officer who will resolve user complaints**.

### What is the Need for the Rules?

- Around 40 to 45 % of the gamers in India are women, and therefore it was all the more important to keep the gaming ecosystem safe.
- It is believed to be a great first step for comprehensive regulation for online gaming and will reduce the **state-wise regulatory fragmentation that was a big challenge for the industry**.
- The revenue of the Indian mobile gaming industry is expected to reach USD 5 billion in 2025.
- The industry grew at a **compound annual growth rate (CAGR) of 38%** in India between 2017-2020, as opposed to 8 % in China and 10% in the US.
- It is expected to grow at a CAGR of 15 % to reach Rs 153 billion in revenue by 2024, as per a report by VC firm Sequoia and management consulting company BCG.

## FOREST (CONSERVATION) RULES 2022

### Why in News?



- Recently, the **National Commission for Scheduled Tribes (NCST)** Chairperson said that the ST body's position on the **Forest (Conservation) Rules 2022** being **violative of the Forest Rights Act, 2006** "will be the same" even as the Environment Ministry has dismissed these concerns.

#### What is the Issue?

- **Consent Clause for Diversion of Forest Land:**

- In September 2022, flagging concerns over the **provision in the new rules that proposes to do away with the consent clause** for diversion of forest land for other purposes, the Commission had **recommended that these rules should be put on hold immediately.**
  - In response, the ministry has insisted that the **rules were framed under the Forest (Conservation) Act, 1980** and that the NCST's apprehension of these rules being in violation of the **Forest Rights Act (FRA), 2006** was "not legally tenable".
  - The Minister added that the two statutory processes were parallel and not dependent on each other.

- **Consent of Gram Sabhas:**

- The NCST had **pointed out that the FCR 2022 has done away with the provisions to mandatorily seek consent of Gram Sabhas** before the Stage 1 clearance, leaving this process to be done later and even after Stage 2 clearance.
  - According to the government, **FCR 2022 already provides for diversion of forest land "only after fulfilment** and compliance of all provisions, including settlement of rights under the **Forest Rights Act"** and also **does not bar or infringe upon the operation of other laws** mandating consent of **Gram Sabhas.**

#### What are the Provisions of Forest (Conservation) Rules, 2022?

- **Formation of Committees:**

- It constituted an **Advisory Committee, a regional empowered committee** at each of the integrated regional offices and a screening committee at State/Union Territory (UT) government-level.

- **Compensatory Afforestation:**

- The applicants for **diverting forest land in a hilly or mountainous state with green cover** covering more than two-thirds of its geographical area, or in a state/UT with forest cover covering more than one-third of its geographical area, will be able to take up compensatory afforestation in other states/UTs where the cover is less than 20%.

- **Allows Private Plantations:**

- The rules **make a provision for private parties to cultivate plantations** and sell them as land to companies who need to meet compensatory afforestation targets.
  - Prior to the updated rules, state bodies would forward documents to the FAC that would also include information on the status of whether the forest rights of locals in the area were settled.

- **No consent of Gram Sabha needed:**

- The new rules state that a project, once approved by the FAC, will then be passed on to the State authorities who will collect the compensatory fund and land, and process it for final approval.
  - Previously consent of gram sabha, or the governing body in villages in the area, was required to give written consent to the diversion of the forest.

- **Allows building in Forests:**

- Right to construct structures for bonafide purposes including forest protection measures and residential units (up to an area of 250 sq meters as one-time relaxation).

#### What is the State of Forest in India?

##### About:

- According to **India State of Forest Report, 2021**, the Total Forest and Tree cover is now 7,13,789 square kilometres, 21.71% of the country's geographical area, an increase from 21.67% in 2019.

- Forest Cover (Area-wise): Madhya Pradesh> Arunachal Pradesh> Chhattisgarh> Odisha> Maharashtra.

#### Category:

- **Reserved Forests:**
  - Reserve forests are the **most restricted forests and are constituted by the State Government** on any forest land or wasteland which is the property of the Government.
  - In reserved forests, **local people are prohibited**, unless specifically allowed by a Forest Officer in the course of the settlement.
- **Protected Forests:**
  - The **State Government is empowered to constitute any land other than reserved forests as protected forests** over which the Government has proprietary rights and the power to issue rules regarding the use of such forests.
  - This power has been used to establish State control over trees, whose timber, fruit or other non-wood products have revenue-raising potential.
- **Village forest:**
  - Village forests are the one in which the **State Government may assign to 'any village community the rights of Government to or over any land** which has been constituted a reserved forest'.
- **Degree of Protection:**
  - Reserved forests > Protected forests > Village forests.

#### Constitutional Provisions:

- Through the **42<sup>nd</sup> Amendment Act, 1976 Forests and Protection of Wild Animals and Birds** were transferred from State to Concurrent List along with Education, Weights & Measures and Administration of Justice.
- **Article 48 A in the Directive Principles of State policy**, mandates that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.
- **Article 51 A (g)** of the Constitution states that it shall be the **Fundamental Duty** of every citizen to protect and improve the natural environment including forests and Wildlife.

#### What are the Related Initiatives?

##### Indian Forest Policy, 1952:

- It was a simple extension of colonial forest policy. However, it became conscious about the need to increase the forest cover to one-third of the total land area.

##### Forest Conservation Act, 1980:

- It stipulated that the central permission is necessary to practice sustainable **agro-forestry** in forest areas. Violation or lack of permit was treated as a **criminal offence**.

##### National Forest Policy, 1988:

- The ultimate objective of the **National Forest policy was to maintain environmental stability** and ecological balance through conservation of forests as a natural heritage.

##### National Afforestation Programme:

- It has been implemented by the Ministry of Environment, Forest and Climate Change since 2000 for the afforestation of degraded forest lands.

##### Other Related Acts:

- The **Wildlife Protection Act of 1972, The Environment Protection Act of 1986, and The Biodiversity Diversity Act of 2002.**
- **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006:**
  - It has been enacted to recognize and vest the forest rights and occupation of forest land in forest-dwelling Scheduled Tribes and other traditional forest dwellers, who have been residing in such forests for generations.

## SUPREME COURT VERDICT ON DEMONETISATION

### Why in News?

- Recently, the **Supreme Court** has passed a verdict on the **Demonetisation** of currency notes of Rs 500 and Rs 1,000 in a majority 4-1 by a five-judge **Constitution Bench**.

### 'NOT RELEVANT WHETHER OBJECTIVES ACHIEVED OR NOT'

MAJORITY VERDICT OF JUSTICES SA NAZEER, BR GAVALI, AS BOPANNA & V RAMASUBRAMANIAN	MINORITY VERDICT OF JUSTICE BV NAGARATHNA
<ul style="list-style-type: none"> <li>Majority verdict says demonetisation had a "reasonable nexus with its objectives" such as eradicating black money and terror funding and it is not relevant whether those objectives were achieved or not</li> <li>Says government was in consultation with RBI for six months and it is empowered to take such a decision</li> <li>No fresh window to exchange notes, 52 days' time given earlier not unreasonable</li> </ul> <p>There has to be great restraint in matters of economic policy. Court cannot supplant the wisdom of executive with its wisdom...</p>	<ul style="list-style-type: none"> <li>Demonetisation move 'exercise of power' by Union government, <b>contrary to law and vitiated</b> under the RBI Act</li> <li>Carried out in 24 hours, so central bank had no time to consider it</li> <li>Parliament, which is "at the centre of our democracy, cannot be left aloof in a matter of such importance"</li> <li>Around 98% of value of banned currency reported to have been exchanged, so <b>measure may not have been as effective as it was hoped to be</b></li> </ul> <p>This (use of phrases such as 'as desired' by the Centre in communication to RBI governor) demonstrates that there was no independent application of mind by the Bank</p>

### What are the Rulings of the Verdict?

- Majority Ruling:**
  - The majority held that **Centre's notification dated November 8, 2016 is valid** and satisfies the **test of proportionality**.
  - The RBI and the Centre had been in consultation with each other for **six months prior to the November 8 notification issued under Section 26(2) of the RBI (Reserve Bank Of India) Act, 1934**.
  - The statutory procedure under Section 26(2) of the RBI Act was not violated merely because the **Centre had taken the initiative to "advise" the Central Board to consider recommending** demonetisation.
  - The government was empowered under the **provision to demonetise "all series" of banknotes**.
  - On hasty decision, the court said such measures **undisputedly are required to be taken with utmost confidentiality** and speed. If the news of such a measure is leaked out, it is **difficult to imagine how disastrous the consequences would be**.
  - Demonetisation was done for the **"proper purposes" of eliminating fake currency, black money and terror financing**.
- Minority Ruling:**
  - The government could have issued a notification under Section 26(2) of the RBI Act only if the RBI had initiated the proposal to demonetise by way of a recommendation.
  - Therefore, the government's notification issued **under Section 26(2) of the RBI Act** was unlawful.
  - In cases in which the government initiates demonetisation, it should take the opinion of the RBI. The opinion of the Board should be "independent and frank".
  - If the Board's opinion was in the negative, the Centre could still go forward with the demonetisation exercise, but only by **promulgating an ordinance or by enacting a parliamentary legislation**.
  - Describing the Parliament as the "nation in miniature", "without the Parliament, democracy will not thrive".

### What is the Test of Proportionality?

- The test of proportionality is a **commonly employed legal method used by courts around the world**, typically constitutional courts, to decide cases where two or more legitimate rights clash.
- When such cases are decided, **one right typically prevails at the expense of the other and the court thus has to balance the satisfaction of some rights** and the damage to other rights resulting from a judgment.
- The principle of proportionality ordains that the **administrative measure must not be more drastic than is necessary for attaining the desired result**.



## What was Demonetisation?

- **About:**
  - On **8<sup>th</sup> November 2016**, the government announced that the **largest denomination of Rs 500 and Rs 1000 were demonetised with immediate effect ceasing to be a legal tender.**
  - It is the **act of stripping a currency unit of its status as legal tender or fiat money.**
  - It occurs whenever **there is a change of national currency and the current form or forms of money is pulled from circulation and retired, often to be replaced with new notes or coins.**
- **Objectives of Demonetisation:**
  - To **discourage the use of high-denomination notes for illegal transactions** and thus **curb the widespread use of black money.**
  - To encourage **digitisation of commercial transactions, formalise the economy** and so, boost government tax revenues.
    - The formalisation of the economy means **bringing companies under the regulatory regime of government** and subject to laws related to manufacturing and income tax.
- **Operation Clean Money:**
  - It was launched by the Income Tax Department (CBDT) for e-verification of large cash deposits made during the period from **9<sup>th</sup> November to 30<sup>th</sup> December 2016.**
  - The programme was launched on 31<sup>st</sup> January 2017 and entered into the second phase in May 2017.
  - It aimed to verify cash transaction status (exchange/savings of banned notes) of taxpayers during the demonetisation period and to take tax enforcement action if transactions do not match the tax status.
- **Impact of the Move:**
  - Currency with the public stood at Rs. 17.97 lakh crore on **4<sup>th</sup> November 2016** and declined to Rs 7.8 lakh crore in January 2017 after demonetisation.
  - Demands fell, businesses faced a crisis and **gross domestic product (GDP) growth declined** nearly 1.5%, with many small units and shops being shut down and it also created a **liquidity shortage.**
    - Liquidity shortages or crises arise when financial institutions and industrial companies scramble for, and cannot find the cash they require to meet their most urgent needs or undertake their most valuable projects.

## Way Forward

- Demonetization was **an expeditious move to boldly counter the black money** and parallel economy (illegal economy, such as money laundering, smuggling, etc.) threat with visible impact on how the government's policies are perceived in international circles of economic power.
- This move by the government **achieved greater significance for a globally connected India** as it showed boldness in tackling an issue which has remained a thorn in the growth

## WHIP IN PARLIAMENT

### Why in News?

- In a recent Constitution Bench judgment, the **Supreme Court** held that a **country with a multi-party system cannot afford to crack the whip** every time a Minister makes an offensive or disparaging statement.

### What is Whip?

- **About:**
  - A whip is an **official of a political party who acts as the party's 'enforcer'** inside the legislative assembly or house of parliament.
  - In India, **every major political party appoints a whip who is responsible for the party's discipline and behaviour on the floor of the House.**
  - A whip is an **important office-bearer of the party in the Parliament.**
  - Parties appoint a senior member from among their House contingents to issue whips — this member is called a Chief Whip, and he/she is assisted by additional Whips.
  - India inherited the concept of the whip from the British parliamentary system.
- **Violation of Whip:**



- A legislator may face **disqualification proceedings if she/he disobeys the whip of the party** unless the number of lawmakers defying the whip is 2/3rds of the party's strength in the house.
  - Disqualification is **decided by the Speaker of the house.**
- **Limitations of Whip:**
  - There are some cases such as Presidential elections where whips cannot direct a Member of Parliament (MP) or Member of Legislative Assembly (MLA) to vote in a particular fashion.
- **Types of Whips:**
  - The **One-line whip to inform the members about a vote.** It allows a member to abstain in case they decide not to follow the party line.
  - The **Two-line whip is issued to direct the members to be present in the House at the time of voting.** No special instructions are given on the pattern of voting.
  - The **Three-line whip is issued to members directing them to vote as per the party line.** It is the strictest of all the whip.

#### What are the Functions of Whip?

- The whip **plays a crucial role in ensuring the smooth and efficient conduct of business on the floor of the House.**
- He is **charged with the responsibility of ensuring the attendance** of his party members in large numbers and securing their support in favour of or against a particular issue.
- He ensures **discipline among party members in the House.**
- He identifies the signs of discontent among MPs and informs the respective leaders of their party.
- He or she acts as a binding force in the party and responsible for maintaining the internal party organisation in the Parliament.
- Under the **Tenth Schedule (anti-defection law)** a political party has a constitutional right to issue a whip to its legislators.

#### Question For Practice

**Q.** The role of individual MPs (Members of Parliament) has diminished over the years and as a result healthy constructive debates on policy issues are not usually witnessed. How far can this be attributed to the anti-defection law which was legislated but with a different intention?

### SUPREME COURT EXPANDS ARTICLE 19 AMBIT

#### Why in News?

- Recently, the Supreme Court has ruled that a fundamental right under Article 19/21 can be enforced even against persons other than the State or its instrumentalities.
- The court took this view while ruling that the right of **free speech and expression guaranteed under the Article 19(1)(a) cannot be curbed by any additional grounds** other than those already laid down in Article 19(2).

#### What is Article 19?

- Article 19 of the Constitution of India guarantees the **right to freedom of speech and expression, and is typically invoked against the state.**
  - **Article 19(1)** in The Constitution Of India 1949, All citizens shall have the right
    - (a) to freedom of speech and expression;
    - (b) to assemble peaceably and without arms;
    - (c) to form associations or unions;
    - (d) to move freely throughout the territory of India;
    - (e) to reside and settle in any part of the territory of India; and
    - (f) omitted
    - (g) to practise any profession, or to carry on any occupation, trade or business.
  - **Article 19(2)** in The Constitution Of India 1949,
    - Nothing in sub clause (a) of clause (1) shall affect the operation of any existing law, or prevent the State from making any law, in so far as such law imposes reasonable

**restrictions on the exercise of the right conferred by the said sub clause** in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality or in relation to contempt of court, defamation or incitement to an offence.

- Some fundamental rights, such as those prohibiting untouchability, trafficking, and bonded labour, **are explicitly against both the state and other individuals.**

#### What is the Reference for this SC's Ruling?

- **Enforcing Rights against Private Entities:**
  - This interpretation **brings an obligation on the state to ensure that private entities also abide** by Constitutional norms.
  - It opens up a **range of possibilities in Constitutional law, potentially allowing for the enforcement of privacy rights against a private doctor** or the right to free speech against a private social media entity.
- **Reference to Previous Court Rulings:**
  - The Court referenced the **2017 verdict in Puttaswamy**, in which a nine-judge bench unanimously upheld **privacy as a fundamental right.**
  - The government had argued **that privacy is a right enforceable against other citizens and, therefore, cannot be elevated** to the status of a fundamental right against the state.
- **International Perspectives:**
  - The Court also looked to **foreign jurisdictions, contrasting the American approach with the European Courts.**
  - The US Supreme Court's ruling in ***New York Times vs. Sullivan***, which found that **defamation law as applied by the state against The New York Times** was inconsistent with the Constitutional guarantee of freedom of speech and expression, was cited as an example of a shift in US law from a "purely vertical approach" to a "horizontal approach."
  - A **vertical application of rights** would mean it can be enforced only against the state while a **horizontal approach** would mean it is enforceable against other citizens.
    - For example, a horizontal application of the right to life would enable a citizen to bring a case against a private entity for causing pollution, which would be a violation of the right to a clean environment.

#### Question For Practice

**Q.** Examine the scope of Fundamental Rights in the light of the latest judgement of the Supreme Court on Right to Privacy.

### JALLIKATTU

#### Why in News?

- A **Constitution Bench** of the **Supreme Court** reserved for judgment a batch of petitions seeking to strike down a **Tamil Nadu law** which protects **Jallikattu** by claiming that the **bull-taming sport** is a **cultural heritage of the State** and is protected under **Article 29 (1) of the Constitution.**
- While these practices may be **deeply rooted in the culture and traditions of certain communities, they are often controversial and have been criticized by animal welfare advocates.**

#### What is Jallikattu?

- **Jallikattu** is a traditional sport that is popular in the Indian state of **Tamil Nadu.**
- The sport involves **releasing a wild bull** into a **crowd of people**, and the participants attempt to **grab the bull's hump and ride it** for as long as possible, or **attempt to bring it under control.**
- It is celebrated in the month of **January**, during the **Tamil harvest festival, Pongal.**

#### What are the Associated Concerns?

- The primary question involved was whether **Jallikattu** should be granted constitutional protection as a collective **cultural right under Article 29 (1)**.
  - **Article 29 (1)** is a **fundamental right** guaranteed under **Part III** of the Constitution to protect the **educational and cultural rights** of citizens.
- The court examined if the laws “**perpetuate cruelty to animals**” or were actually a means to ensure “**the survival and well-being of the native breed of bulls**”.
- The **five-judge Bench** heard parties on whether the new **Jallikattu laws** were “**relatable**” to **Article 48 of the Constitution**, which urged the state to endeavour to organize agriculture and animal husbandry on modern and scientific lines.
- The Constitution Bench also looked into whether **Jallikattu** and **bullock-cart** races laws of **Karnataka and Maharashtra** would actually **sub-serve the objective of “prevention” of cruelty to animals under the Prevention of Cruelty to Animals Act of 1960**.

#### What are the Associated Legal Interventions?

- In **2011**, the **Centre added bulls** to the list of animals whose **training and exhibition is prohibited**.
- The **Supreme Court banned Jallikattu** through a judgment in **May 2014** in the **Animal Welfare Board of India vs A. Nagaraja case** on the grounds of cruelty to animals.
- In **2018**, the **Supreme Court** referred the **Jallikattu case** to a **Constitution Bench**, where it is pending now.
- The bone of contention is the **Prevention of Cruelty to Animals (Tamil Nadu Amendment) Act of 2017** and **Prevention of Cruelty to Animals (Conduct of Jallikattu) Rules of 2017**, which had **re-opened the gates for the conduct of the popular bull-taming sport in the name of culture and tradition despite a 2014 ban by the Supreme Court**.

#### What were the Arguments adduced for and against Jallikattu?

- **Argument in Favour:**
  - In Tamil Nadu, jallikattu is **both a religious and cultural event celebrated by the people of the State** and its influence extends beyond the confines of caste and creed.
  - “A practice which is centuries-old and symbolic of a community’s identity can be regulated and reformed as the human race evolves rather than being completely obliterated,” the State government submitted.
  - It added that any ban on such a practice would be viewed as “hostile to culture and against the sensitivities of the community”.
  - Describing jallikattu as “a tool for conserving this precious indigenous breed of livestock,” the government argued that the traditional event **did not violate principles of compassion and humanity**.
  - It contended that the traditional and cultural significance of the event and its intertwining with **the sociocultural milieu was being taught in high school curriculum** so that “the significance is maintained beyond generations.”
- **Arguments in Opposition:**
  - The **petitioners’ line of argument** was that animal life was inextricably connected to the lives of humans. Liberty was “inherent in every living being, whether it be in any form of life,” an aspect that had been recognized by the **Constitution**.
  - The **Tamil Nadu law** was brought to circumvent the ban on **jallikattu** imposed by the **Supreme Court**.
  - **Deaths and injuries** have been caused to humans as well as bulls which had taken place in several districts of the State while conducting **jallikattu**.
  - The petitioners contended that contrary to the arguments advanced by **Tamil Nadu**, several tamers pounced on bulls.
  - According to them, “**extreme cruelty**” was inflicted on the animals.
  - There was no material to justify **jallikattu** as a part of culture.
  - The critics had equated the event with practices such as **sati and dowry**, which were also once recognized as part of culture and stopped through legislation.



### What is the Position in Other States for Similar Sports?

- **Karnataka** too passed a law to save a similar sport, called **Kambala**.
- Except in **Tamil Nadu** and **Karnataka**, where **bull-taming** and **racing** continue to be organized, these sports remain **banned** in all other states including **Andhra Pradesh**, **Punjab** and **Maharashtra** due to the **2014** ban order from the **Supreme Court**.

### Question For Practice

Q. What are the challenges to our cultural practices in the name of Secularism?

## RIGHT TO STRIKE

### Why in News?

- The **Kerala High Court** has reiterated that government employees who participate in general strikes, affecting the normal life of the public and Public Exchequer, **are not entitled to be protected under Article 19(1)(c) of the Constitution** and are also a violation of the provisions of the Kerala Government Servants' Conduct Rules, 1960.

### What is Right to Strike?

- **About:**
  - Strike is the **collective refusal by employees** to work under the conditions required by employers. Strikes arise for a number of reasons, though **principally in response to economic conditions** (defined as an economic strike and meant to improve wages and benefits) or **labour practices** (intended to improve work conditions).
  - In each country whether it is democratic, capitalist, socialist, give the **right to strike to the workers**. But this right **must be the weapon of last resort because if this right is misused, it will create a problem** in the production and financial profit of the industry.
  - This would ultimately **affect the economy** of the country.
  - In India, the **right to protest is a fundamental right under Article 19** of the Constitution of India.
  - But right to strike is **not a fundamental right but a legal right** and with this right statutory **restriction is attached in the Industrial Dispute Act, 1947**.
    - The Industrial Dispute Act, 1947 is subsumed under **The Industrial Relations Code, 2020**.
- **Position in India:**
  - In India, unlike America, the right to strike is not expressly recognized by the law.
  - The trade union Act, 1926 for the first time **provided limited right to strike by legalizing certain activities of a registered trade union** in furtherance of a trade dispute which otherwise breach of common economic law.
  - Nowadays a right to strike is **recognized only to a limited extent permissible under the limits laid down by the law itself**, as a legitimate weapon of Trade Unions.
  - The right to strike in the Indian constitution **set up is not an absolute right but it flows from the fundamental right to form a union**.
  - As every other fundamental right is subject to reasonable restrictions, the same is also the case to form trade unions to give a call to the workers to go on strike and the **state can impose reasonable restrictions**.
- **Right to strike under International Convention:**
  - Right to strike has also been recognised by the conventions of the **International Labour Organization (ILO)**.
    - India is a founder member of the ILO.

### What are the Important Supreme Court Judgements related to Right to Strike?



- The Supreme Court in **Delhi Police v. Union of India (1986)** upheld the restrictions to form association by the members of the non-gazetted police force after the Police Forces (Restriction of Rights) Act, 1966, and the Rules as amended by Amendment Rules, 1970, came into effect.
- In **T.K. Rangarajan v. Government of Tamil Nadu (2003)**, the Supreme Court held that the **employees have no fundamental right to resort to strike**. Further, there is prohibition to go on strike under the Tamil Nadu Government Servants' Conduct Rules, 1973.

## THE CONFLICT BETWEEN FOREST RIGHTS AND FOREST CONSERVATION

### Context:

- In June 2022, the Supreme Court had directed that every national park and wildlife sanctuary in the country will have a mandatory Eco-Sensitive Zone (ESZ) of at least one kilometer starting from its demarcated boundaries. The decision was made in response to a petition to protect forest lands in Tamil Nadu's Nilgiris district. However, the creation of these zones has provoked protests in Kerala and some other areas. Rights activists have criticized this **rights-negating 'fortress conservation model'**, as such models of forest conservation tend to deny the rights of traditional forest-dwelling communities. Critics argue that powers given to conservation authorities under the Forest Conservation Act has led to **labelling of traditional forest dwellers as 'encroachers'** in their own areas and denied them equitable access to forests' resources. Forest Rights Act was enacted to recognize the rights of traditional communities. Yet there has been a conflict between the Forest Rights and Forest Conservation because of lacunae in the implementation of these laws. Hence, there is a need to balance the two aspects, in order to ensure sustainable conservation while preserving rights of the tribals.

### SC Judgment regarding Eco-Sensitive Zones (ESZs)

- In June 2022, a 3-Judge bench of the Supreme Court heard a PIL regarding protection of forest land in the Nilgiri Hills (Tamil Nadu). The Supreme Court passed a Judgment regarding the creation of Eco-Sensitive Zones (ESZs) around protected areas. The salient aspects of the rulings were:
- **First**, The Supreme Court directed that no permanent structure will be allowed within the eco-sensitive zone.
- **Second**, Mining within a national wildlife sanctuary or national park cannot be permitted.
- **Third**, If the existing eco-sensitive zone goes beyond the 1 km buffer zone or any statutory instrument prescribes a higher limit, then such extended boundary shall prevail.
- **Fourth**, the SC said that the MoEFCC guidelines are also to be implemented in the area proposed in the draft notification *awaiting finalisation* and within a 10-km radius of *yet-to-be-proposed* protected areas. The Guidelines were released in July 2022.
- **Fifth**, The Court also allowed States to **increase or decrease the minimum width of ESZs in the public interest**.
- **Sixth**, The Court vested the powers to **ensure compliance** with the **Principal Chief Conservator of Forests (PCCF)** and the Home Secretary of the State/UT. Within three months, the PCCF was supposed to make a list of all structures in the ESZs and send it to the Supreme Court (this is yet to be done) within 3 months.

### Benefits of Eco-Sensitive Zones (ESZs)

- **Reduce Human-Animal Conflict and Forest Depletion:** ESZs help in reducing human-animal conflict by creating buffer zones. Moreover, prohibition of certain activities in ESZs helps in better conservation. The local communities in the surrounding areas are also protected and benefited from the protected areas thanks to the core and buffer model of management that the protected areas are based on.
- **Reduce Externalities of Development Activities:** ESZs as buffer zone help in protection of areas adjacent to the protected areas and help mitigate the negative effects of urbanisation and other development activities.
- **Minimize Damage to Fragile Ecosystems:** Declaring certain areas around protected areas to be environmentally sensitive serves the purpose of **developing a 'Shock Absorber'** for the protected area. They also **serve the function of a transition zone** between areas with higher levels of protection and areas with lower levels of protection.

- **Conservation:** ESZs are also helpful in conservation of endangered species. Restriction of activities in ESZs effectively expand the area available to the threatened species and reduce their vulnerability.
- **Conflict between Forest Conservation and Forest Rights**
- Critics argue that the powers granted to Forest Authorities under Forest Conservation has led to their misuse resulting in undermining of the rights of traditional forest dwelling communities (recognized in the Forest Rights Act, (FRA) 2006).
- **First**, critics argue that the Union and State Governments have attempted a series of **'backdoor' policy changes** in an attempt to roll back the achievements of the FRA e.g., the Governments of Maharashtra and Madhya Pradesh notified the rules for the administration of "village forests" in 2015. These rules sought to provide a **parallel, forest department-dominated procedure** by which villages could secure rights over common and collectively managed forests, and, in practice, the forest department would use pressure and monetary incentives to ensure that this process, **rather than the statutory procedure under the FRA**, would be followed. The guidelines issued in 2015 **allowed private companies to take over patches of forestland for growing tree or bamboo crops**, with rights arbitrarily limited to 15% of the leased areas.
- **Second**, The Compensatory Afforestation Fund Act was passed in 2016. It provided for the spending of a fund of more than INR 50,000 crore on forestry-related activities that had a direct impact on forest dwellers. **The Act didn't contain the words 'Forest Rights'**. The Government had assured that the rules formulated under the Act will address Forest Rights, but that hasn't happened.
- **Third**, The **Forest Right Act, 2006 was challenged in the Supreme Court by forest conservation groups** like Wildlife First and Wildlife Trust of India. They had argued that the FRA facilitates deforestation and illegal encroachment. Critics argue that the Union Government didn't defend the FRA vigorously. In 2019, the SC ordered the States to summarily evict or take other appropriate legal action against individuals whose land claims have been rejected. The SC stayed the decision after nationwide protests, but hasn't addressed the fundamental conflict between Forest Rights and Forest Conservation.
- **Fourth**, in 2019, amendments were proposed to the Indian Forest Act, 1927 which, among other things, would empower forest officials to use firearms and to **take away forest rights merely through the payment of monetary compensation**. These amendments would destroy the essence of Forest Rights.
- **Fifth**, the new **Forest Conservation Rules were notified in 2022**. The wording of new rules **implies that it is not mandatory to take the consent of Gram Sabha** before diversion of forest. Moreover, the new rules allow the Union Government to permit the **clearing of a forest before consulting its inhabitants**. This is akin to **forced consent**, the inhabitants will have no choice but to accept. The National Commission for Scheduled Tribes has asked to put **these rules on hold**, however the Ministry of Environment hasn't agreed to this proposal.

#### Hydel Project in Himachal Pradesh

- **In 2016, the National Green Tribunal (NGT) invoked the Forest Rights Act.**
- **It asked for consent of people of Lippa (Kinnaur, Himachal Pradesh) regarding the proposed Hydel Power Project.**
- **The project would have led to submergence of forestland and also caused heavy siltation in the river. The Gram Sabha did not approve the project.**
- **Sixth**, the SC ruling regarding the ESZs has meant that all the activities permitted by the guidelines and which are already being carried out can continue **only if the PCCF grants permission**, and that too within six months of the SC's order. This period has already expired. Additionally, the SC's directions have put the lives of many people in the hands of the PCCF, **whose authority now extends beyond the forest to revenue lands falling within an ESZ**. This has led to protests in Kerala.

#### Measures that can be taken to resolve the conflict between Forest Conservation and Forest Rights?

- **First**, The Government and the Judiciary need to reconcile laws, reaffirm democratic governance, and protect the environment and as well as livelihoods.

- **Second, A flexible and area-specific minimum limit boundary provision** is required. Many environmentalists across the country expressed concern about the mandatory implementation of the Eco-Sensitive Zone (ESZ) for each national park and sanctuary, which appears to be fine, but a fixed minimum limit of one kilometre raises some concerns. The **physiography of an area should also be considered for the eco-sensitive zone notification**.
- **Third**, the mandated eco-sensitive boundary should be extended to national parks and sanctuaries and to forest patches with better forest cover, good species composition, and a significant presence of wild species.
- **Fourth, Data must be collected** at the ground level. Even though the establishment and upkeep of buffer zones around ecologically sensitive areas are considered to be of the utmost importance, the process is frequently **hindered by a lack of trustworthy data** collected at ground level. The vast majority of micro-level land use statistics are based on conjecture, with very little input from the ground.
- **Fifth**, A meeting of all States, the Union Government, and the Judiciary is required before the recent judgement is carried out, so that **genuine concerns raised by the State Governments can be addressed** appropriately, reducing future conflicts.
- **Sixth**, The mining companies must strictly adhere to environmental regulations and **practise sustainable mining**. At the same time, no mining permits should be issued if any mineral extraction jeopardised the **carrying capacity of the protected areas**. This should be the approach for all development activities around the protected areas.

### Conclusion

- The Supreme Court's Judgment regarding the provision of ESZs around protected areas has led to protests in many parts of the country, especially in Kerala. This has reignited the debate regarding Forest Rights and Forest Conservation. Both the dimensions are important in the context of protection of forests and sustainable and inclusive development. The Government must take all possible steps for economic development, but such development shouldn't be at the cost of rights of the poor tribals as well as destruction of forest ecosystems. Hence the effort should be to establish a balance between the two.

### THERE IS HARDLY ANY AUTONOMY AT THE PANCHAYAT LEVEL.

#### Context:

- An **up-sarpanch** in **Telangana** died by suicide due to indebtedness.
- He had taken out a loan to undertake development works in the village and was unable to bear the burden.

#### Challenges faced by Panchayats:

- **Failure of the State government to release funds in time:** It forces them to utilize either private resources or borrow large amounts to complete panchayat activities and meet various targets.
- **State governments:** through the local bureaucracy, continue to exercise considerable discretionary authority and influence over panchayats.
- **Gram panchayats remain fiscally dependent on grants** (both discretionary and non-discretionary grants) from the State and the Centre for everyday activities.
- **Their own sources of revenue (both tax and non-tax):** They constitute a tiny proportion of overall panchayat funds.
  - For example: In **Telangana**, less than a quarter of a panchayat's revenue comes from its own sources of revenue.
- **Access to discretionary grants for panchayats** remains contingent on political and bureaucratic connections.
- **An inordinate delay in transferring approved funds** to panchayat accounts stalls local development.
  - **Delays in the disbursement of funds** by the local bureaucracy have led to pressure on sarpanches leading some to end their life.
- **State governments also bind local governments'** through the local bureaucracy.
- Approval for public works projects often requires technical approval (from the engineering department) and administrative approval



- **Higher-level politicians and bureaucrats intervening** in selecting beneficiaries for government programmes and limiting the power of sarpanches further.
- **The ability of sarpanches to exercise administrative control** over local employees is also limited.
  - In many States, the recruitment of local functionaries reporting to the panchayat, such as village watchmen or sweepers, is conducted at the district or block level.
- **Sarpanch does not have the power** to dismiss these local-level employees.
- **Unlike elected officials at other levels**, sarpanchs can be dismissed while in office.
  - **Gram Panchayat Acts** in many States have empowered district-level bureaucrats, mostly district Collectors, to act against sarpanches for official misconduct.
  - **For example: Section 37** of the Telangana Gram Panchayat Act allows District Collectors to suspend and dismiss incumbent sarpanches.

#### Grounds can Collectors act against sarpanchs:

- **Abuse of power**, embezzlement, or misconduct
- **Refusal to “carry out the orders of the District Collector** or Commissioner or Government for the proper working of the concerned Gram Panchayat”.

#### Case Study:(Political intervention)

- **Survey of sarpanches in Haryana’s Palwal district:**
  - **They spend a substantial amount of time** visiting government offices and meeting local bureaucrats, and waiting to be seen or heard.
  - **Sarpanchs reported** that they need to be in the “good books” of politicians and local bureaucrats if they wanted:
    - Access to discretionary resources
    - Timely disbursement of funds
    - Able to successfully execute any project or programme in their village.

#### Constraints on how panchayats can use the funds allocated to them:

- **State governments often impose spending limits** on various expenditures through panchayat funds.
  - This could include activities such as purchasing posters of national icons, refreshments for visiting dignitaries etc
- **In almost all States, there is a system of double authorisation** for spending panchayat funds.
  - **Apart from sarpanchs**, disbursement of payments requires bureaucratic concurrence.

#### Sources of funds for Panchayats:

- **Their own sources of revenue:** local taxes, revenue from common property resources, etc.
- **Grants in aid** from the Centre and State governments
- **Discretionary** or scheme-based funds.

#### Way Forward

- **Sarpanchs** need to have administrative or financial autonomy for meaningful decentralization.
- **The situation in Telangana is a reminder for State governments** to re-examine the provisions of their respective Gram Panchayat laws and consider greater devolution of funds, functions, and functionaries to local governments.
- **India has limited decentralization** because if local governments get genuine autonomy to allocate the monies, power will shift from the MLAs and State government-controlled bureaucracy to the sarpanch.
- **The role and responsibilities of local governments** should be foregrounded by normative values which have found expression, at least in some regard, in the Constitution.
- **As India is undergoing a centralizing shift** in its politics, economy, and culture, there’s also been a renewed assertion of federalism.



**Context:**

- **Recently**, Supreme Court ruled that all women, irrespective of their marital status, are entitled to safe and legal abortion.

**More about the ruling**

- **Issue:**
  - The Medical Termination of Pregnancy (MTP) Act of 1971 and its Rules of 2003 prohibit unmarried women who are between 20 weeks to 24 weeks pregnant to abort with the help of registered medical practitioners.
- **SC's Judgement:**
  - In a landmark judgement, the country's apex court said that the rights available to married women under the **Medical Termination of Pregnancy Act, 1971**, to abort a foetus will also be available to unmarried women.
  - Court said that the **"artificial distinction" between married and unmarried women** cannot be sustained, and women must have the autonomy to have free exercise of these rights.
- **Marital rape:**
  - The bench also noted that for the **sole purpose of the MTP Act**, the meaning of rape must include marital rape.

**Significance of the ruling**

- **On the same level:**
  - The judgement would put unmarried women on par with anguished women with less than 20-week-old pregnancies.
- **Similar risks for both:**
  - Unmarried women run the danger of suffering a mental breakdown because they had conceived due to the failure of "family planning devices or methods".
    - Medical risk is the same for both married and unmarried women
  - Safe abortion practice has been a concern in our country, and with this judgement, we can expect a reduction in morbidity and mortality associated with unsafe abortion practice.
- **International significance:**
  - The significant decision came months after the US Supreme Court overturned the historic 1973 Roe v Wade decision in a 6-3 decision that made abortion a constitutional right in the country.

**Salient features of the "Medical Termination of Pregnancy Act 2021":**

- **Abortions before 20 weeks of pregnancy:**
  - Terminating a pregnancy up to 20 weeks will only require the medical advice of one doctor.
- **Abortions up to or beyond 24 of pregnancy:**
  - Abortion is legal for women in certain circumstances **up to 24 weeks**.
  - It would include:
    - survivors of rape, victims of incest and other vulnerable women (like differently-abled women, minors) etc.
  - Opinion of 2 providers is required for termination of pregnancy of 20-24 weeks of gestation.
  - A **state-level medical board** will be set up to decide:
    - if pregnancy may be terminated beyond 20 months till 24 months.
    - Such a decision can be taken by the medical board only after
      - due consideration and
      - ensuring that the procedure would be safe for the woman.
      - The time frame available to the Medical Board is 3 days.
  - **The upper gestation limit does not apply** in cases of **substantial foetal abnormalities** diagnosed by the **Medical Board**.
- **Anonymity:**
  - **Name and other particulars of a woman** whose pregnancy has been terminated **shall not be revealed** except to a person authorised in any law for the time being in force.
- **Marital and age criteria:**

- Unmarried women can also access abortion under the above-mentioned conditions because it does not mention the requirement of spousal consent.
- If the woman is a minor, however, the consent of a guardian is required.
- **Intentionally causing a miscarriage:**
  - Section 312 of the Indian Penal Code holds intentionally causing a miscarriage as a criminal offence.

#### Significance of the MTP Act

- **Constitutional right:**
  - The **reproductive choice** is personal liberty guaranteed **under Article 21** of the Indian constitution.
- **Reproductive Rights of a Woman:**
  - The laws provide greater reproductive rights and dignity to women as abortion is considered an important aspect of the reproductive health of women.
- **Right to Privacy:**
  - The rape victims and vulnerable victims are also benefitted from Privacy Clause.
- **Encouragement to Safe Abortion:**
  - Deaths and injuries from unsafe abortions are largely preventable provided services are performed legally by trained practitioners.
  - The procedures are performed under proper medical and surgical supervision if done in the hospital setting.
  - If termination pills are taken at home, it must be under medical supervision and follow up.

#### Criticisms:

- **No Personal Choice:**
  - The boards are unnecessary and an invasion of privacy of the pregnant women which pushes the laborious process a woman had to undergo in order to get an abortion.
  - As the law does not permit abortion at will, critics say that it pushes women to access illicit abortions under unsafe conditions.
- **Increase in Gestational limit only in certain cases:**
  - It enhances the gestational limit for legal abortion from 20 to 24 weeks only for specific categories of women.
  - A woman who does not fall into these categories would not be able to seek an abortion beyond 20 weeks.
- **Shortage of medical staff:**
  - According to a 2018 study in the Lancet, 15.6 million abortions were accessed every year in India as of 2015.
  - The Act requires abortion to be performed only by doctors with specialisation in gynaecology or obstetrics.
  - However, the Ministry of Health and Family Welfare's 2019-20 report on Rural Health Statistics indicates that there is a 70% shortage of obstetrician-gynaecologists in rural India.

#### Way ahead

- Access to legal and safe abortion is an integral dimension of sexual and reproductive equality and must be a crucial element of conventional society.

## GOVERNANCE

### FREE FOODGRAINS SCHEME

#### Why in News?

- Recently, the Union Ministry of Consumer Affairs, Food and Public Distribution issued a notification to provide free foodgrains (rice, wheat and coarse grains) to all eligible households under the National Food Security Act, 2013, for one year from January 1, 2023.
- The government, however, discontinued the Pradhan Mantri Garib Kalyan Anna Yojana.

#### What are Coarse Cereals?

- Coarse cereals are traditionally grown in resource-poor agro-climatic regions of the country.
  - Agro-climatic zone is a land unit in terms of major climates suitable for a certain range of crops and cultivars.
- Sorghum, pearl millet, maize, barley, finger millet and several small millets such as kodo millet, little millet, foxtail millet, proso millet and barnyard millet together called coarse cereals.
  - Sorghum, pearl millet, finger millet, maize and small millet (barnyard millet, proso millet, kodo millet and foxtail millet) are also called nutri-cereals.
- Coarse cereals are known for their nutri-rich content and having characteristics like drought tolerance, photo-insensitivity and resilient to climate change etc.

#### What is NFSA?

- **Notified On:**
  - 10<sup>th</sup> September, 2013.
- **Objective:**
  - To provide for food and nutritional security in the human life cycle approach, by ensuring access to adequate quantities of quality food at affordable prices to people to live a life with dignity.
- **Coverage:**
  - 75% of the rural population and upto 50% of the urban population for receiving subsidised foodgrains under the Targeted Public Distribution System (TPDS).
  - Overall, NFSA covers about 81.35 crore citizens.
- **Eligibility:**
  - Priority Households are to be covered under TPDS, according to guidelines by the State government.
  - Households are covered under the Antyodaya Anna Yojana.
- **Provisions:**
  - 5 Kgs of foodgrains per person per month at Rs. 3/2/1 per Kg for rice/wheat/coarse grains.
  - The existing AAY household will continue to receive 35 Kgs of foodgrains per household per month.
  - Meal and maternity benefits of not less than Rs. 6,000 to pregnant women and lactating mothers during pregnancy and six months after child birth.
  - Meals for children upto 14 years of age.
  - Food security allowance to beneficiaries in case of non-supply of entitled foodgrains or meals.
  - Setting up grievance redressal mechanisms at the district and state level.

#### What are Government Initiatives in this Regard?

- National Food Security Mission
- Rashtriya Krishi Vikas Yojana (RKVY)
- Integrated Schemes on Oilseeds, Pulses, Palm oil and Maize (ISOPOM)
- eNAM Portal

#### Questions For Practice

**Q.** Hunger and Poverty are the biggest challenges for good governance in India still today. Evaluate how far successive governments have progressed in dealing with these humongous problems. Suggest measures for improvement.

**Q.** What are the reformative steps taken by the Government to make the food grain distribution system more effective?

**Q.** What are the major challenges of Public Distribution System (PDS) in India? How can it be made effective and transparent?

## NCW'S CONCERNS OVER SEXUAL ASSAULT

### Why in News?

- The **National Commission for Women (NCW)** has asked all States to ensure strict implementation of the sexual harassment at workplace law.

### What are the Concerns of NCW?

- The NCW has expressing concern over incidents of sexual harassment at coaching centres and educational institutes and asked to ensure strict implementation of the **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013** and guidelines established thereunder.
- In recent years, sexual harassment at workplace is **becoming one of the most pressing issues affecting women across the globe.**
- Nearly 31,000 complaints of crimes committed against women were received by the NCW in 2022, the highest since 2014.
  - About 54.5 % of the complaints **were received from Uttar Pradesh.** Delhi recorded 3,004 complaints, followed by Maharashtra (1,381), Bihar (1,368) and Haryana (1,362).
- Crimes that women were **subjected to: Domestic violence, Harassment of married women or dowry harassment, Sexual harassment at workplace, Rape and attempt to rape, Cyber crimes.**

### What is Protection of Women Against Sexual Harassment Act, 2013

- **Background:** The Supreme Court in a landmark judgement in the *Vishakha and others v State of Rajasthan 1997* case gave 'Vishakha guidelines'.
  - These guidelines formed the basis for the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 ("Sexual Harassment Act").
- **Mechanism:** The Act defines sexual harassment at the workplace and creates a mechanism for redressal of complaints.
  - Every employer is required to **constitute an Internal Complaints Committee at each office or branch** with 10 or more employees.
  - The Complaints Committees have the powers of civil courts for gathering evidence.
  - The Complaints Committees are required to provide for conciliation before initiating an inquiry if requested by the complainant.
- **Penal Provisions:** Penalties have been prescribed for employers. Non-compliance with the provisions of the Act shall be punishable with a fine.
  - Repeated violations may lead to **higher penalties and cancellation of license or registration to conduct business.**
- **Responsibility of Administration:** The State Government will notify the District Officer in every district, who will constitute a Local Complaints Committee (LCC) so as to enable women in the unorganised sector or small establishments to work in an environment free of sexual harassment.

### What is the Background & Mandate of NCW?

- **About:**



- Under the National Commission for Women Act, 1990, the NCW was set up as a **statutory body in January 1992**.
- The First Commission was **constituted on 31<sup>st</sup> January 1992 with Mrs. Jayanti Patnaik as the Chairperson**.
  - The commission consists of a chairperson, a member secretary and five other members. The chairperson of the NCW is nominated by the Central Government.
- **Mandate and Functions:**
  - Its mission is to **strive towards enabling women to achieve equality and equal participation in all spheres of life** by securing her due rights and entitlements through suitable policy formulation, legislative measures, etc.
  - Its functions are to:
    - Review the **constitutional and legal safeguards for women**.
    - Recommend remedial legislative measures.
    - Facilitate redressal of grievances.
    - Advise the Government on all policy matters affecting women.
  - It has received a **large number of complaints and acted suo-moto in several cases to provide speedy justice**.
  - It took up the issue of **child marriage**, sponsored legal awareness programmes, Parivarik Mahila Lok Adalats and reviewed laws such as:
    - **Dowry Prohibition Act, 1961,**
    - **Pre-Conception and Pre-Natal Diagnostic Techniques Act 1994,**
    - Indian Penal Code 1860.

### What are the major Legal Frameworks for Welfare of Women?

#### Constitutional Safeguards:

- **Fundamental Rights:**
  - It guarantees all Indians the right to equality (Article 14), no discrimination by the State on the basis of gender (Article 15(1)) and special provisions to be made by the State in favour of women (Article 15(3)).
- **Fundamental Duties:**
  - It ensures that practices derogatory to the dignity of women are prohibited under Article 51 (A).

#### Legislative Framework:

- Protection of Women from Domestic Violence Act, 2005
- The Dowry Prohibition Act, 1961
- The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013
- The Protection of Children from Sexual Offences (POCSO), 2012

#### Women Empowerment Schemes:

- **Beti Bachao Beti Padhao Scheme**
- **One Stop Centre Scheme**
- UJJAWALA: A Comprehensive Scheme for Prevention of trafficking and Rescue, Rehabilitation and Re-integration of Victims of Trafficking and Commercial Sexual Exploitation
- **SWADHAR Greh**
- **NARI SHAKTI PURASKAR**
- **Mahila police Volunteers**
- **Mahila Shakti Kendras (MSK)**
- **NIRBHAYA Fund.**

#### Way Forward

- There is a need to implement **JS Verma Committee recommendations** on Sexual Harassment at the Workplace Act:

- **Employment Tribunal:** Setting up of an employment tribunal instead of an internal complaints committee (ICC) in the Sexual Harassment at the Workplace Act.
- **Power to Form Own Procedure:** To ensure speedy disposal of complaints, the committee proposed that the tribunal should not function as a civil court but may choose its own procedure to deal with each complaint.
- **Expanding Scope of Act:** Domestic workers should be included within the purview of the Act.
  - The Committee said any “unwelcome behavior” should be seen from the subjective perception of the complainant, thus broadening the scope of the definition of sexual harassment.
- Women's role is continuously expanding in today's India and the expansion of the role of **the NCW is the need of the hour.**
  - Further, the State Commissions must also widen their ambit.
- Violence against women continues to be an obstacle to achieving equality, development, peace as well as to the fulfillment of women and girls' human rights.
  - All in all, the promise of the **Sustainable Development Goals (SDGs)** - to leave no one behind - cannot be fulfilled without putting an end to violence against women and girls.
- Crime against women cannot be resolved in the court of law alone. **A holistic approach & changing the entire ecosystem is what is required.**
  - All the stakeholders need to get their act together, including Law makers, police officers, forensic dept, prosecutors, judiciary, medical & health dept, NGOs, rehabilitation centres.

### Question For Practice

**Q.** We are witnessing increasing instances of sexual violence against women in the country. Despite existing legal provisions against it, the number of such incidences is on the rise. Suggest some innovative measures to tackle this menace.

## ROAD ACCIDENTS IN INDIA

### Why in News?

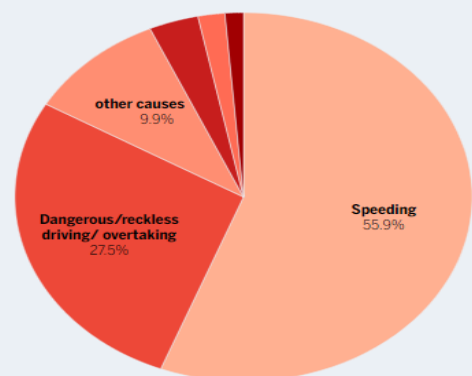
- As per the Minister of Road Transport and Highways the **Indian road accident scenario, with 415 deaths and many injured every day, is more severe than Covid-19.**

### Road Accidents in India: What's the Scenario?

- **Present Situation:**
  - **Over 1.5 lakh people died from road accidents in 2021**, and this has been the trend for several years.
  - According to **National Crime Records Bureau (NCRB)** data from 2021, driving under the influence of drugs/alcohol contributed to **1.9% of deaths from accidents.**
  - Further, nearly **90% of deaths on the road were due to speeding, overtaking, and dangerous driving.**
  - According to the **World Bank's** data from 2019, **India ranked first among the top 20 countries for road accidents.**
- **Causes:**
  - **Infrastructural Deficits:** Pathetic conditions of roads and vehicles, poor visibility and poor road design and engineering – including quality of material and construction, especially a single-lane with a sharp curve.
  - **Negligence and Risks:** Over speeding, driving under the influence of alcohol or drugs, tiredness or riding without a helmet, driving without seatbelts.
  - **Distraction:** Talking over mobile phones while driving has become a major cause of road accidents.

### Major causes of road accident deaths in 2021

Speeding (55.9%)    Dangerous/reckless driving/ overtaking (27.5%)  
 other causes (9.9%)    Poor weather conditions (3.5%)  
 Driving under influence of alcohol/drugs (1.9%)  
 mechanical defects in motor vehicles (1.3%)



- **Overloading:** To save on the cost of transportation.
- **Weak Vehicle Safety Standards in India:** In 2014, crash tests carried out by the **Global New Car Assessment Programme (NCAP)** revealed that some of India's top-selling car models have failed the UN (United Nations)'s frontal impact crash test.
- **Lack of Awareness:** Regarding the importance of safety features like airbags, **Anti lock Braking system** etc.
- **Impacts:**
  - **Economy:**
    - As per the World Bank, **road crashes cost the Indian economy 3 to 5 percent of GDP each year.**
  - **Social:**
    - **The Burden on Households:**
      - ✓ Every road accident death causes the depletion of nearly seven months' household income in poor families and pushes the kin of victims into a cycle of poverty and debt.
    - **Vulnerable Road Users (VRUs):**
      - ✓ VRUs bear a disproportionately large burden of road crashes and **account for more than half of all road crash deaths** and serious injuries in the country.
      - ✓ It is often the poor, especially male road-users of working age, that constitute the category of VRUs.
  - **Gender-Specific Impact:**
    - Women in the families of victims bore the burden across poor and rich households, often taking up extra work, assuming greater responsibilities, and performing caregiving activities.
    - According to World Bank's report "**Traffic Crash Injuries and Disabilities: The Burden on Indian Society, 2021,**
      - ✓ About 50% of women were **severely affected** by the decline in their household income after a crash.
      - ✓ About 40% of women **reported a change in their working patterns post-accident**, while around 11% reported taking up extra work to deal with the financial crisis.
      - ✓ The **income decline for low-income rural households** (56%) was the most severe compared to low-income urban (29.5%) and high-income rural households (39.5%).

#### What Steps can be Taken in this Regard?

- **Issues with Motor Vehicles (MV) (Amendment) Act, 2019:** The **MV (Amendment) Act, 2019** increased the existing fines for violating traffic rules which were criticised on the pretext that the (fine) paying capacity of an average Indian was still limited.
  - Also, **only a few cases of traffic violations are contested by the accused in a court of law.**
  - Therefore, the expected impact of the deterrent provisions of the amended law could not be realised on ground.
- **Road Safety Zones:** It is proposed to set up smaller areas, parts of major roads and highways, as "**ideal**" road safety zones. These zones will incubate locally suitable, comprehensive safe road practices.
- **A New Administrative Structure:** The administrative structure for the implementation of road safety can be set up in three tiers:
  - **Tier 1:** It would be the **Managing Group (MG)**, which would look after day-to-day operations and would be autonomous and financially empowered.
  - **Tier 2:** It would have **district-level monitoring.** This is where urgent solutions would be sought, budgetary allocations made, and review modes fixed. It would also ensure adherence to targets.
  - **Tier 3:** It would have **top management and control**, represented at the level of the Union or state government.
- **Speed-Detection Devices:** Installation of proven speed detection devices such as Radar and speed detection camera systems can be introduced.
  - **Chandigarh and New Delhi have already implemented the service of speed detection devices** such as digital still cameras (Chandigarh), speed cameras (New Delhi), and Radar gun (New Delhi) in traffic control.



- **Radar Gun is a handheld device used by traffic police** to estimate the speed of a passing vehicle.
- **Improved Safety Measures:** Speed humps, raised platforms, Roundabouts, and optical markings can reduce road accidents to a great extent.
- **Better Centre-State Coordination:** It is a high time that we realise that lives cannot be lost at the cost of poor enforcement of traffic laws.
  - It is **important for the States and the Centre to be on the same page** in improving and strengthening the infrastructure of States by enabling more funds.
  - Merely and only fixing targets is not a pragmatic approach to reducing road accident fatalities. **Putting dedicated efforts into achieving those targets is also required.**

#### What are the Initiatives Related to Road Safety?

- **Global:**
  - **Brasilia Declaration on Road Safety (2015):**
    - The declaration was signed at the second Global High-Level Conference on Road Safety held in Brazil. India is a signatory to the Declaration.
    - The countries plan to achieve **Sustainable Development Goal 3.6** i.e., to halve the number of global deaths and injuries from road traffic accidents by 2030.
  - **Decade of Action for Road Safety 2021-2030:**
    - The **UN General Assembly** adopted resolution "Improving global road safety " with the ambitious target of preventing at least **50% of road traffic deaths and injuries by 2030.**
    - The Global Plan aligns with the **Stockholm Declaration**, by emphasizing the importance of a holistic approach to road safety.
  - **The International Road Assessment Programme (iRAP) :**
    - It is a registered charity dedicated to saving lives through safer roads.
- **India:**
  - **Motor Vehicles Amendment Act, 2019:**
    - The Act **hikes the penalties for traffic violations, defective vehicles, juvenile driving** etc.
    - It provides for a **Motor Vehicle Accident Fund**, which would provide compulsory insurance cover to all road users in India for certain types of accidents.
    - It also **provides for a National Road Safety Board**, to be created by the Central Government.
  - **The Carriage by Road Act, 2007:**
    - The Act provides for the **regulation of common carriers, limiting their liability and declaration of the value of goods** delivered to them to determine their liability for loss of, or damage to, such goods occasioned by the negligence or criminal acts of themselves, their servants or agents and for matters connected therewith or incidental thereto.
  - **The Control of National Highways (Land and Traffic) Act, 2000:**
    - The Act provides for the control of land within the National Highways, right of way and traffic moving on the National Highways and also for removal of unauthorized occupation thereon.
  - **National Highways Authority of India Act, 1998:**
    - The Act provides for the constitution of an authority for the development, maintenance and management of NHs and for matters connected therewith or incidental thereto.

#### NATIONAL EXIT TEST

##### Why in News?

- Recently, the **National Medical Commission (NMC)** issued the proposed draft regulations related to the **National Exit Test (NExT).**

##### What is the Objective of the Regulation?

- To provide **consistency across the nation in the summative evaluation** with regard to the minimum common standards of education and training for a medical graduate.
- The objective of the NExT is to **improve the quality of healthcare in India** by ensuring that **all doctors have a minimum level of competency and knowledge** before they begin practicing medicine.

### What is National Exit Test?

- The **NExT** is a medical licensing exam that is designed to assess the competency of medical graduates.
- **Students who received their medical degrees from NMC approved medical institutions and overseas students also will have to qualify the National Exit Test.**
- To register for medical practice in India, they must pass **the NExT** test.
- This centralized common exam will be conducted by a body formed by the commission for this purpose.
  - **National Medical commission (Amendment) Bill,2022**, proposes an autonomous board, '**Board of Examinations in Medical Sciences**', which, when comes to effect, will be responsible for holding the NExT exam.
  - Currently, the **National Board of Examinations in Medical Sciences (NBEMS)** is responsible for holding exams like **NEET PG** (National Eligibility cum Entrance Test Postgraduate), **Foreign Medical Graduate Examination (FMGE)**.
    - NExT will take the place of tests like **FMGE** and **NEET PG**.
    - The NExT will comprise two separate exams called 'Steps'.

### Who is Eligible to Appear in the NExT?

- All the students who have completed the **final MBBS course** from a **Commission-recognised medical college** would be eligible to appear in the exam.
- There is **no restriction in the number of attempts** provided that the candidate passes both the steps within **10 years** of joining **MBBS**.
- Just by clearing the **NExT** exam the foreign medical graduates will get licentiate to become practicing doctors.

### What is the National Medical Commission?

- **About:**
  - The **National Medical Commission (NMC)** is a **statutory body** in India that was established in **2019** by the Indian government to replace the **Medical Council of India (MCI)**.
  - The **NMC** has been constituted by an act of Parliament known as **National Medical Commission Act, 2019**
  - The **NMC** is a regulatory body for the medical education sector in India.
- **Mission and Vision:**
  - The Aim of the **National Medical Commission** are to
    - Improve access to quality and affordable medical education.
    - Ensure availability of adequate and high-quality medical professionals in all parts of the country.
    - Promote equitable and universal healthcare that encourages community health perspective and makes services of medical professionals accessible to all the citizens.
    - Encourages medical professionals to adopt the latest medical research in their work and to contribute to research.
    - Objectively assess medical institutions periodically in a transparent manner.
    - Maintain a medical register for India.
    - Enforce high ethical standards in all aspects of medical services.
    - Have an effective grievance redressal mechanism.
    - It also has the authority to **regulate fees for medical courses** and to conduct inspections of medical colleges to ensure that they meet the necessary standards.

## JAIN COMMUNITY PROTESTS

### Why in News?

- The **Jain community** has been protesting over demands related to two holy sites — **Sammed Shikhar on Parasnath hill in Jharkhand and Shatrunjaya hill in Palitana of Gujarat.**

- In Jharkhand, the issue is about Parasnath hill being declared a tourist spot and an **eco-sensitive zone** without consulting the people from the Jain community, while in Gujarat, the row is over the vandalising of a shrine and related security concerns in Shatrunjaya Hill.

### What are the Key Facts about Parasnath Hills and Shatrunjaya Hill?

- **Parasnath Hills:**
  - **Parasnath Hills** are a range of hills located in Giridih district of Jharkhand.
  - The **highest peak is 1350 metres**. It is one of the most important pilgrimage centre for Jains. They call it Sammed Sikhar.
  - The hill is named after **Parasnath, the 23<sup>rd</sup> Tirthankara**.
  - Twenty of Jain Tirthankaras **attained salvation on this hill. For each of them there is a shrine (gumti or tuk)** on the hill.
  - Some of the temples on the hill are believed to be more than 2,000 years old.
  - The Santhals call it **Marang Buru, the hill of the deity**. They celebrate a **hunting festival on the full moon day in Baisakh (mid-April)**.
  - Every year, thousands of Jains from across the world undertake the 27 km long trek of climbing the hills to reach the summit.
- **Palitana and Shatrunjaya Hill:**
  - Shatrunjaya Hill is a sacred site containing hundreds of shrines in Palitana town, Bhavnagar District, Gujarat.
  - The shrines were **sanctified when Rishabha, the first Tirthankara of Jainism**, gave his first sermon in the temple on the hilltop.
  - It is one of the Jainism's holiest pilgrimage sites, the Shatrunjaya hill is an **incredible hill studded with temples, built over 900 years**.
  - It is said that Adinath (also known as Rishabha), the founder of Jainism, **meditated beneath the rayan tree at the summit**.

### What is Jainism?

- Jainism came to prominence in the **6<sup>th</sup> century B.C.**, when **Lord Mahavira** propagated the religion.
- There were **24 great teachers**, the last of whom was **Lord Mahavira**.
- These twenty-four teachers were called **Tirthankaras**-people who had attained all knowledge (Moksha) while living and preached it to the people.
- The first Tirthankara was **Rishabhatha**.
- The word Jaina comes from **the term Jina, meaning conqueror**.
- Tirthankara is a Sanskrit word meaning 'Ford maker', i.e., one who is able to ford the river, to cross beyond the perpetual flow of earthly life.
- Jainism attaches utmost importance to ahimsa or non-violence.
- It preaches **5 mahavratas (the 5 great vows)**:
  - Ahimsa (Non-violence)
  - Satya (Truth)
  - Asteya or Acharya (Non-stealing)
  - Aparigraha (Non-attachment/Non-possession)
  - Brahmacharya (Celibacy/Chastity)
- Among these 5 teachings, **the Brahmacharya (Celibacy/Chastity) was added by Mahavira**.
- The **three jewels or Triratna of Jainism include**:
  - Samyak Darshana (right faith).
  - Samyak Gyana (right knowledge).
  - Samyak Charitra (right conduct).
- Jainism is a religion of **self-help**.
  - There are no gods or spiritual beings that will help human beings.
  - It does not condemn the varna system.



- In later times, it got divided into two sects:
  - Shvetambaras (white-clad) under Sthalabahu.
  - Digambaras (sky-clad) under the leadership of Bhadrabahu.

### What is the Pilgrimage vs Tourism Debate?

- **Pilgrimage:**

- Pilgrimage is the purpose of traveling to the destination, which is **mostly focused on religion**. Pilgrimage shrines are **an important aspect of any religion's materiality** and sacred geography.
- Despite using the term Pilgrimage and Tourism interchangeably, the two cannot be mixed, if a pilgrimage shrine is declared a tourist spot, even people who may not have the distinct sensibilities for the shrine **may enter the sacred place, thus affecting the sanctity and the "purity" of the place**.
- Also, the sacred character of the place helps to protect the **entire landscape from degradation**.
  - Consider the sacred groves spread throughout India, protected by local deities of different communities and connected to people's behaviour in these places, showing us the **traditional example of ecological conservation practiced by local communities**.
- Therefore, declaring the area open for tourism may be doing more harm than good, not only to the community and its faith **but also to nature and its fragile ecosystem**.
  - We have seen what happened in Kedarnath, especially when the cloudburst occurred in June 2013.
  - The lack of planning, clearing of forests, and absence and violation of construction codes in a fragile Himalayan ecosystem **meant that a natural calamity turned into a human-made disaster**.

- **Tourism:**

- Tourism attracts more people in the country and thus creates more employment opportunity, also brings in **focus the importance of sites and need to preserve them**.
- Tourism as a form of soft power, helps in promoting cultural diplomacy, people to people connect and **thereby promotes friendship and cooperation between India and other countries**.
- The growth of domestic tourism largely depends on the Pilgrimage tourism in India and restricting any sort of tourism **may affect the economic growth of the place and of the country**.

### Way Forward

- Pilgrimage tourism is the type of tourism that entirely or powerfully motivates tourists for the achievement of religious attitude and practices. Thus, pilgrimage and "religious tourism could become an enduring source of employment and income, without sacrificing the important social and religious functions of the sanctuaries and their pilgrimages.

## NATIONAL GEOSPATIAL POLICY (NGP) 2022

### Why in News?

- The **Ministry of Science and Technology** has notified a **National Geospatial Policy (NGP) 2022**, with the goal of making India a world leader in the Global Geospatial Sector.
- India's geospatial economy is expected to cross Rs 63,000 crore by 2025 at a growth rate of 12.8% and to provide employment to more than 10 lakh people.

### What is Background?

- In 2021, the Ministry of Science and Technology issued "**Guidelines for acquiring and producing Geospatial Data and Geospatial Data Services including Maps**".
- While the Guidelines deregulated the Geospatial sector by liberalizing Geospatial data acquisition/production/ access, the 2022 Policy takes it further by laying down an overarching framework for holistic development of the Geospatial ecosystem.

### What is National Geospatial Policy 2022?

• **About:**

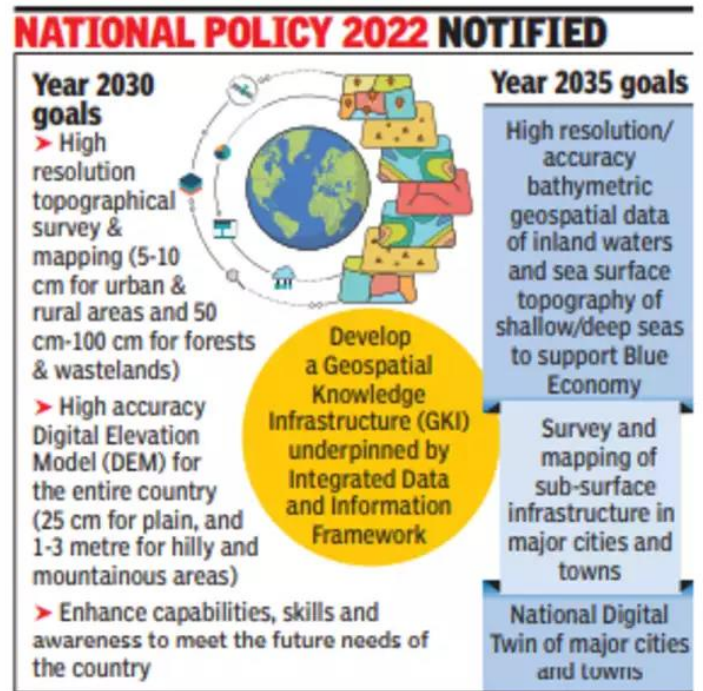
- It is a citizen-centric policy based on Geo-Spatial technology, which seeks to **strengthen the Geospatial sector to support national development**, economic prosperity and a thriving information economy.
- The policy is aimed to **set up high resolution topographical survey and mapping, with a high-accuracy Digital Elevation Model (DEM) by 2030.**

• **Vision and Goals:**

- It aims to make India a **World Leader in Global Geospatial space** with the best in the class ecosystem for innovation.
- To develop a **coherent national framework in the country** and leverage it to move towards a digital economy and improve services to citizens.
- To develop **Geospatial infrastructures, Geospatial skill and knowledge, standards, Geospatial businesses.**
- To promote **innovation and strengthen the national and sub-national arrangements for generation** and management of Geospatial information.

• **Institutional framework:**

- A Geospatial Data Promotion and Development Committee (GDPDC) at the **national level shall be the apex body for formulating and implementing strategies related** to promotion of the Geospatial sector.
- GDPDC would replace and subsume the functions and powers of the National Spatial Data Committee (NSDC) constituted in 2006 and GDPDC constituted in 2021.
- Department Of Science & Technology shall continue to be the **nodal Department of the Government and GDPDC shall make suitable recommendations to DST** in the discharge of its functions relating to the Geospatial regime.



**Milestones towards Realization of the Policy's Vision:**

- **Year 2025:**
  - Put in place an enabling policy and legal framework that supports liberalization of Geospatial sector and **democratization of data for enhanced commercialization with Value Added Services.**
- **Year 2030:**
  - **High resolution topographical survey & mapping** (5-10 cm for urban & rural areas and 50 cm-100 cm for forests & wastelands).
- **Year 2035:**
  - High resolution/accuracy **Bathymetric Geospatial Data of inland waters and sea surface topography of shallow/deep seas** - to support Blue Economy.
  - **National Digital Twin of major cities and towns.** The Digital Twin is a virtual replica of a physical asset, process or service that lies at the core of the new digital revolution.
  - National Digital Twin would be an ecosystem of smart, dynamic, connected Digital Twins, enabled by secure and interoperable data sharing, to facilitate better decision-making.

**Significance:**

- Geospatial technology and data can act as agents of transformation for achieving the **Sustainable Development Goals (SDGs).**

- This is a vibrant initiative to promote the Start-Up & reduce the last mile dependencies on the foreign soil.
- Geospatial data play a vital role in a **wide spectrum of frequencies for critical data management applications**, such as military operations, disaster and emergency management, environmental monitoring, land and city planning.

#### What are the Related Concerns?

- **Complex Data:**
  - Geospatial data can be described as complex data objects with complex relationships among them.
  - Securing this type of data poses major challenges and bottlenecks that are yet to be fully understood and addressed.
- **Security Concerns:**
  - Although a variety of models and techniques are available to manage access and share geospatial data, **little attention has been paid to addressing the National security concerns**, such as access control, securities and privacy policies, the development of secure and in particular interoperable GIS applications in the areas of Defence (Tri-Services).
- **Data Misuse and Privacy Violations:**
  - If the entire body of geospatial data would be made available by simply integrating the data from the different repositories, there is **severe chances of potential data misuse and privacy violations**.
  - And “also sensitive information such as building ownerships might be revealed or information about **critical infrastructure could become publicly accessible** and it is a major concern in context to the applications in Defence.

#### What is Geospatial Technology?

- Geospatial technology uses tools like **GIS (Geographic Information System), GPS (Global Positioning System) and Remote Sensing** for geographic mapping and analysis.
- These tools capture spatial information about objects, events and phenomena (indexed to their geographical location on earth, geotag). The location data may be Static or Dynamic.
- Static location data include **position of a road, an earthquake event or malnutrition among children in a particular region while dynamic location data** include data related to a moving vehicle or pedestrian, the spread of an infectious disease etc.
- The technology may be **used to create intelligent maps to help identify spatial patterns in large volumes of data**.
- The technology facilitates **decision making based on the importance and priority of scarce resources**.

#### Way Forward

- Given the number of people and organizations involved in a disaster preparation scenario, security measures must be taken to provide users and applications only with data on a need-to-know basis.
- A clear roadmap should be drawn and SOP should be developed in **National Geospatial Policy 2022** for the National Securities Issues for the country wherein it is the three services, Para military or Critical Infrastructure Sectors.

### CANCELLATION OF BAUXITE LEASE

#### Why in News?

- Ahead of Odisha State Pollution Control Board's (OSPCB) hearing on **Environment Clearance of Mali Parwat Bauxite Mining Lease**, local people have started protests demanding permanent cancellation of the lease.

#### What is the Issue?

- **Background:**
  - The opposition to the mining activities in Maliparbat dates back to 2003, when a public hearing was organized by the Odisha SPCB for environmental clearance.
  - After a lease was granted to Hindalco in 2007, **villagers had alleged that their grievances and objections to the project were ignored**.
  - According to activists, the company's **Environment Impact Assessment** report mentioned that **there was no water-body in Maliparvat**.



- Villagers had, however, argued that 36 perennial streams flow down from the Maliparvat, which **was the source of water for villagers for their agricultural and drinking purposes** and the **bauxite mining project should be cancelled**.
- Till 2011 the company **failed to carry out mining and subsequently, its environmental clearance expired**. But, in 2012-2014 it **started mining illegally without going in for renewal of environmental clearance**.
- The industry has got a **fresh lease for 50 years for which the public hearing was necessitated**.
- **Concerns:**
  - Tribals residing in nearby villages have alleged that mining activities in Maliparbat would affect **around 42 villages under Sorishapodar**, Dalaiguda and Pakhahola panchayats.
  - Environmentalists have also said that mining can **deplete water sources from around 32 perennial streams** and four canals in Maliparbat, adversely affecting the livelihoods of the tribals.
    - The Mali and forest area are **inhabited by members of Kondha, Paraja and Gadaba tribes**.

### What is the Environment Impact Assessment?

- It can be **defined as the study for predicting the effect of a proposed activity/project on the environment**.
- It is statutory under the **Environment Protection Act, 1986** for some projects.
- **Process:**
  - Screening based upon scales of investment, type of development, and location of the development is done to see whether a project requires an environmental clearance as per the statutory notifications.
  - Scoping is a process of detailing the Terms of Reference (ToR) of EIA, that is the main issues or problems in the development of a project.
  - Impact Prediction involves mapping the environmental consequences of the significant aspects of the project and its alternatives.
- The public mandatorily needs to be informed and consulted on the proposed development after the completion of the EIA report.

### What is Bauxite?

- **About:**
  - Bauxite is an ore of aluminium. It is a rock **consisting mainly of hydrated aluminium oxides**.
  - The deposits of Bauxite are mainly associated with laterites and occur as capping on hills and plateaus, except in **coastal areas of Gujarat and Goa**.
  - Bauxite is primarily used to **produce alumina through the Bayer process**.
  - Like many metals, world demand for aluminium, and therefore **bauxite, has grown substantially over the past several years in response to economic growth in emerging Asian economies**.
- **World Distribution:**
  - **Reserves:** As per **2015 data**, world bauxite reserves are estimated at **30 billion tonnes and are located mainly** in Guinea (25%), Australia (20%), Vietnam (12%), Brazil (9%), Jamaica (7%), Indonesia (4%) and China (3%).
  - **Australia continued to be the major producer** and accounted for about 29% share in the total production, followed by China (19%), Guinea (18%), Brazil (10%) and India (7%).
- **Distribution in India:**
  - **Reserves:** By States, **Odisha alone accounts for 51% of country's resources of bauxite followed by** Andhra Pradesh (16%), Gujarat (9%), Jharkhand (6%), Maharashtra (5%) and Madhya Pradesh & Chhattisgarh (4% each) in 2019. Major bauxite resources are concentrated in the East Coast bauxite deposits in Odisha and Andhra Pradesh.
  - **Production:** In terms of production, in 2020, **Odisha accounted for 71% of the total output** followed by Gujarat (9%) and Jharkhand (6%).

### Question For Practice

Q. 1 Which of the following minerals are found in a natural way in the State of Chhattisgarh?

## THE INDIAN TELEGRAPH (INFRASTRUCTURE SAFETY) RULES 2022

### Why in News?

- Recently, the **Department of Telecommunications** under the **Ministry of Communications** has formulated the **Indian Telegraph (Infrastructure Safety) Rules, 2022**.
- The **Central government** has envisioned fulfilling the **communication needs** of the **citizens and enterprises** through establishment of a **resilient, secure, accessible and affordable Digital Communications Infrastructure and Services**.

### What is the Indian Telegraph (Infrastructure Safety) Rules, 2022?

- Under the Rules, **any person who wishes to exercise a legal right to dig or excavate any property** which is likely to cause damage to a telegraph infrastructure **must give notice to the licensee**.
- The person digging or excavating shall take appropriate action on precautionary measures provided by the licensee.
- Any person, who has dug or excavated any property causing damage to a telegraph infrastructure, will be liable to pay the damage charges to the telegraph authority.
- Once the asset owner agencies map their underlying assets with GIS coordinates on **PM GatiShakti National Master Plan platform**, it will also be possible to know the presence of underlying utility assets, at the point of interest, before start of excavation.

### What are the Associated Advantages?

- Many utilities can be saved from **unwanted cuts** and **wasteful costs** towards **restoration**.
  - Thus, saving thousands of crores for businesses and associated tax loss to Government.
- Inconvenience caused to citizens because of frequent breakdown may be reduced due to better synergy between the agencies.

### What is PM Gati Shakti -National Master Plan for Multi-modal Connectivity?

#### • Aim:

- To ensure integrated planning and implementation of infrastructure projects in the next four years, with focus on expediting works on the ground, saving costs and creating jobs.
- Besides **cutting logistics costs**, the scheme is also aimed at increasing **cargohandling capacity** and reducing the turnaround time at ports to boost trade.
- It will help in fulfilling the **ambitious targets** set by the government for **2024-25**, including expanding the length of the **national highway network to 2 lakh kms**, creation of more than **200 new airports, heliports and water aerodromes**.
- **PM Gati Shakti is based on Six Pillars:**
  - **Comprehensiveness:** It will include all the existing and planned initiatives of various Ministries and Departments with one centralized portal. Each and every Department will now have visibility of each other's activities providing critical data while planning & execution of projects in a comprehensive manner.
  - **Prioritization:** Through this, different Departments will be able to prioritize their projects through cross-sectoral interactions.
  - **Optimization:** The National Master Plan will assist different ministries in planning for projects after identification of critical gaps. For the transportation of the goods from one place to another, the plan will help in selecting the most optimum route in terms of time and cost.
  - **Synchronization:** Individual Ministries and Departments often work in silos. There is lack of coordination in planning and implementation of the project resulting in delays. PM Gati Shakti will help in synchronizing the activities of each department, as well as of different layers of governance, in a holistic manner by ensuring coordination of work between them.
  - **Analytical:** The plan will provide the entire data at one place with GIS based spatial planning and analytical tools having 200+ layers, enabling better visibility to the executing agency.
  - **Dynamic:** All Ministries and Departments will now be able to visualize, review and monitor the progress of cross-sectoral projects, through the GIS platform, as the satellite imagery will give on-

ground progress periodically and progress of the projects will be updated on a regular basis on the portal. It will help in identifying the vital interventions for enhancing and updating the master plan.

- **Gati Shakti Digital Platform:**

- It involves the creation of a **common umbrella platform** through which **infrastructure projects** can be **planned and implemented** in an efficacious manner by way of coordination between various ministries/departments on a real-time basis.
- It is essentially a digital platform to bring 16 Ministries including Railways and Roadways together.

### Question For Practice

**Q.** The Gati-Shakti Yojana needs meticulous co-ordination between the government and the private sector to achieve the goal of connectivity. Discuss.

## FERTILIZERS

### In News

- The recent easing of global prices has boosted fertilizer availability and cut the subsidy bill.

### More about the news

- **The easing of global fertiliser prices has enabled the following:**
  - **Improvement of overall availability significantly:**
    - No major shortage of any fertilizer has been reported during the ongoing rabi cropping season.
    - Augmented fertiliser availability, coupled with good soil moisture conditions, has helped boost area sown under rabi crops, especially wheat, mustard, maize and masur (red lentil).
  - World prices cooling off should **translate into a reduction in the Centre's fertiliser subsidy outgo.**
- **Worsening of nutrition imbalances:**
  - The current fiscal has witnessed a worsening of nutrition imbalances. Consumption of both urea and DAP has shot up, with their sales for the year ending March 2023 likely to top 350 lt and 120 lt respectively.
  - **Consumption pattern:** Instead of balanced use of plant nutrients based on soil testing and specific crop requirement, Indian farmers are effectively applying just urea and DAP — both high-analysis fertilisers containing 46 per cent N and P respectively.

### Government's initiatives for promoting balanced use of Urea

- **Nutrient-based subsidy (NBS) regime:**
  - Government introduced a nutrient-based subsidy (NBS) regime in fertilisers with effect from April 2010, a key objective was to discourage farmers from applying too much urea, DAP and MOP.
    - Urea has 46% nitrogen (N), while DAP contains 46% phosphorus (P) plus 18% N and MOP has 60% potassium (K).
- **Neem-coated Urea:**
  - Government made the coating of urea with neem oil compulsory from 2015-16.
  - It was done to check illegal diversion of the heavily-subsidised fertiliser for non-agricultural uses, including by plywood, dye, cattle feed and synthetic milk makers.
  - **Significance:**
    - Neem oil supposedly also acted as a mild nitrification inhibitor, allowing a more gradual release of nitrogen.
    - Increased nitrogen use efficiency would, in turn, bring down the number of urea bags required per acre.
- **The Soil Health Card Scheme:** Soil health card provides information to farmers on nutrient status of their soil along with recommendations on appropriate dosage of nutrients to be applied for improving soil health and its fertility.
  - **Objectives:**



- To issue soil health cards every two years to all farmers, so as to provide a basis to address nutrient deficiencies in fertilization practices.
- **‘One Nation, One Fertilizer’ scheme:**
  - Under the scheme, all fertiliser companies, **State Trading Entities (STEs)** and **Fertiliser Marketing Entities (FMEs)** will be required to use a single **“Bharat” brand for fertilisers and logo** under the PMBJP.
    - The new “Bharat” brand name and PMBJP logo will cover two-thirds of the front of the fertiliser packet.

### Reasons behind this imbalance

- **Under-pricing of other fertilizers:**
  - Government has fixed maximum retail prices of Urea & DAP. It has informally-fixed MRPs for NPKS complexes and muriate of potash (MOP).
  - Prices of other fertilizers compared to Urea & DAP **are relatively higher**. So farmers have **little incentive to buy other fertilizers**.
  - The fact that DAP does not contain K, S or other macro and micro nutrients wouldn't matter to a majority of farmers.
  - For them, **choice of fertilisers is primarily a function of prices**.
- **Subsidisation & political motives:**
  - Under-pricing of urea (a historical phenomenon) and DAP (recent) is a product of subsidy-induced market distortions.
  - High government subsidies are behind the low pricing, and high sales, of these two fertilisers.
  - The compulsions of electoral politics have clearly trumped concerns over soil nutrient imbalances.
- **Supply-side constraints:**
  - India is facing a **tight supply position in fertilisers**, especially of phosphatic and potassic nutrients.
  - The challenges include securing **supply from new sources, costlier raw material, and logistics**.
  - The pandemic has impacted fertilizer production, import and transportation across the world.

### Suggestions & way ahead

- **Suggestions:**
  - To restrict DAP use to rice and wheat.
    - All other crops can meet their P requirement through SSP and complexes.
  - To raise SSP's acceptance by permitting sale only in granular, not powdered, form.
    - SSP powder is prone to adulteration with gypsum or clay.
    - Farmers can be assured of quality through granules, which will also promote slower release of P without drift during application.
- The ultimate aim should be to cap urea, DAP and MOP consumption. India, the expert points out, cannot sustain imports leading to their increasing application. Farmers must, instead, be nudged to use more of low-analysis complex fertilisers and SSP.

## MUNICIPAL FINANCES

### In News

- The study titled **“Report on municipal finances”** was published by the RBI.

### Key Points

- **Budgetary allocations & fund transfers:**
  - The **combined budget** of all the municipal corporations in India is much smaller than that of the Central and State governments.
  - The report reveals how municipal bodies are **increasingly dependent on fund transfers from the State and the Centre**, while their **revenue earning capacity is limited**.
- **Revenue raising of municipal corporations:**
  - Their revenue raising powers are curtailed according to the study.

- The municipal corporations don't borrow much, leaving them gasping for funds.
- **The share of own revenue** (both tax and non-tax) in the total revenue of urban local bodies in India has declined, while that of government transfers has increased.
  - **Spending:**  
About 70% of it gets spent on salaries, pensions and administrative expenses with the rest left for capital expenditure.
- **Tax earnings of municipal corporations:**
  - Taxes earned by municipal corporations in India are **grossly inadequate** to meet their **expenditure needs**.
  - In India, the own tax revenue of municipal corporations, comprising **property tax, water tax, toll tax and other local taxes**, formed **31-34% of the total revenue** in the FY18-FY20 period.
    - This share was low compared to many other countries and it also declined over time.
- **State-wise variations:**
  - Large variations can be observed if the municipal corporations' own tax revenue is sliced State-wise.
  - The own tax revenue of municipal corporations as a share of the State's GDP in 2017-18 crossed the 1% mark in **Delhi, Gujarat, Chandigarh, Maharashtra and Chhattisgarh**, while it was 0.1% or less in **Karnataka, Goa, Assam and Sikkim**.
- **Dependence on property taxes:**
  - Another major issue with the municipal corporations' revenue raising capabilities was their **dependence on property taxes**.
  - In 2017-18, the property taxes **formed over 40% of the municipal corporations' own tax revenue**.
  - Despite such dominance, property tax collection in India was much lower **compared to OECD countries** due to undervaluation, and poor administration, the report argues.

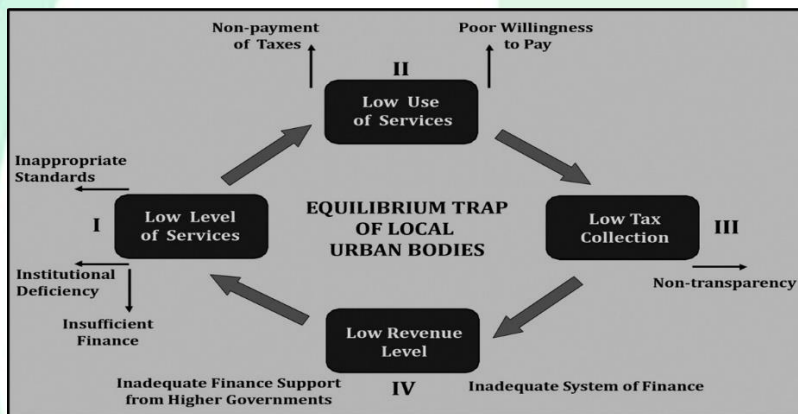
### About Urban local bodies (ULBs) in India

- **Establishment of ULBs in India:**
  - The 74th Constitution Amendment Act was passed in 1992 mandating the setting up and devolution of powers to urban local bodies (ULBs) as the lowest unit of governance in cities and towns.
- **Types of ULBs:**
  - There are several types of Urban Local bodies in India such as Municipal Corporation, Municipality, Notified Area Committee, Town Area Committee, Special Purpose Agency, Township, Port Trust, Cantonment Board etc.
- **Functions:**
  - These local bodies are entrusted with functions related to welfare, public health and safety, infrastructural works, and other activities related to city development.
- **Fiscal empowerment:**
  - Constitutional provisions were made for ULBs' fiscal empowerment.
  - The ULBs' key revenue sources are **taxes, fees, fines and charges, and transfers from Central and State governments**, which are known as inter-governmental transfers (IGTs).
  - The **share of own revenue** (including revenue from **taxes on property and advertisements**, and **non-tax revenue from user charges and fees from building permissions and trade licensing**) to total revenue is an important indicator of ULBs' fiscal health and autonomy.

### Challenges faced by ULBs

- **Fiscal challenges:**
  - Three decades since, **growing fiscal deficits, constraints in tax base expansion**, and **weakening of institutional mechanisms** that enable resource mobilisation remain challenges.
    - Revenue losses after the implementation of the **Goods and Services Tax (GST)** and the pandemic have exacerbated the situation.
  - **Lack of finances:**

- The **transfer of duties** from the national and subnational governments to local governments has **not always been accompanied by a corresponding transfer of financial authority**.
- The generated funds are mostly spent on revenue expenditure, leaving a much smaller pie for capacity building.
- **Over-reliance on property taxes:**
  - Over-reliance on property taxes has prevented local governments from fully utilising other revenue streams such as trade permits, entertainment taxes, mobile tower taxes, solid waste user fees, water fees, and value capture finance.
  - Property taxes are also not efficiently collected.
- **Other:**
  - ULBs across the country **lack autonomy in city management** and several city-level functions are managed by parastatals (**managed by and accountable to the state**).
  - Municipal administration in India suffers from **staffing issues** which leads to a **failure in delivering basic urban services**.
  - **Other concerns include**
    - Overstaffing of untrained manpower,
    - Shortage of qualified technical staff and managerial supervisors, and
    - Unwillingness to innovate in methods for service delivery.



### Suggestions & Way ahead

- The scale of municipal finances in India is undoubtedly inadequate. A ULB's own revenue resources are far below the estimated potential.
- As noted in the **Sustainable Development Goal (SDG) 11: Sustainable Cities and Communities**, an effective city government is essential for sustainable development.
  - Tapping into property taxes, other land-based resources and user charges are all ways to improve the revenue of a ULB.
  - inter-governmental transfers (IGTs) assume significance in the fiscal composition of ULBs, and a stable support from Central and State governments is crucial till ULBs improve their own revenues.
  - Measures need to be made to also cover operations and maintenance expenses of a ULB for better infrastructure and service.

### REMOTE VOTING

#### WHY IN NEWS:

- In the last week of December 2022, the Election Commission of India (ECI) wrote to the major political parties. Through the letter, the Commission invited the parties to attend a demonstration of the prototype Remote Voting Machine (RVM) on January 16, 2023. The Commission has also asked them to send in their comments by January 31, 2023. It is expected that the remote voting facility will improve electoral turn-outs by enabling migrants in different parts of India to vote, without having to physically visit the voting booths in their home constituencies. At the same time there are concerns related to the integrity of the



process, which is absolutely essential to ensure free and fair elections. Hence, it is important to take a cautious approach, consult all stakeholders and take them on-board before the launch of the remote voting facility.

### What is Remote Voting ?

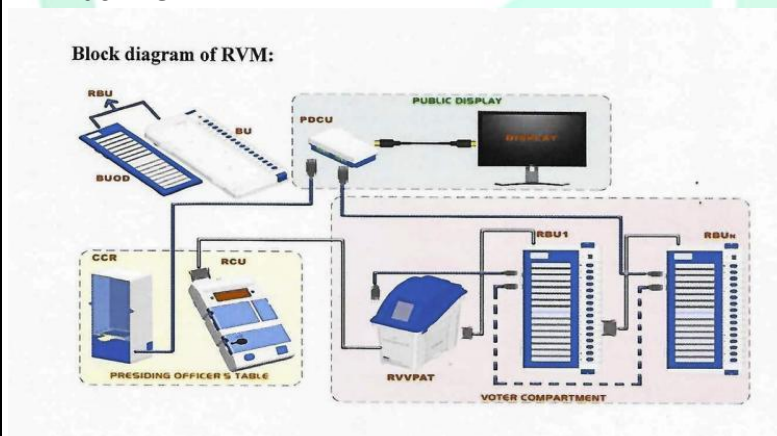
- Remote Voting refers to all means which **allow electors to vote from locations other than the polling station assigned to the location where they are registered to vote**. The remote voting location can be either abroad or from within the country. It comprises both **electronic voting** and **non-electronic voting mechanisms**.
- There have been demands from various political parties that the ECI should ensure that migrant workers and NRIs (Non-Resident Indians) who miss out on voting should be allowed to vote for their constituency from the city they are working in. Many such voters aren't able to visit their home constituency to vote because of multitude of reasons including professional commitments, cost of travelling etc.

### How is the Remote Voting proposed to be implemented in India?

- The ECI has come up with a prototype Remote Voting Machine (RVM). It is a modified version of the existing Electronic Voting Machine (EVM). The RVM has been developed with the assistance of Bharat Electronics Limited (BEL) and the Electronics Corporation of India Limited (ECIL).

### Hardware and Voting Process

- The RVMs are '**stand alone, non-networked systems**', effectively providing the voter the same experience as currently used EVMs. They will be set up in remote locations outside the State under similar conditions as current polling booths.
- The unique feature of RVMs is that a **single Remote Ballot Unit (RBU) can cater to multiple constituencies** (up to 72) by using a 'dynamic ballot display board' instead of the usual **printed paper ballot sheet on the EVMs**.
- Based on the constituency number read from the voter's Constituency card, the **Ballot Unit Overlay Display (BUOD)** will display the required candidates. These cards will be read using a barcode scanning system.
- After verifying a voter's identity, their constituency card will be read with a public display showing the constituency details and candidates. This will also be displayed privately, on the BUOD in the RVM's RBU. The voter will then vote and **each vote will be stored constituency-wise in the control unit of the voting machine**.



### Process of Registration

- The **remote voter will have to pre-register for the remote voting facility** by applying online or offline with the Returning Officer of the home constituency. The special polling stations would then be set up in the places of current residence of the remote voters.

### Security

- According to the ECI, the RVM, like the EVM, **would not be connected to the internet**. The Returning Officer (RO) in the remote location will load the symbols of candidates into the unit using a laptop. These laptops would not be connected to the internet. Representatives of political parties and candidates would be invited to be present when the symbols are loaded onto the unit. The symbols would be visible on a display unit for all to see. This will ensure that the process is transparent and is not susceptible to manipulation.

Proposed remote voting process	
<p><b>Registration of remote voter:</b></p> <ul style="list-style-type: none"> <li>➤ Remote voter has to pre-register for remote voting facility by applying online/offline</li> <li>➤ Voter details will be verified at home constituency and remote voting request approved</li> <li>➤ Special multi-constituency remote voting polling stations will be set up in places of current residence.</li> </ul> <p><b>Voting process:</b></p> <ul style="list-style-type: none"> <li>➤ After verifying identity of the voter, presiding officer scans his/her constituency card</li> <li>➤ Ballot sheet details for the</li> </ul>	<p>respective constituency are displayed on using public display unit and also on RBU</p> <ul style="list-style-type: none"> <li>➤ Display will change dynamically based on the constituency card read by CCR</li> <li>➤ Remote voter presses candidate button of his choice on RBU</li> <li>➤ Vote is recorded along with state code, constituency number and candidate number in RBU</li> <li>➤ RVVPAT prints the state code and constituency code on the paper slip, along with candidate and symbol voted for</li> </ul>

### Benefits of Remote Voting:

- **Disenfranchisement of Voters:** There are an estimated 600 million internal migrants as of 2020(450 million according to Census 2011). Approximately 85% of migration is within the States.
- **Voting Turnout:** The electoral turn-out has improved since the time of the first General Elections. The First General Elections (1951-52) witnessed turn-out of 45.7%. In 1960s-70s, the turn-out used to be between 50-60% (61.3% in 1967). In 2014 and 2019 General Elections, the turn-out touched 66.44% and 67.40% respectively. Yet, almost 33% voters failed to cast their vote. In 2019, this translated to almost 300 million (30 crore) registered voters failing to exercise their democratic right.
- **Promote Inclusion:** Remote voting solutions can help facilitate voting for voters who are unable to travel far because of factors like old age or disability.

### Challenges associated with Remote Voting:

- **Legal:**
  - (a) Amendments will be needed in Representation of the People Act, 1950 and 1951; Conduct of Election Rules, 1961; and The Registration of Electors Rules, 1960;
  - (b) The 'Migrant voter' will need to be defined in terms of **period and purpose of absence**;
  - (c) The process of Remote voting itself will need to be defined as whether 'remoteness' means outside the **Constituency, District or State**.
- **Administrative:** There are several challenges like:
  - (a) Requirement of **comprehensive migrant database** and enumerating remote voters;
  - (b) Ensuring **secrecy of voting** at remote locations;
  - (c) Preventing impersonation;
  - (d) Deciding number and location of remote polling booths;
  - (e) Appointing polling personnel for remote polling stations;
  - (f) Implementing model code in locations outside the poll-bound State;
  - (g) Creating awareness about the remote voting facility among poor and illiterate migrant voters;
  - (h) Placing remote voting in the electoral concept of territorial constituencies or demarcated areas in States for equal representation of votes.
- **Technological:**
  - (a) Familiarising voters with multi-constituency RVM;
  - (b) Counting votes cast at remote booths and transmitting results to returning officers in poll-bound State.

### What are the major concerns related with Remote Voting in India?

- **Might favour Big National Parties:** Smaller regional parties may lack enough cadre strength to deploy at remote voting locations, for political canvassing as well as monitoring the remote voting process. National Parties are better placed in this regard having nation-wide cadre of political workers. Allowing Remote Voting across the country for State Assembly elections will deny opportunity to regional parties to send in their nominees to booths.
- **Urban Apathy:** Experts attribute low turn-out typically to 'urban apathy', 'youth apathy' and 'migration-based disenfranchisement'. Voting turn-out has been low in urban/metropolitan areas despite low out-migration from these regions. Remote voting will be able to address only the 3rd reason of the above.

- **Union-State Rights:** The ECI plans to bring in a common electoral roll that can be used for elections to the Lok Sabha, State Assemblies, and Local Bodies. Opposition Parties contend that this would impinge on the federal rights of the States since the preparation of electoral rolls come under the exclusive domain of the State Election Commissions.
- Concern raised by ECI: ECI has also expressed concern that several things have to be defined like 'migrant voter', 'ordinary residence', 'temporary absence' etc. Procedural issues like Implementation of MCC in remote States need to be sorted.
  - What should be the approach going ahead?
- **First,** It is critical that any system of remote voting take into account the trust and acceptability of all stakeholders in the electoral system including voters and political parties. Political consensus is a must before the introduction of Remote Voting.
- **Second,** The issue should be properly debated in the Parliament and the relevant laws should be amended.
- **Third,** The ECI has to build confidence among the voters and political parties about the transparency and the integrity of the Remote Voting process.

### Conclusion

- The ECI is renowned world over for its impeccable record in conducting free and fair elections, at such a grand scale. The ECI has driven unique innovations in electoral processes in India like the EVMs, voting IDs etc. Remote Voting Machines (RVMs) can be a revolutionary development in facilitating enfranchisement of migrant voters. However, the process has to be fool-proof and error free. All political parties should be on-board and be convinced about the transparency and integrity of the process. It should be introduced only after thorough deliberations and political consensus.

## CHILD MORTALITY IN INDIA: STATUS, CHALLENGES AND WAY FORWARD

- The Report *Levels and Trends in Child Mortality* was released recently by the United Nations Inter-agency Group for Child Mortality Estimation (UNIGME). The Report estimates that globally, 5 million children died before their fifth birthday (under-five mortality) in 2021. Of these, 2.3 million deaths occurred in the first month (neonatal deaths). India's share in under-five deaths is 709,366 (~0.7 million, 14% share) and the share in neonatal deaths is 441,801 (~0.4 million, 19% share). Many of these deaths are preventable. Moreover there are wide variations in the child mortality in India, between various States, and between rural and urban areas. The Government has taken several steps to reduce child mortality in India. While there have been visible benefits of these measures, efforts should be continued to bring the child mortality level to that of the developed countries.

### Child Mortality and its status in India:

- Child Mortality is the death (mortality) of children under 5 years of age. According to UNICEF, Child Mortality or **Under-5 Mortality Rate** refers to the probability a new born would die before reaching exactly 5 years of age, expressed per 1,000 live births.
- **Infant Mortality Rate (IMR)** refers to the probability of dying between birth and **exactly 1 year of age**, expressed per 1,000 live births.
- **Neonatal Mortality Rate (NMR)** refers to the probability of dying during the **first 28 days of life**, expressed per 1,000 live births.
- **Trends in India:** According to the **Sample Registration System (SRS) Statistical Report, 2020** released in September 2022, India's **Under-5 Mortality Rate stood at 32** while **Infant and Neonatal Mortality Rates were 28 and 20 respectively.**



INDICATOR	SRS 2014	SRS 2019	SRS 2020
Crude Birth Rate (CBR)	21.0	19.7	19.5
Total Fertility Rate	2.3	2.1	2.0
Early Neonatal Mortality Rate (ENMR) – 0- 7 days	20	16	15
Neonatal Mortality Rate (NMR)	26	22	20
Infant Mortality Rate (IMR)	39	30	28
Under 5 Mortality Rate (U5MR)	45	35	32

- The NMR ranges from 23 in rural areas to 12 in urban areas. The IMR ranges from 31 in rural areas to 19 in urban areas.
- According to the SRS 2020 Report, **6 States/ UTs have already attained SDG target of NMR (<=12 by 2030)**. These are Kerala (4), Delhi (9), Tamil Nadu (9), Maharashtra (11), Jammu & Kashmir (12) and Punjab (12).
- **11 States/UTs have already attained SDGs target of U5MR (<=25 by 2030)**. These are Kerala (8), Tamil Nadu (13), Delhi (14), Maharashtra (18), J&K (17), Karnataka(21), Punjab (22), West Bengal (22), Telangana (23), Gujarat (24), and Himachal Pradesh (24).

#### Reasons for high Child Mortality in India:

1. **Poor Infrastructure:** There are structural issues like **lack of appropriate facility at primary healthcare centres**, delays in referring patients [to specialists] and **lack of transportation** (especially in rural and remote areas) which lead to high infant deaths.
2. **Poor Nutrition:** A significant proportion of population lives below the poverty line. Pregnant women in poor families lack access to adequate nourishment during pregnancy which results in complications in pregnancy and child-birth. Poor nutrition during pregnancy also leads to nutrition deficiency in the child.
3. **Lack of Skilled Personnel:** There is shortage of doctors, nurses, and other staff, especially in rural areas. This hinders **regular supervision** and **timely referral** of women to emergency obstetric care when complications are diagnosed.
4. **Education and Awareness Deficit:** Women in poor families lack awareness about nutrition requirement. They may also be unaware of other precautions required during and after childbirth. They rely more on traditional midwives in comparison to modern healthcare
5. **Child Marriage:** Child Marriage is still prevalent in many parts of India. It leads to early pregnancy (younger age) and more frequent pregnancies etc. Children born to early pregnancies are more vulnerable to death at early age.
6. **Premature Births:** Premature birth refers to child born before 37 weeks of pregnancy. Premature or 'Preterm Babies' are two to four times at higher risk of death after birth in comparison to those born after 37 weeks of gestation.

#### Steps taken to reduce Child Mortality:

1. **National Rural Health Mission:** The launch of **facility-based newborn care** under the National Rural Health Mission has created **Newborn Baby Care Corners** at every point of childbirth, **Newborn Stabilisation Units** at First Referral Units (Community Health Centres) and **Special Newborn Care Units** at District Hospitals across the country.
2. **The Integrated Child Development Services (ICDS) Scheme:** The beneficiaries under the Scheme are children in the age group of 0-6 years, pregnant women and lactating mothers. Among its various objectives are to **improve the nutritional and health status of children in the age-group 0-6 years** and to **reduce the incidence of mortality, morbidity, malnutrition** and school dropout.

3. **Capacity Building of Health Care Providers:** Various trainings are being conducted under National Rural Health Mission (NRHM) to train doctors, nurses and ANM for early diagnosis and case management of common ailments of children. These trainings are being undertaken under the **Integrated Management of Neonatal and Child Illness, Navjat Shishu Suraksha Karyakram** (NSSK) etc. Funds and technical support are provided by the Government of India under NHM to the States for conducting these trainings.
4. **Management of Malnutrition:** Malnutrition reduces resistance of children to infections thus increasing mortality and morbidity among children. National Health Management is emphasising management of malnutrition to reduce child mortality. **(a) Nutritional Rehabilitation Centres (NRCs)** have been established for management of severe acute malnutrition; **(b) Exclusive breastfeeding for first six months** and appropriate infant and young child feeding practices are being promoted in convergence with Ministry of Woman & Child Development; **(c) Ministry of Health & Family Welfare** launched '**MAA-Mothers' Absolute Affection**' programme in August, 2016 for **improving breast feeding practices (Initial Breastfeeding within 1 hour, Exclusive Breastfeeding up to 6 months and Complementary Breastfeeding up to 2 years)** through mass media and capacity building of health care providers in health facilities as well as in communities; **(d) National Nutrition Mission:** It is the government's flagship programme to **improve nutritional outcomes for children, pregnant women and lactating mothers**. It aims to reduce stunting and wasting by 2% per year (total 6% until 2022) among children and anaemia by 3% per year (total 9% until 2022) among children, adolescent girls and pregnant women and lactating mothers; **(e) Management of Anaemia in Children: National Iron Plus Initiative (NIPI)** was launched which was based on the life-cycle approach and covers all age-groups.
5. **Home Based Newborn Care (HBNC):** As 57 % of child deaths take place in the first 28 days of birth, home based newborn care through ASHA is being provided. The purpose of Home-Based Newborn Care is to **improve newborn practices at the community level and early detection and referral** of sick newborn babies. The schedule of ASHA for Home Based Newborn Care consists of 6 visits in case of institutional deliveries.
6. **Universal Immunisation Program (UIP):** It was first introduced in 1985. Immunization is one of the key area under the **National Health Mission (NHM)**. Under UIP, immunization is provided free of cost against 12 vaccine-preventable diseases; Nationally against 9 diseases: Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, Hepatitis B, and Meningitis and Pneumonia; Sub-nationally against 3 diseases: Rotavirus diarrhoea, Pneumococcal Pneumonia, and Japanese Encephalitis. **Mission Indradhanush (2014)** and **Intensified Mission Indradhanush (IMI)-2017** (recent version 4.0) have been launched to strengthen and re-energize the programme and achieve full immunization coverage for all children and pregnant women at a rapid pace.
7. **Protecting Mothers: Paalan 1000:** Journey of the First 1000 Days', focuses on the cognitive developments of children in the first 2 years. PAALAN 1000 parenting app provides caregivers with practical advice on what they can do in their everyday routine and helps resolve the various doubts of parents and directs efforts in the development of a child.
8. **Matritva Sahyog Yojana:** It is a **conditional Maternity Benefit (CMB)** Scheme. The scheme is being implemented by the Ministry of Women and Child Development as the centrally sponsored scheme. It was launched for pregnant and lactating women to improve their health and nutrition status by providing cash incentives to pregnant and nursing mothers.
9. **Policy Targets:** In the National Health Policy (NHP) of 2017, the Government had committed to investing 5% of the GDP on health by 2025. Child Health Goals under SDG include Goal 3.2: By 2030, end preventable deaths of newborn and children under 5 years of age, with aim to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births. India's own NHP targets NMR of 16 and U5MR of 23 by 2025.

#### What more steps can be taken to further reduce Child Mortality?

- **First,** Since ~50% of all under-5 deaths are among newborns, many can be prevented by **reaching higher coverage of good quality antenatal care, skilled care at birth, postnatal care for the mother and the baby, and care of small and sick newborns**. Focus should be on both antenatal and postnatal care.
- **Second,** many child deaths are preventable through cost-effective interventions such as **kangaroo care** (where babies are kept in skin-to-skin contact with the mother), thermal control, breastfeeding support

and basic care against infections and breathing difficulties. Enhancing awareness about these techniques in new mothers can help avoid these preventable deaths.

- **Third**, The Government should **address the neglected challenges** like Stillbirths and preterm births. Both are highly sensitive 'tracer indicators' of the quality of maternal and child health services in particular, and overall health services in general.
- **Fourth**, India's health system needs **more Government funding**. At present, it is ~ 1.5% of the GDP. Children continue to die from preventable causes; pregnant women do not receive good quality care; aggregate mortality hides the inequities in health outcomes and the primary healthcare system is underfunded. The poorest and marginalised families bear the brunt of these inequities. Enhancing spending on healthcare can rectify these shortcomings.
- **Fifth**, The States should cooperate with each other and **share the best practices amongst themselves** in the spirit of cooperative federalism, e.g., the practices of Kerala can be replicated in other states like West Bengal, Bihar, Assam etc.
- **Sixth**, The Government should provide **greater incentives to ASHA workers** who can raise awareness among the masses about the modern healthcare systems. Further, the government can enter into agreements with private medical colleges and induce greater numbers of doctors to serve in rural areas.

### Conclusion

- Child Mortality has improved a lot in last 2 decades. However, there is still a scope for lot of improvement. Learnings from successful interventions must be used in designing future interventions. Healthcare spending must be enhanced. ASHA workers are a crucial lever in the rural healthcare set-up. Their concerns should be adequately addressed, including enhancing their remuneration. Their role will be crucial in ensuring the achievement of the healthcare targets under the SDGs.

## SPECIAL ADDRESS OF GOVERNOR: CONSTITUTIONAL HISTORY

### Context:

- Tamil Nadu Governor walked out of the Tamil Nadu Assembly when CM Stalin interrupted the governor's speech after the former had omitted a few words from his govt-prepared **special address**.

### About the Special address

- Both in the **U.K. and in India**, it is a time-honoured constitutional convention that the **King or the President or the Governor** must read out the exact text of the **speech or special address** which informs the nation or the State of the policies that an **elected government intends to pursue**.
- Neither House of Parliament can proceed with any public business in any further session unless it is opened either by the King himself or by Lord's Commissioners acting on his behalf.
- The King's speech is thus the formal beginning of each new session of Parliament and states the government's policy and the intended programme of business for the forthcoming session.
  - There has never been an incident of the monarch in the U.K. departing from the official text of his speech.

### Adoption in India

- As India adopted the Westminster model of parliamentary democracy, the Constituent Assembly decided, on May 18, 1949, to adopt this practice.
- **Article 87** of the **Indian Constitution** requires the President to make a **special address** to both Houses of Parliament assembled on the **commencement of the first session of each year**.
  - The President has to inform Parliament of the causes of its summons.
- **Article 176** requires the Governor to make a special address at the first session of each year of every State Legislative Assembly and to both Houses wherever the State also has a Legislative Council.
  - The language of these provisions was borrowed from the rules of the House of Commons.

### Controversies



- The Governor of Tamil Nadu, R.N. Ravi, made constitutional history in the State by omitting certain paragraphs and departing from the official text of his special address at the opening of the Legislative Assembly of Tamil Nadu for 2023.
- This is not the first time that a governor has refused to read the address sent by the Government.
  - In 1967, Rajasthan Governor Sampuranand did it.
- It is disturbing that **serious breaches of constitutional conventions** continue to be made by **Governors in States ruled by Opposition parties**.
  - Article 361 of the Constitution gives the Governor complete immunity from any legal action because our founding fathers hoped that Governors would maintain the highest standards of rectitude and propriety.
- A later governor of West Bengal, Dharma Vira, too had skipped certain portions of the speech sent to him by the government, particularly the portion dealing with his dismissal of the first United Front Government in Bengal.
  - The Calcutta High Court had by then upheld the governor's decision and termed the dismissal as constitutional.

### Views of Lawmakers

- **Jawaharlal Nehru**, speaking in the Lok Sabha in 1960, stated that the President's address is nothing but a statement of policy of the government.
  - He observed: "If the President's address has anything wrong in it or objectionable in it, it is the government to blame not the President, and it is open to Members to criticise or condemn government because there is some such statement in it which they disapprove of".
- During the Constituent Assembly debates, **Professor K.T. Shah** proposed an **amendment to Article 87** giving discretion to the President to also make an address on "other particular issues of policy he deems suitable for such address".
- This amendment was rejected as **B.R. Ambedkar** pointed out that the President, under Article 86, had the right to address either House or both Houses of Parliament together and Parliament had to assemble for this purpose.
- Similar power was given to the **Governor under Article 175**.
  - Thus, when there is an independent power provided under Article 175, it is a serious impropriety for any Governor (or even the President) to omit several paragraphs from the speech prepared by the incumbent government.

### Observations of Court's

- The **Calcutta High Court**, while interpreting this article in **Syed Abdul Mansur Habibullah v. The Speaker, West Bengal Legislative Assembly (1966)**, held that the special address is not an idle or ceremonial formality.
  - It keeps the members informed about the executive policies and legislative programme of the State government.
- The High Court further observed that the **non-delivery of the special address hampers legislative debates and budgetary criticisms**.
  - The HC held that when the governor fails to deliver his address under Article 176 and walks out of the House after laying down the address on the table of the House, this is mere irregularity, not illegality.
- The **Supreme Court** has held that constitutional conventions are as much a part of the Constitution as its written text. And it is well-settled that constitutional morality consists of not only adherence to the written text of the Constitution but also to constitutional conventions.
  - These conventions fill the interstices of a written Constitution and enable effective coordination between the legislature, executive and the judiciary.
- In **Yogender Singh Handa v. State of Rajasthan (1967)**, the Rajasthan High Court held that some portion read by the governor was good enough to deem the whole address as read.

### Conclusion and Way Forward

- The special address of the Governor is an important constitutional duty, which is performed with the aid and advice of the Council of Ministers with the Chief Minister at the head.
- The constitutional role of the Governor is that of an elder statesman who brings a sense of gravitas to this high office, and by his oath, must preserve, protect and defend the Constitution and the law.
- The residents of Raj Bhavans are expected to be above party politics and should not hamper the functioning of a duly elected State government.
- It is a tribute to our Constitution that it continues to be the steel frame of India's republican democracy and has survived for over 70 years.
- Both governors and chief ministers, as constitutional functionaries, should respect each other and at least have a working relationship.

## NEW FREE FOODGRAIN SCHEME AS AN ILLUSION, DOUBLESPEAK

### Context:

- The Cabinet has announced that under **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**, 810 million National Food Security Act (NFSA) beneficiaries will receive five kilos of free foodgrains every month in 2023.

### Pradhan Mantri Garib Kalyan Anna Yojana (PMGKY):

- PMGKAY was part of the Centre's initial COVID-19 relief
- Its nodal Ministry is the Ministry of Finance.
- **Beneficiaries under National Food Security Act:**
  - It provides for 5 kg of rice or wheat per person per month to be distributed free of cost
  - This is over and above the 5 kg already provided to ration card holders at a subsidized rate
  - e.35 kg per month per family for AAY(Antyodaya Anna Yojana) and 5 kg per **month per person for Priority Households(PHH)**.
  - The 80-crore cap on NFSA beneficiaries and state ration card quotas are based on 2011 census data.
- **Initially:** One kg of pulses was also provided under the scheme, which was later restricted to chana dal only, and then discontinued in later phases.

### Issue related to it:

- **A family of five can collect 25 kg for free:** This is a reduction by half of the 50 kg of rice (25 kg free under the earlier PMGKAY and 25 kg at ₹3 under the NFSA).
- **The repeated extensions, for 28 months,** seemed to be with an eye on State elections.
- **The latest readjustment:** It seems politically motivated to appeal to voters in nine States that go to polls in 2023.

### Flaws in the scheme:

- **Ration records have not been updated** since the 2011 Census — as per estimates
  - More than 40% of India's population is currently excluded from both the NFSA and PMGKAY.
- **In many villages and slums,** the most marginalized castes and communities, especially migrants, sex workers, the homeless and transgender persons are often without NFSA ration cards.

### Steps taken:

- **Tamil Nadu, Odisha, Rajasthan, Chhattisgarh and West Bengal** have either universalised or substantially expanded coverage with State cards.
- The Supreme Court of India: It directs the central government to expand NFSA coverage.

### Were all poor people covered under the scheme?

- **Ration card:** The scheme only provided grain for those families who held ration cards.
- In May and June 2020, the Centre allocated foodgrains to be distributed by States under the **Atma Nirbhar Bharat scheme** for stranded migrants and others without ration cards.
- **DBT:** The PMGKAY covers even Direct Benefit Transfer (DBT) beneficiaries.

### Arguments for continuation of scheme:

- **Pandemic** still exists
- **Unemployment** remains at record levels
- **Hunger:** There is widespread hunger among vulnerable communities.

### Way Forward

- **Squeezing the 100 days of work guaranteed under the National Rural Employment Guarantee Act (NREGA):** This employer of the last resort scheme is being systematically undermined by acute Budget cuts, delayed payments and technological hurdles.
- **Study of scheme:** The central authorities should commission a study and make its findings public. Just as it did in the initial months of the pandemic.
  - It should be the basis for updating the database of foodgrain-drawing card holders, scrutinizing the data critically and zeroing in on the needy.
- **Need to go beyond the mandate of the NFSA:** as is being done under the PMGKAY, the government can supply the foodgrains at a reasonable price.
- **Rules on quota:** To keep the budgetary allocation under control, rules on quota for rice or wheat can be changed suitably.
- **Diversion from PDS:** central and State authorities need to ponder over the scheme's continuance, given the chronic problem of diversion from the Public Distribution System (PDS).

## SUTLEJ-YAMUNA LINK AND INTER-STATE WATER DISPUTES IN INDIA

### Context:

- A meeting was held between the Chief Ministers of Punjab and Haryana in the presence of the union Jal Shakti minister. The agenda of the meeting was to resolve the Sutlej-Yamuna Link Canal dispute. The dispute between Punjab and Haryana has been festering since the 1960s, and various efforts to resolve the issue have failed.

### Sutlej-Yamuna Link (SYL) Dispute between Punjab and Haryana:

- **1955:** The waters of the Ravi and Beas rivers were calculated at 15.85-million-acre feet (MAF), and divided among Rajasthan (8 MAF), Undivided Punjab (7.2 MAF) and Jammu and Kashmir (0.65 MAF).
- **1966:** The water dispute started in 1966, when the **Punjab Reorganisation Act** divided erstwhile Punjab into the states of Punjab and Haryana. The Sutlej Yamuna Link Canal, a 211-km-long proposed canal connecting Sutlej and Yamuna, was planned in 1966 after Haryana was carved out of Punjab. 121 km stretch of the canal was to be constructed in Punjab, and another 90 km in Haryana.
- **1980:** Haryana completed the project in its territory by June 1980, the work in Punjab, though started in 1982, was shelved due to protests by the opposition led by Shiromani Akali Dal (SAD).
- **1982:** The construction work for the SYL canal was launched by then Prime Minister in April 1982 near Kapoori village of Punjab's Patiala district.
- **1985:** In July 1985, amidst the insurgency in Punjab, the then Prime Minister signed an accord with SAD, agreeing to set up a new tribunal to assess the sharing of water. The **Eradi Tribunal** headed by Supreme Court Judge V Balakrishna Eradi was set up to reassess availability and sharing of water.
- **1987:** The tribunal recommended an increase in the shares of Punjab and Haryana to 5 MAF and 3.83 MAF, respectively.
- **Militancy in Punjab:** In August 1985, the chief of SAD was killed by militants, less than a month after signing the accord. In 1990, the Chief Engineer and a Superintending Engineer were killed by militants. The construction came to a halt.
- **1996:** The Haryana government moved the Supreme Court over the issue.
- **2002-04:** In 2002, the Supreme Court directed Punjab to continue work on the SYL and complete it within a year. The Punjab Government, however, moved a review against the SC order but the petition was rejected. In 2004, following orders by the SC, the Central Public Works Department (CPWD) was appointed to take over the canal work from the Punjab Government. The Punjab Assembly passed the **Punjab Termination of**



**Agreements Act (PTAA)**, which abrogated all its river water agreements with neighbouring States. The then President (Dr. A.P.J. Abdul Kalam) referred this Act to the Supreme Court to decide on its legality in the same year.

- **2016:** The Supreme Court says that as Punjab backed out of its promise to share river water and the PTAA is invalid.
- **2020:** The SC asked the Chief Ministers of Punjab and Haryana to negotiate and the Union Government to mediate between the States.

#### **What are the arguments of two States regarding the Sutlej-Yamuna Dispute?**

- **Punjab:** Punjab was against sharing waters of the two rivers with neighbouring Haryana, citing **riparian principles**, which state that the owner of land adjacent to a water body has the right to use the water, besides arguing that it had no water to share.
- According to a study by the State Government, many areas in Punjab may run dry by 2029. The State has already **over-utilized its groundwater for irrigation purposes**, as it a major contributor of Wheat and Paddy to the food reserves (worth INR 70,000 crore each year). According to reports, 79% of the state's water is over-exploited. There are 109 '**over-exploited**' blocks out of 1382 **critical** blocks, 5 '**semi-critical**' blocks, and only 22 '**safe**' blocks. The Government claims that sharing water with any other state is impossible in such a situation.
- **Haryana:** Haryana has been staking claim to the Ravi-Beas waters through the SYL Canal on the plea that providing water for irrigation was a tough task for the State. In southern parts, where underground water had depleted up to 1700 feet, there is a problem of drinking water. Haryana has been citing its contribution to the central food pool and arguing that it is being denied its rightful share in the water as assessed by a tribunal.

#### **What are the arrangements to settle Inter-State Water Disputes?**

##### **Constitutional Arrangements**

- **Schedule 7 of the Constitution:** It distinguishes between the use of water within a State and the purpose of regulating interstate waters. **Union List:** Entry 56, It gives the Union Parliament the power to formulate laws and mechanisms for regulating Interstate rivers. **State List:** Entry 17, States retain autonomy regarding water utilisation for purposes such as water supply, irrigation and canals, drainage and embankments, water storage and water power subject to provisions of Entry 56 of List 1 (Union List).
- **Article 262:** In case of disputes relating to waters, Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State rivers. Parliament may, by law also provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as mentioned
  - Statutory Arrangements
- **River Board Act, 1956:** The river Boards are supposed to advise on the Inter-state basin to prepare development scheme and to prevent the emergence of conflicts. Till date, no River Board has been created.
- **Inter-State Water Dispute Act, 1956:** If a particular State or States approach the Union Government for the constitution of the tribunal:
  - (a) Central Government should try to resolve the matter by consultation among the aggrieved States;
  - (b) In case, consultation does not work, then the Union Government may constitute the tribunal.

#### **What are the reasons for persistence of Inter-State Water Disputes?**

- **First**, the legislative powers concerning water have been distributed between the Union and the State Governments. The idea has been to ensure optimum utilisation while balancing the interests of the States. However, this approach of imprecise distribution of power between the Union and the States, has created a **Federal-Jurisdictional ambiguity**.
- **Second**, a big limiting factor is the **lack of effective authority for enforcing the orders of tribunals**. The Tribunal can only make an award and **cannot make it binding**. The Tribunals also lack the ability to **punish for 'contempt'**.

- **Third**, Article 262 provides that the Parliament may by law prevent the Supreme Court or any other Court from exercising jurisdiction in inter-State water disputes. However, under Article 136, the Supreme Court can hear appeals against the orders of Tribunals. Thus, the Supreme Court remains the adjudicatory body along with the tribunals, **creating an institutional ambiguity** regarding which body is the ultimate adjudicatory power on inter-State water disputes in India.
- **Fourth**, critics of the system argue that the members of tribunals created for adjudicating the inter-State water disputes have been predominantly from the Judiciary. This has led to lack of a multi-disciplinary approach to dispute settlement. They say there is not much difference between the tribunal and the bench of the Supreme Court.
- **Fifth**, There have been **excessive delays in establishing tribunals and making awards**. The right to have a dispute referred to a tribunal under the IWSDA (Inter-State Water Dispute Act) is contingent on the Union Government's determination that the matter cannot be resolved through negotiations. The provision of negotiations inevitably delays the constitution of a tribunal.
- **Sixth**, Given that agriculture constitutes the primary economic activity in many parts of the country, water is a contentious issue. Inter-State disputes are exploited for political mobilization and electoral benefits. State Governments have rejected the awards of Tribunals.
- **Seventh**, There is a lack of data regarding water flows, seasonal variations etc. which results in ambiguities regarding availability of water, surplus water for sharing etc. In addition, seasonal variations in monsoonal rainfall sometimes create shortage of water. State Governments than argue that there is no surplus water to be shared.

#### What should be the approach towards settling Inter-State Water Disputes?

- **First**, The Sarkaria Commission has suggested that the **awards of the tribunals be given the same weight as a Supreme Court Judgment**.
- **Second**, The Government's inability to properly handle water-related disputes is reflected in the high number of appeals to the Supreme Court. Some experts suggest that the **appeal to the Supreme Court should only on procedural aspects**. The awards based on expert opinions shouldn't be questioned in the Court.
- **Third**, there is a need to establish a time frame for constituting the Tribunal by the Union Government. Tribunals should also try to avoid unnecessary delays in giving the award.
- **Fourth**, the **Inter-State Council** can be rejuvenated to enable it to play a **more active role in settlement of such disputes**.
- **Fifth**, Some experts have suggested that **mediation**, (a third party acts as an intermediary between the parties in conflict), can also be **explored as a possible option** for successful resolution of disputes. Example of role of the World Bank as a mediator in the Indus Water Treaty between India and Pakistan is quoted as a success of this model.
- **Sixth**, infrastructure should be created for better collection of the data related to inter-State river basins. Better data will provide clear picture regarding availability of waters, seasonal variations and help in the equitable distribution of water among the States.

#### Conclusion

- The Inter-State Water Disputes have been allowed to linger on for a long time. The politics of electoral mobilization has been one of the major factors, along with institutional infirmities in the arrangements. The Union and State Governments should put national interest above narrow parochial interests. As the pressures of climate change become evident through water stress in various regions, it becomes imperative that such disputes are settled in order to ensure optimal use of nation's water resources.

#### DECADE OF THE POCSO ACT

##### Context:

- Recently, India completed ten years since the **enactment of its Protection of Children from Sexual Offences (POCSO) Act, 2012**.

## About

- **Enactment:**
  - **The Protection of Children from Sexual Offences (POCSO) Act, 2012**, enacted in consequence of India's ratification of the **UN Convention on the Rights of the Child in 1992**.
    - It came into effect on November 14, 2012.
- **Aim:**
  - The aim of this special law is to address **offences of sexual exploitation and sexual abuse of children**, which were either not specifically defined or inadequately penalised.

## Protection of Children from Sexual Offences (POCSO) Act, 2012

- **Definition of a child:**
  - The Act defines a child as **any person below 18 years of age**.
- **Defines forms of sexual abuse:**
  - It also defines different forms of sexual abuse including **penetrative and non-penetrative assault** as well as **sexual harassment and pornography**.
- **Section 7 mandates that:**
  - "Whoever with sexual intent touches the **vagina, penis, anus or breast of the child** or **makes the child touch** the vagina, penis, anus or breast of such **person or any other person**, or does **any other act with sexual intent** which involves **physical contact without penetration** is said to commit sexual assault".
    - Most important ingredient in Section 7 is the **sexual intent of the offender and not skin-to-skin contact**.
- **Punishment:**
  - POCSO **prescribes stringent punishment** graded as per the gravity of the offence, with a **maximum term of rigorous imprisonment for life**, and **fine**.
- **Monitoring implementation:**
  - **Section 44 (1) of POCSO Act** provides that the **National Commission for Protection of Child Rights (NCPCR)** and **State Commission for Protection of Child Rights (SCPCR)** shall monitor the implementation of the provisions of the Act.
- **The following amendments were brought under POCSO Act, 2012, through POCSO (Amendment) Act, 2019:**
  - **Section 2 (Definitions)** was amended to **incorporate definition of child pornography**;
  - **Section 4 (Punishment for penetrative sexual assault)** amended to increase the quantum of punishment **from a minimum of seven years to minimum of 10 years**, and a **minimum of 20 years in case of a child below 16 years**.

## Effective implications of the Act

- **Gender-neutral nature of the Act:**
  - Even though the National Crime Records Bureau has not published data on male and female victims separately, in **Chhattisgarh**, male child victims accounted for about eight in every 1,000 POCSO cases (0.8%).
  - Though the reported number is not big, it still **endorses society's apprehension that the sexual exploitation of male children is also a serious issue** that has been largely unreported.
- **Rise in awareness:**
  - There is sufficient general awareness now to report cases of sexual exploitation of children not only by individuals but also by institutions as non-reporting has been made a specific offence under the POCSO Act.
  - This has made it comparatively difficult to hide offences against children.
- **At odds with child pornography:**
  - The **storage of child pornography material** has been made a new offence.
    - Further, the offence of 'sexual assault' has been defined in explicit terms unlike an abstract definition of 'outraging modesty of a woman' in the Indian Penal Code.



## Issues & challenges

- **Under staffing:**
  - The POCSO Act provides for recording the statement of the affected child by a **woman sub-inspector** at the **child's residence** or **place of choice**.
  - But it is practically impossible to comply with this provision when the number of women in the police force is **just 10%**, and **many police stations hardly have women staff**.
- **Inadequate infrastructure:**
  - There is a provision to **record statements** using **audio-video means**.
  - In the **absence of proper infrastructure** to ensure the **integrity of electronic evidence**, the **admissibility of evidence** recorded using any audio-video means will always remain a **challenge**.
- **Two-finger testing:**
  - Medical examination of the prosecutrix is **conducted according to provisions of the CrPC**.
    - However, the **medical examination of a girl child is conducted by a female doctor**, as specified in the Act.
  - Even so, and as observed by the Supreme Court of India, there are instances where **the banned two-finger test is still in use**.
- **Age determination of a juvenile delinquent:**
  - The age determination of a juvenile delinquent is guided by **the Juvenile Justice (Care and Protection of Children) Act**.
    - No such provision exists under the POCSO Act for juvenile victims.
  - In absence of specific provision, the investigating officers (IOs) continue to rely on the **date of birth recorded in school admission-withdrawal registers**.
  - **Age estimation based on medical opinion** is generally so wide in scope that in most cases minors are proved to be major.
- **Focus on completion of investigation:**
  - **The time mandated to complete investigation of rape** (as in the CrPC, without a similar provision in the POCSO Act) is **two months**.
  - Though the **aim is to expedite the investigation**, it has resulted in **putting pressure on the IOs** to somehow submit a charge sheet in two months irrespective of what stage the investigation is at.
    - Thus, unfortunately, the focus is largely on completion of investigation in two months irrespective of quality.
- **Silent on consensual sexual activities:**
  - In case of sexual intercourse with consent, one of which is minor, the partner who is not minor can be prosecuted under the POCSO Act **as the consent of a minor is not considered relevant under this Act**.
- **Low conviction rates:**
  - **Madhya Pradesh, Maharashtra, Uttar Pradesh, Haryana and Delhi** constitute **51 percent of the POCSO cases** in the country but the **rate of conviction** in these states is **between 30 percent to 64 percent**.

## Way Ahead

- The POCSO Act is exhaustive legislation that aims at covering all the aspects of child sexual abuse.
- **The investigating agencies** should be **well trained and professionals** such as **medical practitioners** involved in the stages of investigation and **trial should be efficient** so as to avoid any scope of negligence on their part.
- The POCSO Act already makes the **procedure child friendly** and this approach should be followed by the **judicial officers, magistrates, and police officers** so that **the child victims could repose trust in them**.

## NEEDED, A NEW APPROACH TO DATA PROTECTION FOR MINORS

### Context:

- The Digital Personal Data Protection (DPDP) Bill, 2022 provides for mandatory parental consent for all data processing activities by children, defined as any person aged under 18 years.

- **Background of data privacy law:** Started in 2010 with the constitution of the Justice Srikrishna Committee.

#### **Justice BN Srikrishna Committee Data Protection Report:**

- The Committee was constituted by the **union government in July 2017**, to deliberate on a data protection framework.
- **The Supreme Court in its Puttaswamy judgment, 2017:** It declared privacy a fundamental right.
- **Interests of citizens:** The report has emphasized that interests of the citizens and the responsibilities of the state have to be protected, but not at the cost of trade and industry.
- It proposed a draft **Personal Data Protection Bill**.

#### **New Data Protection Bill:**

- **Inclusion of the word “digital” in the Bill’s title** speaks to India’s long-standing goal of being a digitally forward society.
- **Bill has two major stakeholders:**
  - Data Principal
  - Data Fiduciary.
- **Data Principal:** It refers to the subject whose data is being processed
- **Data Fiduciary:** It is an entity that processes this data.
- **fiduciary” whilst** referring to a data processor is significant.
- **The relationship between the two is guided by:**
  - Trust, assurance and good faith.
- **Data Fiduciary:** It is responsible for safeguarding the interests of Data Principals.
- **Bill describes:**
  - The obligations of the Data Fiduciaries towards Data Principals
  - The rights and duties of the latter
  - Regulatory framework through which data will be processed.
- **Bill lists the “duties” of the Data Principals:** these have no bearing on the realization of the rights provided by the Bill.

#### **Important aspects of bill:**

- **In addition to the general obligations** to prevent the misuse of the personal data of individuals
  - **The Bill has outlined a category of Significant Data Fiduciaries entities:** that are required to comply with additional measures to safeguard the personal data of individuals.
  - **Only companies that process vast amounts of data** or have a potential impact on the country’s sovereignty and integrity need to take such stringent measures.
  - Such measures reduce the compliance cost of companies that are at a nascent stage.
- **Data localisation” in the previous versions of the Bill, have been omitted:** The reworked Bill permits the government to notify countries to which data transfers may be permitted.

#### **The gaps in the Bill:**

- **The Bill relies on parents to grant consent** on behalf of the child in all cases.
  - In a country with low digital literacy, where parents in fact often rely on their children (who are digital natives)
  - This is an ineffective approach to keep children safe online.
- **It does not take into account the “best interests of the child”,** a standard originating in the **Convention on the Rights of the Child, 1989**, to which India is a signatory.
- **The Bill does not factor in how teenagers use various Internet platforms** for self-expression and personal development and how central it is to the experience of adolescents these days.
- **Bill does allow the government to provide exemptions in the future** from strict parental consent requirements, profiling, tracking prohibitions, etc
  - **It does not acknowledge the blurring lines** between what a platform can be used for.

- **For example: Instagram** is a social media platform, but is regularly used as an educational and professional development tool by millions of artists around the world.
- **Each platform will have to obtain 'verifiable parental consent'** in the case of minors.
  - It can change the nature of the Internet
  - It is not possible to tell if the user is a minor without confirming their age, platforms will have to verify the age of every user.
- **Risk for citizens:** The government will prescribe whether verifiability will be based on ID-proof, or facial recognition, or reference-based verification etc
  - **All platforms will now have to manage** significantly more personal data than before
  - **Citizens will be at greater risk of harms** such as data breaches, identity thefts, etc.

#### India laws for child Protection;

- Protection of Child Rights Act, 2005
- The Right of Children to Free and Compulsory Education Act, 2009
- Protection of Children from Sexual Offences Act, 2012.

#### Way Forward

- **We need to shift our approach with respect to children's data** before this Bill is brought to Parliament.
  - **To avoid the folly of treating unequals equally** and blocking off access to the Internet for teenagers these steps are needed.
- **Move from a blanket ban on tracking, monitoring, etc.** and adopt a risk-based approach to platform obligations.
- **Platforms should be mandated to undertake a risk assessment** for minors and not only perform age-verification-related corresponding obligations
- **Design services with default settings and features** that protect children from harm.
  - This approach will bring in an element of co-regulation, by creating incentives for platforms to design better products for children.
- **Relax the age of mandatory parental consent** for all services to 13 years in line with many other jurisdictions around the world.
  - It will minimize data collection, which is one of the principles that the Bill is built on.
  - **Experience and deliberations in the United Kingdom, and in the United States (California, New York, etc.)** where age-appropriate design codes have been introduced. To
- **The government should conduct large-scale surveys** of both children and parents to find out more about their online habits, digital literacy, preferences and attitudes.
- **Design a policy in India** that balances the safety and the agency of children online.
- **We should not put the onus of keeping our young safe** only on parents, but instead it should make it a society-wide obligation.
  - Get the data protection framework right as **India's 'techade'** cannot be realized without its youth.

### ATTRACTING CAPITAL FOR URBAN INFRASTRUCTURE

#### Context:

- A report by the World Bank, released last year, on financing India's urban infrastructure needs, focuses on private investments ameliorating urban problems.

#### About

- **World Bank Estimates:**
  - The World Bank estimates that nearly \$840 billion (₹70 lakh crore) would be needed for investment in urban India to meet the growing demands of the population, and \$55 billion would be required annually.
- **Revenue by Cities:**
  - This report already points out that nearly 85% of government revenue is from the cities.



- This means that urban citizens are contributing large revenues even as the World Bank report emphasises the levying of more burdens in Urban Settlements in India
- **Urbanization:** Urbanisation is the increase in the proportion of people living in towns and cities.
- Urbanisation occurs because people move from rural areas to urban areas (towns and cities).
  - This usually occurs when a country is still developing.
- **Employment Factor:**
  - In India, people have been attracted to move from rural to urban areas on account of improved employment opportunities.
- India's Urban Growth: India is witnessing one of the largest urban growth spurts in history.
- This presents Indian cities with an unprecedented opportunity to look at urban planning and development through a long-term strategic lens to enable economic, environmental and social impact.
- **Data on Urban Settlements:**
  - India is home to 11% of the total global urban population.
  - From a population of 377 million in 2011, Indian cities are projected to house 870 million people by 2050, according to the UN's projections which is by far the highest among all nations.
  - Delhi is likely to become the world's most populous urban agglomeration by 2030, surpassing Tokyo.
- **Funding patterns:**
  - Urban finance predominantly comes from the government in India.
    - Of the finances needed to fund urban capital expenditures, 48%, 24% and 15% are derived from the central, State, and city governments, respectively.
    - Public-private partnership projects contribute 3% and commercial debt 2%.
  - The flagship programmes of the government, the Smart City mission, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), the Pradhan Mantri Awas Yojana (PMAY), etc., are not more than ₹2 lakh crore (that too for a period of five years).

#### Issues & Challenges faced by Cities

- **Affordable Housing:**
  - Inadequate affordable housing has meant that almost one-sixth of the urban population lives in slums.
- **Water Supply & Waste Management:**
  - Water supply is unreliable.
  - Mountains of solid waste sit on the fringes of our cities.
  - Poor drainage, congested roads and deteriorating air quality are other challenges.
- **Poor Urban Planning:**
  - The existing urban planning and governance framework is complex, which often leads to ambiguity and a lack of accountability.
  - City planning has become a highly technocratic exercise with long delays and there is a need for the demystification of the master plans.
- **Lack of Coordination:**
  - Lack of synergy between urban and rural planning and development. The 'State Town and country planning acts need to be revisited to harmonise the two.
- **Funding:**
  - More sources for funding are required like resources other than the public budget need to be tapped. High prices will make services unaffordable.
- **Migrant Crisis:**
  - Urban dwellers are ignored and unable to live, work and play safely and happily.
  - An urbanisation policy needs to take cognisance of future mobility patterns.
- **Connectivity & Congestion:**
  - Congestion and delays in both passenger and commercial traffic are widespread in Indian cities
- **Issues of Urban Slums:**

- Urban Slums are subject to insecure land tenure, lack of access to basic minimum civic services such as safe drinking water, sanitation, storm drainage, solid waste management, internal and approach roads, street lighting, education and health care, and poor quality of shelter.

### Suggestions

- World Bank's Suggestions:
  - The solutions suggested include improving the fiscal base and creditworthiness of the Indian cities.
  - Cities must institute a buoyant revenue base and be able to recover the cost of providing its services.
  - In simpler terms, it means increasing property taxes, user fees and service charges to name a few.
- **Bottom-up planning:**
  - For the urban context, plans must be made from below by engaging with the people and identifying their needs.
- **Empowering the city governments:**
  - National task force chaired by K.C. Siva Ramakrishnan suggested the following:
    - Empowering the people,
    - Transferring subjects to the city governments, suggesting that 10% of the income-tax collected from cities be given back to them and
    - Ensuring that this corpus fund was utilised only for infrastructure building.
  - This would ensure that city governments had an advantage in ensuring rapid transformation.
- **Urban governance with regular elections:**
- Another important aspect of urban infrastructure is linked to urban governance, which is in shambles in most parts of the country.
- Regular elections should be held in cities and there must be empowerment through the transferring of the three Fs: finances, functions, and functionaries.
- Steps for Enhancing the Role of the Private Sector:
- These include the adoption of fair processes for
  - Procuring technical consultancy services,
  - Strengthening project structuring and management skills in the public sector, and
  - Empanelment of private sector consultancies.
- **Clarity & expertise:**
- There is a need to bring in more institutional clarity and also multi-disciplinary expertise to solve urban challenges.
  - The key aspects that would need to be addressed in this effort are:
    - Clear division of the roles and responsibilities of various authorities, appropriate revision of rules and regulations, etc.
    - Creation of a more dynamic organizational structure,
    - Standardisation of the job descriptions of town planners and other experts,
    - Extensive adoption of technology for enabling public participation and inter-agency coordination.

### Way ahead

- Cities should also aim to mainstream the use of spatialised social, economic and environmental data to create robust links across the urban-rural continuum.
- Adequate political will for financial inputs and enforcement of regulations will be essential for often fund-starved urban administrations.

## DEVELOPING SCHOOLS WITHOUT BARRIERS

### Context:

- **Children with disability/disabilities (CWD)** do not have accessible spaces and other guiding infrastructure in schools to get safely.

### Children with disability/disabilities (CWD):

- There are more than **78 lakh children** with disabilities in India between **5-19 years**.
- Only **61%** of children were attending an **educational institution**.
- About **12% had dropped out**, while **27% had never** been to school at all.
- **There are fewer girls with disabilities** in schools than boys
  - **School enrollment:** more girls with disabilities get left behind than boys.

#### UNESCO 2019 report:

- **Census 2011: CWD** comprises **7(one point seven)%** of the total child population in India
- **More than 70% of five-year-olds with disabilities in India** have never attended any educational institution
- **Many CWD also tend to drop out** of school as they grow older.

#### Barriers to accessibility:

- **Inaccessible** school buses
- **Inaccessible facilities** in schools (drinking water facilities, canteens and toilets)
- **Inappropriate infrastructure** in classrooms (uncomfortable seating, slippery flooring and low illumination).
- **Misinformed attitudes and perceptions** among parents, teachers, staff, and communities.
- **The lack of teaching and learning practices** that integrate inclusive technologies and digital equipment to engage the child, such as assistive devices, are additional challenges.
- **At training programmes conducted by UN-Habitat India and IIT Kharagpur:** Accessible infrastructure within schools, such as ramps or tactile paths, are either in deficit or have not been constructed utilizing suitable materials.

#### Different laws for providing accessible education to all:

- **Article 21A** of the Constitution
- **Right of Children to Free and Compulsory Education Act, 2009:** the fundamental right to education and the right to have free and compulsory education for children aged 6-14 years.
- **The Sarva Shiksha Abhiyan**, which adopted a '**zero rejection policy**'
  - It emphasizes that "every child with special needs, irrespective of the kind, category and degree of disability, is provided with a meaningful and quality education".
- **India ratified the UN Convention on the Rights of Persons with Disabilities:**
- **Accessible India Campaign (Sugamya Bharat Abhiyan) in 2015:** Accessibility to built environment.
- **Principle of Leave No One Behind (LNOB):** which is the central, transformative promise of the 2030 Agenda for Sustainable Development.

#### What steps need to be taken?

- **Awareness and sensitisation programmes** for children, parents, and caregivers
- **Training trainers** for upskilling of school faculty and special educators and providing access to updated teaching toolkits and materials
- **Technical training** for local government departments
- **co-learning platform** for knowledge-sharing between all.

#### Constitutional Provisions related to education:

- *Part IV* of Indian Constitution, *Article 45 and Article 39 (f)* of Directive Principles of State Policy (DPSP), has a provision for state-funded as well as equitable and accessible education.
- **The 42nd Amendment to the Constitution in 1976** moved education from the State to the *Concurrent List*.
- **Article 21A:** It provides free and compulsory education of all children in the age group of *six to fourteen years* as a fundamental Right in such a manner as the State may, by law, determine. The *86th Amendment in 2002* made education an enforceable right under Article 21-A.
- **Article 39(f):** It provides that children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.



- **Article 45:** The State shall endeavor to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.
- **ARTICLE 46:** The State shall promote with special care the educational and economic interests of the weaker sections of the people, and in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation.

#### Government Initiatives:

- National Education Policy 2020.
- Samagra Shiksha (SS) 2.0
- NIPUN Bharat Mission
- PM Poshan Scheme
- Unified District Information System for Education (UDISE).
- Performance Grading Index
- **National Education Policy (NEP) 2020: It gives high priority** to the acquisition of foundational literacy and numeracy skills especially for children in early grades.
- **“NIPUN Bharat” (where NIPUN is National Initiative** for Proficiency in Reading with Understanding and Numeracy) the government’s flagship programme designed to translate policy into practice, is beginning to have traction in many States.

#### Way Forward

- **To motivate all children to meaningfully participate** in all indoor and outdoor activities without barriers or limitations, the school ecosystem has to be made safe, accessible, and reliable.
- **The cooperation, involvement, and sensitisation** of parents and caregivers, teachers, school management authorities, and the local government departments are required so that all these barriers are actively addressed.
- **Mainstreaming LNOB project by UN-Habitat:** pilot training programmes on enhancing accessibility and inclusion were implemented in two schools in Delhi with support from IIT Kharagpur and the Department of Social Welfare, Delhi government.
- **Through interactive training sessions and simulation exercises** that encourage empathy-building.
  - It can go a long way in creating inclusive spaces.
- **Developing inclusive and accessible schools** will be a big step towards not only challenging perceptions about CWD, and the associated discrimination, but also in actualising the zero-rejection policy in schools.
- **A multi-pronged participatory approach** towards providing an enabling environment for the empowerment of future citizens is needed to ensure that stakeholders in the school ecosystem collectively work towards promoting accessibility and inclusion in schools.
- **Five principles:**
  - Equitability, usability and durability, affordability, cultural adaptability, and aesthetic appeal.
  - They should be embedded from the planning to implementation to evaluation stages of providing infrastructure services in schools.

### ADVENT OF FOREIGN UNIVERSITIES IN INDIA

#### Context:

- Recently, the **University Grants Commission (UGC)** uploaded a draft regulation on the **‘Setting up and Operation of Campuses of Foreign Higher Educational Institutions (FHEIs) in India’**. A legislative framework facilitating such entry will be put in place, and such universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India.
- Initially, **permission would be granted for ten years**, with renewal being subject to the fulfilment of requisite conditions. The foreign universities would have the freedom to devise their own curricula and admission process.

- The National Education Policy (NEP) 2020 **provided that “selected universities e.g., those from among the top 100 universities in the world will be facilitated to operate in India.**

### What is the Significance of this Step?

- **Benefits to India:**
  - **Cut-down Outflow of Indian Money and Brain Drain:**
    - There are a **number of Indian students who opt for foreign degrees**, which means an outflow of Indian money.
      - ✓ A recent report by a leading consulting firm estimated that **Indian students’ overseas spending is set to grow from the current annual USD28 billion to USD80 billion annually by 2024.**
      - ✓ The number of Indian students opting for higher education abroad rose from 4.4 lakh in 2016 to 7.7 lakh in 2019; it is set to grow further to roughly 18 lakh by 2024, resulting in higher overseas expenditure on higher education.
  - **Address the issue of Gross Enrollment Ratio:**
    - The advent of foreign universities in India **may increase the enrollment ratio by providing more options for higher education and potentially attracting more students to pursue degrees.**
      - ✓ Despite having one of the largest higher education systems in the world, **India’s Gross Enrolment Ratio (GER)** in higher education is just 27.1%, among the world’s lowest.
  - **Cultural Exchange:**
    - Having foreign universities in India can **foster cultural exchange and understanding between India and other countries.**
  - **Increased Competitiveness:**
    - By having foreign universities in India, **the country can become more competitive globally in terms of education and research.**
  - **Brand Building:**
    - It can also **increase the brand value of the country, providing an opportunity to showcase the country's potential and strengths to the world.**
- **Benefits to Foreign Universities:**
  - India has a **large and rapidly growing population of young people**, many of whom are eager to pursue higher education.
  - India has a **large pool of highly educated and skilled workers**, making it an attractive destination for foreign universities looking to establish research centers or other operations.
  - India's economy is **growing rapidly, and this presents an opportunity for foreign universities to establish a foothold in the country.**

### What will be the Challenges with the Setting up of Foreign Universities in India?

- **Quality of Education:**
  - The **quality of education provided by FHEIs may not be up to the standards of Indian institutions**, which could negatively impact the employability and future prospects of Indian students.
- **Fees:**
  - The **fees charged by FHEIs are often much higher than those charged by Indian institutions**, which could make higher education less accessible to students from lower-income families.
- **Lack of Oversight:**
  - The **regulatory oversight of FHEIs in India may be inadequate**, which could lead to situations where students are taken advantage of or left without recourse in case of problems.
- **Cultural Impact:**
  - The **influx of foreign institutions and students could lead to a loss of Indian culture and values**, as well as a lack of integration between Indian and foreign students.
- **National Security Concerns:**
  - The **foreign institutions may be used for espionage and other illegal activities.**
- **Not Enough Resources:**

- Truly reputed higher educational institutions operate on a **not-for-profit basis and have no materialistic motives to go offshore.**
  - A few countries that have **such offshore campuses had to hard-sell the institutions the idea by leasing land at almost no cost**, bearing the bulk of infrastructure cost and promising them the academic, administrative and financial autonomy that they enjoy in their home country.
- **India could hardly afford any such incentives.**
- **Autonomy to Foreign Institutions:**
  - The draft notification promises **academic, administrative and financial autonomy to foreign institutions but takes that away by asserting that they abide by all the conditions** that the UGC and the Indian government prescribe from time to time.
  - The provision that the **foreign higher education institutions must not do anything “contrary to the sovereignty and integrity of India, the security of the State**, friendly relations with foreign States, public order, decency or morality” might deter the best universities that most value their academic autonomy.

#### Way Forward:

- **Developing Clear and Transparent Regulations:**
  - The government should establish clear guidelines and regulations for the establishment, operation, and accreditation of foreign universities in India. This can help ensure that these institutions operate in a way that is consistent with Indian laws and regulations.
- **Promoting Collaboration and Partnerships:**
  - Instead of allowing foreign universities to establish standalone campuses in India, the government could encourage them to collaborate and partner with existing Indian institutions. This could help to mitigate **competition and ensure that the benefits of foreign universities are shared with Indian institutions and students.**
- **Reforming Universities of India:**
  - Government need to **reform universities in India that would involve a number of different steps**, such as improving the quality of education, increasing funding for higher education, and promoting research and innovation.
- **Setting up EEZs:**
  - Another step can be Setting up **Education Excellence Zones (EEZs) and International Universities.**
  - As a result, **knowledge production would be clustered in India, and FHEIs could be invited into these EEZs for true inter-university excellence and competition.**

### IN IN NREGA REFORMS, PRIORITIZE THE WORKER AND HER DUES NREGA REFORMS, PRIORITIZE THE WORKER AND HER DUES

#### Context:

- **The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has been reformed many times over years.**

#### MGNREGA:

- **The scheme was introduced as a social measure that guarantees “the right to work”.**
- **The local government will have to legally provide at least 100 days of wage employment in rural India to enhance their quality of life.**
- **The Ministry of Rural Development (MRD), Govt of India is monitoring the entire implementation of this scheme in association with state governments.**
- **Within 15 days of submitting the application or from the day work is demanded, wage employment will be provided to the applicant.**
- **Right to get unemployment allowance in case employment is not provided within fifteen days of submitting the application or from the date when work is sought.**
- **Social Audit of MGNREGA works is mandatory, which lends to accountability and transparency.**



- The Gram Sabha is the principal forum for wage seekers to raise their voices and make demands.
- The Gram Sabha and the Gram Panchayat approve the shelf of works under MGNREGA and fix their priority.

#### Issues with MGNREGA:

- Poorer States struggle more to adapt when compared to those that are better off because of weaker administrative capacity.
- Programme's "regressive" spending pattern, where poorer States spend less NREGA funds than better-off ones.
- Its most basic design principles have been forgotten or wilfully ignored.
- The process of wage payments created by the central government has become even more convoluted.
  - For example: seven or more functionaries have to sign off before payment due to a worker can be approved (stage one of the wage payment cycle).
- Intermittent and unpredictable fund releases by the central government are one of the fundamental reasons why State governments are unable to ensure the full potential of NREGA.
  - Inadequate funds, typically discourage and often deny demand for work.
- Worksites are not opened on time, and the work provided does not match demand.
- Majority of reforms have focused on centralisation such as the electronic fund management system, geo-tagging of assets and a national mobile monitoring system (NMMS)
  - They have disrupted implementation.

#### How to address violation of entitlements?

- Address delays in wage payments to restore the faith of workers in the programme.
- The Ministry of Rural Development must simplify the payment process
- Transparency about pending wage payments in stage one and two so that bottlenecks can be corrected.
- Strengthen implementation capacities where expenditure is low instead of curbing expenditure where employment generation is high.
- Instead of using expenditure and income poverty as the only markers: exclusion must be identified at the household level.
  - Evidence shows that NREGA is fairly well targeted, benefiting the poorest, especially SC and ST families.
- The online Management Information System of NREGA can be used in areas where entitlements are violated instead of being used as a tool by bureaucrats to centralize and control things.
- Run the programme like a demand-based law, and not a scheme.
- Make discussions on any proposed reforms participatory: Public participation, which gave NREGA an institutional architecture is needed.
- Government should make an earnest attempt to map the impact of each of its "reforms" on access to and the expenditure of NREGA, particularly in poorer States.

#### Alternative Steps taken to address problems with NREGA:

- The Kaam Mango Abhiyan was launched by the Ministry of Rural Development in 2013 — due to declining demand of work under NREGA)
- The Union Ministry of Rural Development launched this campaign, "ask for work" — with the help of civil society organizations in six districts in six States

#### Cases of not getting work or wages:

- 53,000 workers demanded work in Katihar district: dated receipts were provided.
  - Workers demanding work were let down by the Ministry because funds were not released to States in time.
- Workers in Barari block of Katihar were on indefinite strike as they have not been provided work and wages for the work they have done.

- Almost 3,000 women NREGA workers in Muzaffarpur district are protesting against the NMMS application after the app failed to capture their attendance.
  - They have been denied their wages.

### Way Forward

- **States which are spending more are implementing** the programme better because they have better capacities (as several studies including the government's own Economic Survey concluded in 2016).
  - **For a universal, demand-based social security programme** such as NREGA, reforms cannot be based on targeting better.
  - There has to be a focus on exclusion and not inclusion "errors".
- **Panchayats, blocks and districts** where employment of SCs and ST families is lower than their proportion in the population must be identified.
  - This would indicate pockets where the most marginalized are being nudged out of the programme.
- **Panchayats where the average wage being paid** is lower than the notified wage rate must be identified as well.
  - This would indicate places where the implementing authorities need to be hauled up for failing to ensure work is completed
- **Given the financial needs of this programme:** The General Financial Rules need to be reimagined so that budgetary allocations remain flexible to the need for funds by States in response to demands for work.
- **State governments have played a pivotal role in the successes and failures of NREGA**, and any proposed reforms must be tabled in State assemblies in addition to Parliament.
  - Bring civil society organizations, worker unions and representatives of self-help groups into the discussion.
- **The central government must be held accountable** for the denial of entitlements to NREGA workers as a result of top down "reforms" that workers had no say in designing.
- **Reforms to NREGA must prioritize the access of workers to entitlements** with ease and dignity, rather than focus on administrative and fiscal efficacy alone.

## ALL INDIA SURVEY ON HIGHER EDUCATION 2020-2021

### Context:

- The **Union Ministry of Education** released data from the **All-India Survey on Higher Education (AISHE), 2020-2021**, which showed a **7.5% increase in student enrolments** across the country compared to **2019-20**.
- The survey also revealed that in 2020-21, the year when the **Covid-19 pandemic** began, there was a **7% rise in enrolments in distance education programmes**.

### What is the AISHE?

- To portray the status of higher education in the country, the **Ministry of Education** has endeavoured to conduct an **annual web-based AISHE** since 2010-11.
  - Data is being collected on several parameters such as teachers, student **enrolment, programmes, examination results, education finance, infrastructure**.
- Indicators of educational development such as **Institution Density, Gross Enrolment Ratio, Pupil-teacher ratio, Gender Parity Index, Per Student Expenditure** will also be calculated from the data collected through AISHE.
  - These are useful in making informed policy decisions and **research for development of the education sector**.

### What are the Major Highlights of the AISHE Data?

- **Student Enrolment:**
  - **Gross Enrolment Ratio (GER)** for all enrolments (as per 2011 Census) increased by over **2 points to 27.3**.
    - The **highest enrolment was seen at the undergraduate level**, which accounted for **78.9%** of all enrolments.

- The **female enrolment in higher education** programmes had increased to **49% of total enrolments in 2020-21** compared to 45% in 2019-20.
  - But, the overall figures for **Science, technology, engineering, and mathematics(STEM)** enrolments (at all levels of **higher education**) showed that women lagged behind men, who accounted for over 56% of enrolments in these fields.
- **Gender Parity Index (GPI)**, the ratio of female GER to male GER, has increased from 1 in 2017-18 to 1.05 in 2020-21.
- The number of students in the Persons with Disabilities **category** dropped in **2020-21** to 79,035 from 92,831 in 2019-20.
- The **proportion of Muslim students** enrolling for higher education dropped to **4.6% in 2020-21** from 5.5% in 2019-20.
- **Uttar Pradesh; Maharashtra; Tamil Nadu; Madhya Pradesh; Karnataka and Rajasthan** are the top 6 States in terms of number of students enrolled.
- **Universities and College:** During **2020-21**, the number of **universities has increased by 70**, and the number of **colleges has increased by 1,453**.
  - The **21.4% government colleges** accounted for **34.5% total enrolments** in 2020-21, whereas the rest **65.5% enrolments were seen at private aided colleges and private unaided colleges** put together.
  - **Uttar Pradesh; Maharashtra; Karnataka; Rajasthan; Tamil Nadu; Madhya Pradesh; Andhra Pradesh and Gujarat** are the top 8 States in terms of number of colleges.
- **Faculty:** The female per 100 male faculty has improved to 75 in 2020-21 from 74 in 2019-20 and 63 in 2014-15.

#### What are the Current Major Issues Related to India's Higher Education System?

- **Faculty Shortage:** AISHE 2020-21 showed that the **teacher-pupil ratio was at 27** for all universities, colleges and standalone institutions and at **24 if only regular mode is considered** due to which the quality of education remains a concern.
- **Inadequate Infrastructure:** Poor infrastructure is another challenge to higher education in India.
  - Due to the **budget deficit, corruption and lobbying** by the vested interest group, public as well as private sector universities in India lack the necessary infrastructure.
- **Regulatory Issues:** Management of Indian higher education faces challenges of lack of **accountability, transparency, and professionalism**.
  - As a result of the increase in the number of affiliated colleges and students, the **burden of administrative functions of universities has significantly increased** and the core focus on academics and research is diluted.
- **Problem of Brain Drain:** Due to cutthroat competition for **getting admission in top institutes like IITs and IIMs**, a challenging academic environment is created for a large number of students in India, so they prefer going abroad, **which makes our country deprived of good talent**.
  - There is definitely a **quantitative expansion of education in India** but the **qualitative front (essential for a student to get a job)** is lagging behind.

#### How can the Indian Higher Education System be Revolutionized?

- **Implementation of National Education Policy (NEP):** The implementation of the **NEP** can help shake the education system from its slumber.
  - Moving away from the **current 10+2 system to a 5+3+3+4 system** will bring the **pre-school age group** formally into the education set-up.
- **Education-Employment Corridor:** India's educational setup needs to be enhanced by **integrating vocational learning with mainstream education** and providing right mentorship at school (**especially in government schools**) to ensure that **students are guided in the right direction** from the start and are aware of career opportunities.
- **Taking a Note from Past to Future:** It is important to look to the future while keeping our long-established roots in mind.



- The **ancient evaluation of education was not restricted to grading thematic knowledge**. Students were assessed on the skills they learned and how well they can apply practical knowledge to real-life situations.
  - The modern education system can also **devise similar systems of assessment**.



## INTERNATIONAL RELATIONS

### YOUNG PROFESSIONALS SCHEME INDIA - UK

#### In News

- The governments of India and the U.K. recently marked **Pravasi Bharatiya Divas on January 9, 2023** by initiating the **Young Professionals Scheme**.

#### More about the news

- **About:**
  - The Young Professionals Scheme was conceived as part of an **India-U.K. The Migration and Mobility MoU** signed in May 2021, was announced in November at the **G20 summit in Bali**.
- **Key highlights of the scheme:**
  - The scheme will permit degree-holding citizens aged between 18 and 30 to live and work in each other's countries for a period of two years.
    - They would be able to either work, study, or visit, for two years.
    - The scheme will run for a period of three years initially.
  - The scheme allows for **exchange visas for up to 3,000 individuals per year**.
  - It isn't even necessary for an applicant to have a job in hand when he/she applies for the visa.
    - So, the successful candidates could look for a job, educational or cultural opportunity once they arrived in their host country. Or they could just visit.
- **Challenges:**
  - The signing of the agreement belies more complex issues around the movement of persons across borders.
    - Part of the Migration and Mobility agreement of 2021 seeks to address the return of illegal migrants to their home countries.

#### India-UK Relations

- **About:**
  - UK-India relationship is rooted in India's colonial history with the British and the relationship shared by both countries even after India's independence.
  - The bilateral relationship was upgraded to a strategic partnership in 2004.
- **Political:**
  - They share a modern partnership which was upgraded to a strategic partnership in 2004.
  - The UK supports India's proposal for permanent membership of the UNSC and is also an important interlocutor for India on global platforms.
- **Economic Engagements:**
  - **Trade:**
    - UK is among India's major trading partners and as per trade statistics of MoC&I, India's trade with the UK in 2017-2018 was US \$14.497 billion.
  - **Investment:**
    - UK is the 4th largest inward investor in India, after Mauritius, Singapore and Japan with a cumulative equity investment of US \$26.09 billion (April 2000-June 2018), accounting for around 7% of all foreign direct investment into India. India continued to be the third largest investor in the UK and emerged as the second largest international job creator with Indian companies having created over 110,000 jobs in the UK.
- **Defence:**
  - In 2015, the two countries agreed to elevate their Defence relationship by establishing capability partnerships in strategic areas.
  - The institutionalized dialogue to discuss defense cooperation viz. Defence Consultative Group Meeting, is held annually at Defence Secretary level.

- Ajeeya Warrior (army-to-army biennial exercise), the Konakan (joint navy-to-navy annual exercise) and the Indradhanush (joint air-to-air exercise) happen between India and UK.
- **Education:**
  - Over the last 10 years, the relationship has grown substantially with the introduction of bilateral mechanisms such as the India-UK Education Forum, UK-India Education and Research Initiative (UKIERI), Joint Working Group on Education, Newton-Bhabha Fund and Scholarship schemes.
- **Science and Technology:**
  - Joint investment in UK-India research has grown from less than £1 million in 2008 to over £200 million.
  - A India-UK Clean Energy R&D Centre with a focus on solar energy storage and a collaborative R&D programme in energy efficient building materials were announced.
  - New research partnerships worth £80 million including a new Joint Strategic group on Antimicrobial Resistance (AMR) with a joint investment of up to £13 million have also been established.
- **Cultural Linkages:**
  - Cultural linkages between India and UK are deep and extensive, arising out of shared history between the two countries.
  - There has been a gradual mainstreaming of Indian culture and absorption of Indian cuisine, cinema, languages, religion, philosophy, performing arts, etc.
  - 2017 was celebrated as the India-UK year of Culture to mark the 70th anniversary of Indian independence.
- **Indian Diaspora:**
  - The Indian Diaspora in the UK is one of the largest ethnic minority communities in the country.
  - As per the 2011 census, approximately 1.5 million people of Indian origin live in the UK equating to almost 1.8 percent of the population and contribute 6% of the country's GDP.
- **Roadmap 2030:**
  - The "Roadmap 2030" for India-UK future relations was launched during India-UK Virtual Summit for-
    - Revitalised and dynamic connections between people;
    - Re-energised trade, investment and technological collaboration that improves the lives and livelihoods of the citizens;
    - Enhanced defence and security cooperation that brings a more secure Indian Ocean Region and Indo-Pacific and
    - India-UK leadership in climate, clean energy and health that acts as a global force for good.

## INDIA AUSTRALIA ECONOMIC COOPERATION AND TRADE AGREEMENT

### In News

- Recently, the IndAusECTA (**India Australia Economic Cooperation and Trade Agreement**) Agreement, which was signed last year, has **come into force** after Ratification and Exchange of Written Instruments.

### Major Areas of IndAusECTA

- Trade in Goods
- Trade in Services
- Rules of Origin
- Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary (SPS) measures
- Customs Procedures and Trade Facilitation
- Trade Remedies
- Legal & institutional Issues
- Movement of Natural Persons

### Current Trade trends between India and Australia

- **Imports:**



- India's imports from Australia amount to 17 US \$ billion India's imports from Australia are primarily (96%) **raw materials & intermediate goods**.
- They are highly concentrated in Coal (74% of Australia's exports to India) out of which 71.4% is coking coal.

- **Exports:**

- India's exports to Australia amount to 10.5 US \$ billion.
- India's exports to Australia are broad-based and dominated by finished products (consumer goods).
- India also spends \$ 4 bn approx. each year on education of students in Australia.

### Benefits for India

- **Benefits under Trade in Goods:**

- Indian goods on all tariff lines to get access to the Australian market with zero customs duty (currently subjected to 5% import duty by Australia).
- Immediate duty-free access covers **all labour-intensive sectors** such as Textiles and Apparel, Agricultural and Fish products, Leather, Footwear, Furniture, many Engineering Products, Jewellery and select Pharmaceuticals.
- Cheaper Raw Materials, Faster Approval for Medicines
- Immediate Duty-Free Access is projected to potentially **create 10 lakh jobs in India and additional exports of \$ 10 bn** from India to Australia in the next five years.
- India has offered concessions on **Tariff lines of export interest** to Australia like Coking coal and Thermal coal, Wines, Agricultural products – 7 of them with TRQ (Cotton, Almonds shelled and in shell, Mandarin, Oranges, Lentils, Pear), Metals (Aluminium, Copper, Nickel, Iron & Steel) and Minerals (Manganese Ore, Calcined Alumina).
- **Exceptions:** Many sensitive products such as milk and other dairy products, wheat, sugar, iron ore, apple, walnuts and others, have been kept in India's Exclusion list.

- **Benefits under Trade in Services:**

- Australia has committed its schedule in the negative list and has also made wide-ranging commitments in around 135 sub-sectors with **Most Favoured Nation (MFN)** status in around 120 sub-sectors.
- India has for the first time **agreed to Negative listing** after 5 years of coming into force of the Agreement.
- India is also making a commitment to Australia in around **103 Service Sub-Sectors** with Most Favoured Nation status in around 31 Service Sub-sectors for the first time.
- The Agreement opens avenues for investment in **computer related services, telecom**, construction, health & environmental services.
- More than **1 lakh Indian students in Australia** will benefit from post-study work visas (18 months – 4 years).
- The Agreement provides for an **Annual Quota of 1,800 for Yoga teachers and Indian Chefs**.
- It makes an arrangement for **Work and Holiday Visas** for young professionals.
- Commitments have also been made to pursue Mutual Recognition Agreements (MRAs) in professional services in 12 Months.

- **Protective Features to guard against Unintended Consequences:**

- The #IndAusECTA also has certain 'protective features' aimed at guarding both countries against unintended consequences on trade.
- Stringent Rules of Origin –
  - Value Addition of 35% + Change in Tariff Subheading (CTSH)
  - In calculation of Value Addition, 2 different values agreed to (35% or 45%) depending on method of calculation (based on whether profit is excluded or included)
- Product Specific Rules negotiated for 807 products

- Requirement of 'melt and pour' for iron & steel products included in the Product Specific Rules for these products.
- Strict Operational Customs Procedures
  - A specific clause included to ensure only items made in Australia count for value addition, no other country products
  - A Bilateral Safeguard Mechanism will be available for 14 years in case of surge in imports:
- A special clause on Review has been agreed upon to enable either country to request a Review for parts of the Agreement which may be a cause of concern, after 15 years
  - Review compulsory if requested (it shall happen)
  - Must be completed in 6 months
- **End to Double Taxation:**
  - A provision in the Double Taxation Avoidance Agreement (DTAA) was used to tax this remittance.
  - However, the Agreement has **removed the discrepancies** with regard to use of DTAA for taxation of Indian firm royalties, fees and charges.
  - Australia has no domestic provision for charging tax on royalties, fees and charges by firms sending these to parent companies.
- **Boost to Economy:**
  - Exports are expected to increase by **10 billion** by 2026-27 with a creation of approximately 10 lakh jobs.
  - The total bilateral trade is expected to cross **US \$ 45-50 billion by 2035**.
  - The coming into force of the India Australia ECTA is expected to consolidate and help in the growth of market share of Indian products and services.

#### Way Ahead

- There is a **lot of potential for exporting** finished goods to Australia, since they hardly manufacture anything, they are largely a raw material and intermediate producing country.
- India can get **cheaper raw materials** which will not only make India more **competitive globally** but also enable it to serve Indian consumers better; enabling it to provide more quality goods at more affordable prices
- Ind – Aus ECTA brings together **two major economies of the world**, - India the 5th largest economy and Australia the 14th largest economy.
- The trade between the two countries is hugely **complementary**, this offers opportunities on both sides and will pave the way for a **win-win solution** for both India and Australia.

### INDIAN DIASPORA

#### In News

- Recently, the Prime Minister of India inaugurated the **17th Pravasi Bharatiya Divas convention**.

#### About Pravasi Bharatiya Divas (PBD)

- **Origin:**
  - To mark this day, the tradition of celebrating Pravasi Bharatiya Divas (PBD) started in 2003.
  - 1st PBD Convention was organized on 9 January 2003 to mark the contribution of the overseas Indian community to the development of India.
  - Since 2015, under a revised format, PBD Convention has been organized **once every 2 years (biennial)**.
- **Significance:**
  - 9 January commemorates the return of Mahatma Gandhi from South Africa to India in 1915.
  - It is celebrated grandly to strengthen the engagement of the Government of India with the overseas Indian community.
- **Concerns with Celebrations:**
  - **Low/semi-skilled and blue collar workers** may not find a place or feel comfortable to participate in the said celebration as the general profile of participants is seen to be of very high level.

- The participation and involvement should be **more broad-based**, accommodating the **vulnerable sections** of the diaspora community too.

• **Themes:**

- 17th PBD- "Diaspora: Reliable Partners for India's Progress in Amrit Kaal".
- 16th PBD- "Contributing to Atma Nirbhar Bharat ".

**Indian Diaspora**

• **Meaning:**

- The term diaspora traces its roots to the **Greek diaspeiro**, which means dispersion.

• **Historical Background:**

- The Indian diaspora has grown manifold since the first batch of Indians were taken to counties in the **east pacific and the Caribbean islands** under the ‘**Girmitiya**’ arrangement as indentured labourers.
- The 19th and early 20th centuries saw thousands of Indians shipped to those countries to work on **plantations in British colonies**, which were reeling under a labour crisis due to the abolition of slavery in 1833-34.
- 2023 marks the 150th year of the first such journey of Indians to **Suriname**.
- As part of the **second wave** of migration, nearly 20 lakh Indians went to **Singapore and Malaysia** to work in farms.
- The **third and fourth wave** saw professionals heading to **western countries** and workers going to the **Gulf and west Asian countries** in the wake of the oil boom.

**Difference Between PIO and OCI**

A PERSON OF INDIAN ORIGIN (PIO)	PIO VS OCI	OVERSEAS CITIZEN OF INDIA (OCI)
<ul style="list-style-type: none"> <li>➤ Means a <b>foreign citizen</b> (except a national of Pakistan, Afghanistan Bangladesh, China, Iran, Bhutan, Sri Lanka and Nepal)</li> <li>➤ A <b>foreign citizen whose one of the parents/ grandparents/ great grandparents was born and a permanent resident of India</b></li> <li>➤ Who is a <b>spouse</b> of a citizen of India or a PIO</li> </ul>	<p>A <b>foreign national</b>, who was <b>eligible to become citizen of India on 26.01.1950</b> or was a citizen of India on or at anytime after <b>26.01.1950</b> or belonged to a territory that became part of India after <b>15.08.1947</b> is <b>eligible for registration as Overseas Citizen of India (OCI)</b>. Minor children of such person are also eligible for OCI. However, if the applicant had ever been a citizen of Pakistan or Bangladesh, he/she will not be eligible for OCI.</p>	
<p><b>BENEFITS</b></p> <ol style="list-style-type: none"> <li>1. PIO card holders <b>do not require a visa to visit India</b> for a period of 15 years from the date of issue of the PIO card.</li> <li>2. They are <b>exempted from registration at FRRO/ FRO</b> if their <b>stay does not exceeds 180 days</b>. In case if the stay exceeds 180 days, they shall have to register with FRRO/ FRO within the next 30 days</li> <li>3. They <b>enjoy parity with NRIs in economic, financial and educational benefits</b></li> <li>4. All <b>future benefits that would be exempted to NRIs</b> would also be available to the <b>PIO card holders</b></li> </ol>	<p><b>BENEFITS</b></p> <p>OCIs are <b>entitled to a multipurpose, multiple entry, lifelong visa</b> allowing them to visit India at any time, for any length of time and for any purpose</p> <ul style="list-style-type: none"> <li>➤ <b>Exempted from police reporting</b> for any length of stay in the country</li> <li>➤ <b>Have also been granted all rights in the economic, financial and education fields in parity with NRIs</b> except, the right to acquisition of agricultural or plantation properties</li> </ul>	

• **Numbers:**

- As on December 31, 2021, there were **4.7 crore Indians** living overseas.
- The number includes NRIs, PIOs, OCIs, and students. Excluding students, the number stands at 3.22 crore, including 1.87 crore PIOs and 1.35 crore NRIs.
- According to the **World Migration Report**, prepared by the International Organisation for Migration under the United Nations, India has the **largest emigrant population** in the world, making it the top origin country globally, followed by **Mexico, Russian and China**.

• **Geographical spread:**

- The geographical spread of the Indian diaspora is vast.
- The countries with **over 10 lakh overseas** Indians include United States of America (44 lakh), United Kingdom (17.6 lakh), United Arab Emirates (34 lakh), Sri Lanka (16 lakh), South Africa (15.6 lakh), Saudi Arabia (26 lakh), Myanmar (20 lakh), Malaysia (29.8 lakh), Kuwait (10.2 lakh) and Canada (16.8 lakh).

• **Remittances:**



- As per the latest **World Bank Migration and Development Brief 2022**, “For the first time a single country, **India**, is on track to receive more than \$100 billion in yearly remittances.”
- The **World Migration Report** notes that **India, China, Mexico, the Philippines and Egypt** are (in descending order) among the top five remittance recipient countries, “although India and China were well above the rest”.
- **Involvement in politics:**
  - The vocal political positions taken by a section of the Indian diaspora, particularly in the **US and the UK**, is a fairly recent phenomenon.
    - For instance, the Hindu American Foundation, a Hindu advocacy group based in the US, was set up in 2003, the same year the Pravasi Bharatiya Convention was launched.
  - Many prominent overseas Indians play an active role in organising global meetings.

### **Conclusion**

- Indians living overseas are “**brand ambassadors**” of the country on foreign soil.
- Overseas Indians can **project the truth about India** to the world in a **credible and effective manner** and counter “propaganda”.

## **UKRAINE’S WAR LESSONS**

### **Context**

- What started off as a minor conflict in eastern Ukraine in 2014 has now snowballed into a de facto war between Russia and the collective West within the borders of Ukraine.
- His limited war machine is under enormous pressure, but he can’t retreat unless he is ready to accept political and geopolitical costs.
- There is still a lack of clarity and uncertainty on Russia’s objectives in Ukraine and what it will do next to meet them.

### **Russia’s Aura has Dipped**

- Putin disrupted Georgia’s ambition to join the North Atlantic Treaty Organization (NATO).
- He made forays into West Asia neutralizing Israel and Turkey, both American allies.
- He took Crimea without a fight and turned Russia again into an energy superpower.
- But that aura has slipped as Russia’s superior troops have been struggling to cope with battlefield setbacks in Ukraine.

### **A New World**

- After the disintegration of the Soviet Union, the U.S. had established a de facto unilateral hierarchy, which is rare in international relations.
- Global politics has historically been dominated by multiple pillars.
- But the U.S. was at the pinnacle of its power in the 1990s.
- In recent years, however, there have been signs of the passing of American unilateralism.
- America’s wars in the Muslim world did not proceed as Washington had expected.
- As the U.S. got stuck in Afghanistan and Iraq, Russia became more aggressive, Iran more defiant, and China more powerful.
- Russia’s intervention in Georgia and its annexation of Crimea.
- Iran’s growing militancy in West Asia
- America’s defeat in Afghanistan.
- These were some signs of a shift in the global order

### **Essential Anarchy**

- After a brief period of unilateral hierarchy, the world is returning to, what Realists call, its **essential anarchy**.
- In which great powers compete for maximizing their powers.
- But it is not clear what kind of an order, if an order emerges at all, will replace American unilateralism.
- The U.S. seems to have realised that the world has changed.

### Approach Pursued by USA

- USA has taken pains to keep the Western alliance together.
- It wants a coalition of democracies against dictatorships.
- It admits that the 'rules-based order' faces systemic challenges from Russia and China.
- But at the same time, it doesn't want a direct conflict with Russia
- It seeks to **bleed Russia out in Ukraine**, an approach that U.S. President Ronald Reagan had towards the Soviet Union in Afghanistan.

### Misadventure of Great Powers

- The U.S. intervention in Vietnam, its invasion of Afghanistan, and the Soviet intervention in Afghanistan are some of the best examples of great powers getting stuck in smaller theatres.
- But historical examples do not deter offensive nations.
- When Mr. Putin ordered his special military operation, it is possible that he expected quick results.
- But he miscalculated the power of Ukrainian nationalism.
- What Ukraine had to do was to survive the initial Russian thrust.
- When that was achieved, it opened avenues for Russia's rivals in the West to start supplying Ukraine with money.
- Weapons including advanced rocket systems and artillery , intelligence and mercenaries.
- If the war was left to Russia and Ukraine, the former would have, in theory, secured a victory.

### China's Takeaway

- There were enhanced tensions between China and the U.S. over Taiwan last year. U.S. President Joe Biden has repeatedly said that the U.S. would defend Taiwan in the event of an attack from China.
- This signalled a shift in Washington's policy of '**strategic ambiguity**'.
- One argument in American strategic circles is that defeating Russia in Ukraine would discourage Chinese President Xi Jinping from making any adventurous move towards Taiwan.
- If Russia gets away with Ukraine, that will embolden Mr. Xi, they argue.

### On The Flip Side

- Ukraine war and the West's collective pursuit to punish Russia has driven the giant bear deeper into the embrace of the Chinese dragon.
- If, during the Cold War, the U.S. strove to exploit the divisions between the Soviet Union and China
- China and Russia, under Mr. Xi and Mr. Putin, respectively, are boasting of their 'no limits' relationship today.
- One of the reasons for the U.S. pivot from West Asia and Afghanistan was to focus its resources on tackling the rise of China.

### Conclusion

- China is the only revisionist power with the capabilities to challenge the 'rules- based order.
- U.S. last year got dragged more and more into Europe and spent enormous resources on Ukraine.
- China would like to see the U.S. being distracted in Europe while it strengthens its ties with Russia and spreads its influence elsewhere.
- For USA it would be appropriate to think whether the time, resources and energy it is spending on Ukraine is worth it?

## GLOBAL SOUTH: EMERGENCE OF NEW WORLD ORDER

### Context

- Union External Affairs Minister S. Jaishankar led the Foreign Ministers' session of the Voice of Global South Summit where he said that India has emerged as an education and healthcare hub for the countries of Global South. Jaishankar highlighted India's capacity-building programmes and its first responder activities

in case of Humanitarian Assistance and Disaster Relief (HADR) situations which showed that the country has emerged as an education and healthcare hub for the Global South countries.

### Outcomes of Summit

- It has provided valuable inputs from the Global South that could facilitate India's ambition to steer the G20 summit in Delhi to success later this year.
- It underlines the willingness across the Global South to support Indian leadership in addressing the global challenges that have had a massive impact on the condition of many developing countries.
- During the summit, India unveiled three initiatives to assist the Global South in areas ranging from **technology to health, medical supplies** will be provided to any developing country hit by natural disasters under the "Aarogya Maitri" project.
  - India will establish a **Global South Centre of Excellence** to undertake research on development solutions for developing countries and call for human-centric globalisation to address their concerns.
  - India will "launch a **Global South Science and Technology** initiative to share our expertise with other developing nations."
  - India proposed a '**Global South Young Diplomats Forum**' to "connect youthful officers to our Foreign Ministries" for synergising the group's diplomatic voice.

### What do you mean by the term Global South?

- The term Global South in common parlance is used for the countries which have **low levels of economic and industrial development**, which are mainly located in the southern part of the world and are located to the south of the industrialized, developed nations.
- Another way one can understand Global South is the regions of **Latin America, Asia, Africa, and Oceania**.
- Additionally, the phrase 'Global South' paints a vision of the world with the historically neglected and minor geopolitical players at its center.

### India's Approach towards the global south

- India, with its enormous population and enormous economic capabilities, is working to **unite the nations of the Global South** into a powerful front so that an action-oriented approach can be adopted for the countries of the global south.
- India has a lot to offer to the world, especially to the countries of the global south.
- In addition, to **India's Vaccine Maitri**, which provided medicines and vaccines to over 100 countries during the pandemic, the world has seen how the nation played a significant role in evacuating citizens from Afghanistan and Ukraine during the times of hostilities in those countries.
- **India's digital public assets** like UPI, RuPay, and India stack, which are supporting such a large portion of the Indian population, can be a powerful instrument for the digital transformation of other developing and emerging countries.

### What are the issues involved?

- The twin crises produced by the **Covid-19 pandemic** and the **Russian war in Ukraine** have had a **devastating and disproportionate impact on the Global South**.
- **Multilateralism is now in dire straits** thanks to the growing military tensions among the great powers — between Russia and China on one side and the US, Europe, and Japan on the other.
- **Major power conflict** has been reinforced by the breakdown of the world trading rules and the weaponization of global finance.
- **India's own past experience** with the Non-Aligned Movement and the Group-77 developing nations points to the real difficulty of uniting the Global South in pursuit of common goals.

### Way forward and Conclusion

- The world is fully aware of the untapped potential that exists in the growing economies of the Global South.
- The countries of the Global South should unite and change the unequal "global political and financial governance" structures,



- the world should respond to the priorities of the Global South, recognise the principle of “common but differentiated responsibilities for global challenges, respect sovereignty of all nations, rule of law and reform international institutions like the United Nations.
- India certainly needs to contribute in more significant ways to modernising and democratising the global order.
- If the Global South and India worked together, they could make significant advancements in the fight against terrorism, maritime policy, and other fields.
- India looks forward to simple and sustainable solutions from all over the Global South for the betterment of the people.
- The Global South does not have adequate voice in the “eight decades old model of global governance” and it should shape the “emerging order”.
  - As India begins its G-20 Presidency this year, it is natural, our aim is to amplify the voice of the Global South.

## THE RULES OF DETACHMENT

### Context

- The recent debate in the US on keeping the armed forces apolitical has resonance in India. Some recent decisions of the government like deviating from the “seniority-cum-merit” principle for promotion from the pool of C-in-Cs to the post of chief risk exposing the forces to political partisanship. The events of January 6, 2021, in Washington were the first occasion in the USA, when an orderly post-election transfer of political power faced a serious threat.

### Chief of Defence Staff (CDS):

- CDS acts as the **permanent Chairman** of the Chiefs of Staff Committee which will also have **three service chiefs as members**.
- **Function:** foster greater operational synergy between the three service branches of the Indian military and keep inter-service frictions to a minimum.
- **Head: Department of Military Affairs (DMA)** in the Ministry of Defence.
- **Single-point military adviser** to the defence minister on matters involving all three services
- **Service chiefs** will be obliged to confine their counsel to issues pertaining to their respective services.
- **CDS is vested with the authority:**
  - Prioritizing inter-service procurement decisions as Permanent Chairman-Chiefs of Staff Committee.
  - Provide directives to the three chiefs.
- **CDS is first among equals:** He enjoys the rank of Secretary within the DoD (Department of Defence) and his powers will be confined to only the revenue budget.
- He will perform an advisory role in the Nuclear Command Authority (NCA).

### Military control in US:

- **American ethos does not require the military to remain “apolitical”,** but demands a commitment to being “non-partisan” in their professional conduct.
- **Regardless of personal political inclinations:** military officers, while upholding the constitution, must give the elected civilian leadership their best professional advice and execute their lawful orders.

### Threat:

- **The US President:**
  - **Commander-in-chief (C-in-C)** and approving authority for general-rank promotions
  - **He could manipulate the process** to fill senior military leadership positions with party/personal loyalists.

### Suggested rules and best practices of civil-military relations:

- **Urgent need to counter forces** that threaten the military's nonpartisan ethos
- **Veterans and the media** to call out offenders who violate norms of non-partisanship.

#### Military control in India:

- **Active-duty military personnel** are prohibited from engaging in any kind of political activity by Acts of Parliament and service rules.
- **Conduct is circumscribed** by the solemn oath of allegiance to the Constitution that each serviceman swears on recruitment/commissioning.
- **India's armed forces:** preserve with the "seniority-cum-merit" principle for promotion from the pool of C-in-Cs to the post of chief.
  - **Promoting the "senior-most of equals"** obviated the possibility of political interference or nepotism in military promotions.

#### Risks of politicization:

- **A selectee who considers himself beholden or indebted** to the political establishment, for his out-of-turn promotion, could become a political "echo chamber."
- **Latest rules framed for selection of the Chief of Defence Staff (CDS).** Apart from serving and retired chiefs, to serving and retired officers of 3-star (Lt. Gen/equivalent) rank which makes room for political interference.

#### Way Forward

- **In most of the countries:** CDS, as the highest-ranking military officer who presides over the chiefs of staff committee, is chosen from amongst the serving chiefs.
- **If the government wanted to enlarge its choices,** it could have included recently retired chiefs in the pool.
  - But the age limit of 62 years (at which chiefs retire), has eliminated this option. At the same time
- **Placing serving/retired 3-star officers** (some who possibly missed promotion to C-in-C rank) in the same candidate-pool as serving chiefs.
  - It not only ignores the inherent merit and vast experience — military as well as politico-strategic — of the chiefs, but also casts into doubt the credibility of our promotion system.
- **With a mixed bag of serving and retired officers** to choose from, and no methodology available for assessment of professional competence, selection will have to be based on spoken reputation, political loyalty and personal preference.
  - Such subjective and problematic criteria are an invitation to arbitrariness and politicization.

### TIME TO STREAMLINE THE PROVIDENT FUND PENSION SCHEME

#### Context

- **70 lakh pensioners** are still waiting for higher pension under the Employees' Pension Scheme (EPS), 1995. **The Supreme Court** reiterated, as a matter of principle, its approval of the idea of higher pension.

#### Elderly Population:

- The National Elderly Policy defines people in the 60+ age group as elderly.
- According to the Population Census 2011, there are nearly *104 million elderly persons in India.*

#### Problems associated with old age:

- **Social:** The traditional values and institutions are in the process of erosion and adaptation.
- **Financial:** Retirement and dependence of elderly on their child for basic necessity.
- **Health:**
  - Multiple disabilities among the elders in old age.
  - Among persons aged 60 and above, *30% to 50%* (depending on gender and age group) had symptoms that make them likely to be

### Employees' Pension Scheme (EPS):

- It is a social security scheme provided by the **Employees' Provident Fund Organisation (EPFO)**.
- The scheme was first launched in **1995**.
- It makes provisions for pensions for the employees in the organized sector **after the retirement at the age of 58 years**.
- Employees who are **members of EPF** automatically become members of EPS.
- Both **employer** and **employee** contribute **12%** of employee's monthly salary (basic wages plus dearness allowance) to the Employees' Provident Fund (EPF) scheme.
- **EPF scheme is mandatory** for employees who draw a **basic wage of Rs. 15,000 per month**.
- Of the employer's share of **12 %**, **8.33(eight point three three)%** is diverted towards the **EPS**.
- **Central Govt. also contributes 1.16(one point one six)%** of employees' monthly salary.

### What is the current Issue?

- **Circular by Employees' Provident Fund Organisation (EPFO)**: The circular covers only a segment of pensioners-subject to certain conditions.

### Background:

- **In 2005**: Section of **Himachal Pradesh Tourism Development Corporation staff demanded** higher pension.
- **The employer had made the 12% mandatory contributions** on their actual pay, which exceeded the statutory ceiling
- **entitled to the benefit of the deposit of 8.33(eight point three three)%** of their actual salary in the Pension Fund.
- **Employees along with their employer** did not exercise their option within the cut-off date.
- **In 2016**: Court rejected the EPFO's notion of a cutoff date.
  - It held that the cut-off date, as in the EPS rules, was meant to calculate the pensionable salary only.

### Conditions imposed by circular of EPFO:

- **Payment of contributions** on higher or actual wages
- **Exercise of joint option** while in service
- **Refusal by the EPFO** to allow higher pension.

### Reason for reluctance by PF authorities:

- **Apprehension** over the sustainability of the pension fund
- **Those receiving lower pension** have to cross-subsidise pension payouts for those getting or likely to get a higher pension.
- **Factors such as:**
  - **Rising actuarial shortfall, lower rate of returns and increasing longevity of pensioners** may lead to the situation of pension payouts outstripping receipts.
  - **According to the EPFO**: It will go against social security.

### Initiatives by government for elderly:

- PM Vaya Vandana Yojana
- Indira Gandhi National Old Age Pension Scheme
- Rashtriya Vayoshri Yojana
- Vayoshreshtha Samman
- Varishth Pension Bima Yojana
- Integrated Programmes for older persons

### Way Forward



- **Much of the confusion among pensioners** could have been avoided had they been proactive in sharing information or explaining the position to those concerned.
- **On the policy front:** The **Government** and the **EPFO** should increase the minimum monthly pension of **₹3,000** against the existing **₹1,000**.
  - It will address the grievances of pensioners who were in the lower wage bracket.
- **EPFO can give a one-time opportunity** to all those in the higher wage group who retired in Dec 2004 without exercising the option.
- **Government** should substantially increase its financial support.
- **Code on Social Security, 2020:** It can have a scheme for those youngsters who have got jobs after September 2014 who have been left out of the EPS on account of their higher wages.

## THE ILLOGICAL REJECTION OF THE IDEA OF SOUTH ASIA

### Context:

- **A World Bank study** on air pollution concludes that about two million people die prematurely in South Asia each year. Particulate measure concentrations put nine South Asian cities among the world's top 10 worst affected by air pollution.

### World Bank study on air pollution-Striving for Clean Air: Air Pollution and Public Health in South Asia:

- **Nine out of the world's 10 cities** with the worst air pollution are in South Asia.
- **Concentrations of fine particulate matter (PM 2.5)** in region's most densely populated and poor areas are up to 20 times higher than what WHO considers healthy ( $5 \mu\text{g}/\text{m}^3$ ).
- **Causes:** An estimated 2 million premature deaths in the region each year and incurs significant economic costs.

### What were the objectives of report:

- **This report identifies six** major airsheds in the region.
  - West/Central Indo-Gangetic Plain: Punjab (Pakistan), Punjab (India), Haryana, part of Rajasthan, Chandigarh, Delhi, Uttar Pradesh
  - Central/Eastern Indo-Gangetic Plain: Bihar, West Bengal, Jharkhand, Bangladesh
  - Middle India: Odisha/Chhattisgarh
  - Middle India: Eastern Gujarat/Western Maharashtra
  - Northern/Central Indus River Plain: Pakistan, part of Afghanistan
  - Southern Indus Plain and further west: South Pakistan, Western Afghanistan extending into Eastern Iran.
- **It analyzes four scenarios** to reduce air pollution with varying degrees of policy implementation and cooperation among countries:
  - Ad-hoc selection of measures
  - Maximum technically feasible emissions reductions
  - Compliance with WHO Interim Target 1 everywhere in South Asia
  - Toward the next lower WHO Interim Target.
- **It offers a roadmap** for airshed-wide air quality management.

### PM2.5:

- It refers to particles that have a diameter less than 5 micrometers and remain suspended for longer.
- These particles are formed as a result of burning fuel and chemical reactions that take place in the atmosphere.
- Natural processes such as forest fires also contribute to PM2.5 in the air.
- They are the primary reason for the occurrence of smog.

### Analysis of PM2.5:

- Bhutan: Average PM 2.5 concentration from 2018-2020 was three times WHO prescribed limits.

- Maldives Meteorological Service warned that visibility had been reduced by 60% due to smog.

#### Suggestions in report:

- **Asking India, Pakistan, Bangladesh** and all other South Asian countries to begin talks between scientists, officials and eventually ministers and leaders
- Create a mechanism for the cooperative management of the six air sheds the region is made up of.

#### Issues:

- **South Asian Association for Regional Cooperation (SAARC) nations are members of the Group of 77 Developing countries:** under the chairpersonship of Pakistan last year already negotiated a breakthrough at the COP27 Climate Change summit at Sharm el-Sheikh

#### Issues in South Asia:

- **India and Pakistan:** Continue to point to past disputes as the reason to:
  - Hold up South Asian summits such as SAARC
  - block trade
  - connectivity
  - other avenues for cooperation

#### Why should India and Pakistan cooperate?

- **Geopolitical challenge** is pushing the region to work more closely together like:
  - Climate change
  - Ukraine war
  - Costs of procuring energy, grain, fertilizers all soaring
  - **Persistent global economic** recession
  - **More variants** of the COVID-19 virus
  - **Terrorism:** especially arising from the Taliban takeover of Afghanistan.

#### Solutions:

- **Vasudhaiva Kutumbakam” and “diplomacy and dialogue:** Can be used to resolve the conflict sound hollow when compared to India and Pakistan’s act of holding up the SAARC Summit
- India can virtually hold a special meeting for the “Global South”, with the impact of the Ukraine war on the agenda
- **Convene or participate in a regional dialogue to discuss the issue,** or include the regional agenda in its G-20 narrative.
- Opportunities for regional cooperation in health security are being missed.
  - India has worked bilaterally with most of its neighbors to provide vaccines and COVID-19 medicines.
- Unilaterally extend copyright waivers on medical products within South Asia of the sort India has proposed.
- **Terrorism:** the contradictions between can be discussed at broader multilaterals, but not in the region, are manifold:

#### Some previous steps:

- **In 2022, India and Pakistan:** exchanged teams as part of the SCO Regional Anti-Terrorist Structure (RATS)
- India was part of the Financial Action Task Force grouping that let Pakistan off its terror financing “greylist”.

#### South Asian Association for Regional Cooperation(SAARC):

- The SAARC was established with the signing of the SAARC Charter in Dhaka on 8 December 1985.
- **Founding countries**—Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.
- Afghanistan joined SAARC at the 13th annual summit in 2005.

- The Headquarters and Secretariat of the Association are at Kathmandu, Nepal.
- Cooperation within the framework of the SAARC is based on:
  - Respect for the principles of sovereign equality
  - Territorial integrity
  - Political independence
  - Non-interference in the internal affairs of other States
  - Mutual benefit.
- **Areas of Cooperation:**
  1. Human Resource Development and Tourism
  2. Agriculture and Rural Development
  3. Environment, Natural Disasters and Biotechnology
  4. Economic, Trade and Finance
  5. Social Affairs
  6. Information and Poverty Alleviation
  7. Energy, Transport, Science and Technology
  8. Education, Security and Culture and Others

### Way Forward

- **Including Countries of the Association of Southeast Asian Nations, European alpine nations and China:** the solution to the problems of air pollution lies in a “whole of region” approach, and is not one that any one country in the “air sheds” can resolve on its own.
- The failure to build a regional defense to the issues arising from Russia’s invasion of Ukraine and from NATO sanctions, trade ban and weapons stockpiling
  - South Asia has missed the chance to position itself as an energy “cartel” commanding a better price for the region.
- Crude dependencies, Bangladesh, Pakistan and India buy more than 50% of their liquefied natural gas through the spot market.
  - It indicates how vulnerable they are to global energy trends.
- In the process of rank lack of logical behavior: Any chance of coordinating or cooperating against the developing chaos in Afghanistan, and countering extra-regional terror threats are also lost for South Asia.
- Delink PM’s presence from the SAARC summit(next in Pakistan): instead have the President or the Vice-President to represent India.
  - A quid pro quo could even see Pakistan send a replacement for its Prime Minister to the SCO Heads of State summit due to be held in India in June.
- It is necessary for the future to delink South Asian cooperation from the summit itself, and allow other parts of the agenda ( health, energy, women’s rights, security and terrorism) to be held even if a leadership event is not.
- Reviving SAARC by infusing political energy into it and updating its dated Charter will be an ideal way forward.

## INDIA AND THE NEW EURASIA

### Context:

Japan’s Prime Minister Fumio Kishida is looking beyond his country’s alliance with the U.S. to deter China, bolstering security ties with democracies from Australia to Europe.

### Eurasia

- It is the largest continental area comprising more than 90 countries in Europe and Asia.
- Covering more than 30% of the world’s continental landmass.
- Many used it as a neutral term to describe the vast landmass that connected Europe and Asia.

Despite continental continuity, Europe and Asia emerged as separate political and cultural spheres over the millennia.



### Russia's Approach

- Russia saw itself as both a **European and Asian power** but had trouble becoming a part of either.
- It developed “**Eurasia**” and “**Greater Eurasia**” as new geopolitical constructs.
- The occupation of Crimea in 2014 and the invasion of Ukraine are a product of what Putin sees as his historic mission of reuniting the “**Ruskiy Mir**” or the Russian world. He was determined to pursue it despite the massive costs associated with the strategy.

### Various Developments Linked to New Eurasia

- **Japan:** It is determined to build strong military partnerships with Europe.
  - Japan's Prime Minister Fumio Kishida's message was simple: The security of Europe and the Indo-Pacific is indivisible.
  - Japan will also build a large missile arsenal to deter China (and North Korea, whose missile capabilities have grown).
- **US:** At the instance of the US, the NATO summit in Madrid in June invited key Asian partners to participate.
  - The prime ministers of Australia, Japan and New Zealand as well as the president of South Korea joined the summit.
  - This is the first time that Asian leaders joined NATO deliberations.
- NATO's engagement with Indo-Pacific issues and East Asia's engagement with European security will continue to be new features of Eurasian geopolitics.
  - In its National Security Strategy released in 2022, the Biden Administration articulated the desire to see its allies and partners in Europe and Asia collaborate more with each other.
    - It is eager to encourage its partners, including India, to build their capabilities and strengthen regional balances of power in Europe and Asia.
- **South Korea** is also joining the party by raising its profile in Europe.
  - It is selling major weapons platforms in Poland.
- **Australia**, which has joined the US and UK in the AUKUS arrangement, is equally eager to bring Europe into the Indo-Pacific.
- **China -Russia Cooperation:** Before Japan and South Korea turned to Europe, it was China and Russia who altered the geopolitical dynamic in Eurasia.
  - Days before he ordered his armies into Ukraine, Putin travelled to Beijing in February 2022 to sign an agreement declaring an alliance “without limits” and no “forbidden areas”.
  - Together, Putin and Xi unveiled a Eurasian alliance that they might have hoped would deliver the long-awaited coup de grace to the global hegemony of the West.

### Implications for India

- For India, the rise of Eurasia is making it harder to ride on two boats at the same time.
- Until now, India could easily hunt with the maritime coalition — the Quad — in the Indo-Pacific and run at the same time with the continental coalitions led by Russia and China.
  - This was possible so long as the maritime and continental powers were not at each other's throats.
- But the **conflict between the US, Europe, and Japan** on the one hand and China and Russia on the other is now acute and shows no signs of immediate amelioration.
- **On the downside**, then, India's mounting security challenges from China on the Himalayan frontier and the tightening embrace between Moscow and Beijing will mean the shadow over India's continental strategy will become darker in the days ahead.
- **On the upside**, the possibilities for strengthening India's strategic capabilities in partnership with the US and Europe as well as Japan, South Korea and Australia have never been stronger.

### Conclusion

The new dynamic presents challenges as well as opportunities for India and it is up to Delhi now to seize the emerging possibilities.

- India needs to maintain a balance between the USA and China and to a greater extent between the Indo-Pacific region and Eurasia.
- India can act as a bridge between the Indo Pacific region and Eurasia power block. For this India needs to maintain linkage with China and especially with Russia.

## INDIA-MALDIVES RELATION: MALDIVES POLLS, INDIA'S CONCERNS

### Context:

- The External Affairs Minister (EAM) of India visited Maldives when the presidential election in Maldives is around the corner.
- **Background:**
- The incumbent president's (Solih) announcement to run for a second term, has been opposed within his party by former president and leader of the Maldivian Democratic Party (MDP) Mohamed Nasheed.
- Though Solih's foreign policy expressly roots for "**India First**", he is also careful about not alienating China.
- Yameen had a **pro-China tilt** and has run an anti-India campaign ('India Out' campaign recently) alleging that the MDP government has sold out to India and permitted Indian troops to be based on Maldivian soil.

### What happened during the EAM's visit?

- Inaugurated an international airport developed by India (\$ 136.6-million) at Hanimadhoo in Haaa Dhaalu atoll.
  - This is India's second largest infrastructure project after the (\$500 million) **Greater Male Connectivity project**, which aims to connect the Maldives capital to three neighbouring highlands.
  - Both are prestige projects for Delhi that **compete in scale with the Chinese-built** Male-Hulumale-Hulhule bridge and the Hulumale airport.
- Inaugurated an **India-funded community centre** In the Foakaidhoo island in the nearby Shaviyani atoll.
- **Handed over two sea ambulances** to the Maldives Defence Ministry.
- In the Manadhoo island of Noonu atoll, the two sides signed three MoUs, including –
  - A proposed collaboration between Cochin University and the Maldives National University, and
  - A \$100 million grant for "high impact community development" projects.
- **The focus of the discussion was on development cooperation, capacity building and people-to-people ties.**

### Significance of Maldives for India:

- A country crucial to **India's interests in the Indian Ocean.**
- In the past five years, Delhi's **Neighbourhood First** and **SAGAR(Security and Growth for All in the Region) policies** have found expression in the improvement of ties.
- Maldives is part of the **India-driven Colombo Security Conclave.**

### India's message to Maldives:

- India is a **committed partner** in the Maldives's journey of progress and transformation.
- The "**new disruptions**" in the current **geopolitics** has made the collaboration even more important.

## A G20 PRESIDENCY TO AMPLIFY SOUTH ASIA'S VOICE

### Context:

- India has taken over the **G20 presidency**. The motto "**Vasudhaiva Kutumbakam**", or "**One Earth, One Family, One Future**", underscores how interconnected our world is.

### G20:

- **The G20 is an informal group:19 countries** and the **European Union**, with representatives of the **International Monetary Fund** and the **World Bank**.
- **The G20 Presidency rotates annually:** according to a system that ensures a regional balance over time.
- **For the selection of the presidency: 19 countries** are divided into 5 groups, each having no more than 4 countries.
  - The presidency rotates between each group.

- Every year the G20 selects a country from another group to be president.
  - **India is in Group 2 which also has Russia, South Africa, and Turkey.**
- The G20 does not have a permanent secretariat or Headquarters.

#### Current Issues:

- The global food, energy, and financial crises
- Climatic crisis
- **Developing countries:** are facing an extended, multi-faceted shock of great magnitude.

#### Priorities identified by India:

- **Green development**, climate finance and LiFE (lifestyle for environment)
- **Accelerated, inclusive** and resilient growth
- **Accelerating progress** on Sustainable Development Goals (SDGs)
- **Technological transformation** and digital public infrastructure
- Multilateral reforms
- Women-led development.

#### Problems that need group action:

- **Problems that South Asian countries face are global** in nature, transcend national borders, and necessitate group effort.
- **In August 2022, inflation in Sri Lanka** reached an all-time high
- **Damage caused by floods** and economic losses in Pakistan amount to more than \$30 billion.
- **Global fossil fuel prices have increased:** The Government of Bangladesh hiked fuel prices by more than 50% that triggered inflation of **5(seven point five)%**.

#### Steps India need to take:

- **India needs to promote collective action** at the G20 that results in economic stability and peace in the region.
- **India is South Asia's largest country** with the largest economy and significant global clout
  - India is well poised to represent the subcontinent at these international fora.
- **India can draw attention to issues that are significant for South Asia** and the entire developing world, ensuring greater momentum for those nations not represented in the G20.

#### Some of the key challenges facing South Asia and the developing world:

- Post-pandemic recovery
- Surge in commodity prices following inflationary pressures
- Inclement weather induced by climate change.

#### Steps taken by South Asian countries:

- **Liquefied natural gas (LNG)** used to generate **70%** of the energy needs of Bangladesh, while coal used to generate roughly **70% of the** electricity needed in India.
- **Green energy transition** is one of the top priorities for this region.
- **Improving health infrastructure** is quite important for South Asia and the G20 agenda.

#### Way Forward

- **Rising debt burdens of South Asian economies** represent a potential crisis that requires urgent attention.
  - India has an opportunity to effectively voice the socio-economic aspirations of South Asia's.
- **The discussion of global cooperation** needs to go beyond technology transfers and financial aid to cover losses and damages brought on by climate change.



- **For South Asia:** It is important that multilateral organizations and development finance institutes supporting economic development and good governance are reformed as these countries are major stakeholders for these global institutes.
- **India needs to prioritize all issues of South Asia** not only to make the G20 an effective platform but also to be the voice of billions in the region and beyond.
- **Being the only G20 member from South Asia**, India has added responsibilities since many non-G20 nations (particularly those in the global South) look upon India to represent their interests at the G20.
- **India should use its G20 chair to reform international governance procedures** and ensure fair negotiations.
- **The South Asian giant has an opportunity to initiate deliberations, discussions, and debates**, resulting in policies that provide pragmatic solutions to pressing concerns affecting its immediate neighborhood and beyond.

## INDIA SRI LANKA RELATIONS

### Context:

- India sent written **financing assurances to the International Monetary Fund (IMF)**, becoming the **first bilateral creditor of the island nation** to officially support its crucial debt restructure programme after last year's economic meltdown.
- A bilateral agreement between India and Sri Lanka on raising the limit of the **High Impact Community Development Project (HICDP)** was also signed during the India's External Affairs Minister's Visit.

### Significance of India's Financing Assurance

- The **International Monetary Fund's provisional USD 2.9 billion package** to Sri Lanka will be cleared only after **Sri Lanka's official creditors— China, Japan and India —** have provided **adequate financing assurances**.
- The decision of financing assurance was also a reassertion of **India's belief in the principle of "neighborhood first"**, and not leaving a partner to fend for themselves.

### How are India's Relations with Sri Lanka?

- **About:**
  - **India and Sri Lanka are two South Asian nations** situated in the Indian Ocean region. Geographically, Sri Lanka is located just off the southern coast of India, separated by the **Palk Strait**.
    - This proximity has played a significant role in shaping the relationship between the two countries.
  - The **Indian Ocean is a strategically important waterway** for trade and military operations, and **Sri Lanka's location at the crossroads** of major shipping lanes makes it a critical point of control for India.
- **Relations:**
  - **Historical Ties:** India and Sri Lanka have a long history of **cultural, religious, and trade ties** dating back to ancient times.
    - There are strong **cultural ties between the two countries, with many Sri Lankans tracing their heritage to India**. **Buddhism**, which originated in India, is also an important religion in Sri Lanka.
  - **Economic ties:** India is **Sri Lanka's third largest export destination**, after the US and UK. More than **60% of Sri Lanka's exports enjoy the benefits of the India-Sri Lanka Free Trade Agreement**. India is also a major investor in Sri Lanka.
    - **Foreign Direct Investment (FDI)** from India amounted to around **USD 1.7 billion** over the years from 2005 to 2019.
  - **Defence:** India and Sri Lanka conduct joint Military (**Mitra Shakti**) and Naval exercise (**SLINEX**).
- **Issues in India-Sri Lanka Relations:**
  - **Killing of Fishermen:** Killing of Indian fishermen by the **Sri Lankan Navy is a lingering issue** between these two nations.
    - In 2019 and 2020, a total of **284 Indian fishermen were arrested and a total of 53 Indian boats were confiscated by the Sri Lankan authorities**.

- **Influence of China: China's rapidly growing economic footprint** (and political clout as a corollary) in Sri Lanka is straining India-Sri Lanka relations.
- China is already the largest investor in Sri Lanka, accounting for 23.6% of the total **Foreign Direct Investment (FDI)** during 2010-2019 as against 10.4% from India.
  - **13<sup>th</sup> Amendment of the Sri Lankan Constitution:** It envisages devolution of necessary powers to the provincial councils to address the just demand of the Tamil people for **equality, justice, peace, and respect within a united Sri Lanka**.
    - India supports its implementation but the Sri Lankan government is yet to **"fully implement" the 13<sup>th</sup> Amendment**.

### Conclusion

- India, which has followed the **"Neighbourhood First policy"** to cement bonds with its neighbours, can **walk that extra mile to help Sri Lanka** out of the current crisis and help Sri Lanka towards realising its potential, to reap the **rewards of a stable, friendly neighbourhood**.

## CHINA'S DAM DIPLOMACY

### Context:

- China is constructing a new dam on the **Mabja Zangbo river** in Tibet, close to the **tri-junction** which is a matter of concern for both India and Nepal.
- The new dam is located around 16 km north of the tri-junction and is opposite the **Kalapani area of Uttarakhand**.
- The Mabja Zangbo river originates in Nagari county of **Tibet** and flows through Nepal into the **Ghaghara River** before joining the Ganga in India.

### About

- China's upstream actions like dams (on Brahmaputra, Indus, tributaries of the Ganga), diversion of water, hydropolitics, and power asymmetry poses a security threat to India and water scarcity downstream.
- There is **no legally binding international treaty** on water sharing between India and China.
- Under CPEC, China plans to build two mega-dams on the Indus, named **Bunji Dam and Bhasha Dam**.
- In 2021, China announced that it would construct a massive dam on the lower reaches of **Yarlung Zangbo** (also known as Brahmaputra) to generate up to 70 GW of power, three times that of the country's **Three Gorges dam**, which is the world's largest hydropower plant in terms of installed capacity.

### Hydropolitics

- A **water-hegemon**, which aims to consolidate control, uses different strategies, tactics, and power resources to achieve this control. When consolidated control is achieved, the water hegemony will have power over the whole basin.
- **Riparian relations** are shaped and developed by varied interpretations of the use of river water. **Upper riparian nations** essentially base their claims on **'absolute territorial sovereignty'** that is, the right to use rivers unilaterally, regardless of lower riparian concerns.
- The **lower riparian**, on the other hand, claim the **'absolute territorial integrity'** of rivers, stressing that upper riparian actions should not affect the water flowing downstream.

### Impact of Building Dams on India

- **Used as a tool in Hydropolitics:** China is a critical player in the hydro-politics of the region. Its hydrological position is one of **complete upper riparian supremacy** giving it enormous latitude in shaping larger political equations with its riparian neighbours.
  - India is an upper, middle, and lower riparian. India's **middle riparian position** increases its dependency (water insecurity) on the headwaters of the rivers such as the **Indus, Sutlej, and Brahmaputra** which originate in the Tibetan plateau.
  - China wants to maintain continuous pressure on India be it all along the Himalayan range or the Indian Ocean region through building dams alongside border areas.

- **India and its Neighbourhood:** China was one of the three countries that did not approve of the 1997 UN Convention on the **Law of the Non-Navigational Uses of International Waterways**.
  - China has built **eleven mega-dams on the Mekong River**, causing water levels there to fluctuate widely without prior notice in Myanmar, Laos, Thailand, Cambodia, and Vietnam.
  - **Impact on earlier signed Treaty:** Treaties have been signed to provide definite amount of water to lower riparian states like the **1960 Indus Water Treaty** with Pakistan and the **1996 Ganga Treaty with Bangladesh**.
- **Military threat to India from Border Infrastructure:** China's rapid build-up of infrastructure along the Line of Actual Control (LAC) with India is alarming and adds to **overall destabilising and corrosive behaviour** along the entire India-China border.
  - The satellite images of the dam on Mabja Zangbo river shows the formation of an **embankment type dam** with a reservoir leading to a possibility of military establishment by China near the tri-junction already witnessed from Yarlung Zangbo dam.
  - From the multiple intrusions into Indian territory in eastern Ladakh, China has assiduously built and consolidated its military positions and border infrastructure along LAC as well upgraded its air bases facing India. **E.g., China** construction of a bridge across Pangong Tso in Khurnak Fort Area.
- **Impact on people lives Downstream:** China projects alongside Brahmaputra will impact lower riparian states local economy and ecology due to future plans of water diversion and dam projects.
  - China's construction of **hydroelectricity dams** in ecologically and seismically active areas shows reassertion of its aggressive '**supply-side hydraulic**' approach of increasing storage capacity by building dams and reservoirs.
  - These steps can impact **food and water security** needs of people living in low riparian regions as well increase **disaster risk**.
- **Water Resources of North-East:** Even running of the river hydroelectric dams can reduce water flow downstream, especially during the dry season.
  - India is also worried about the release of water during the monsoons, when north-eastern states such as Assam experience floods.
  - Several species of flora and fauna are endemic to the North-East part of India and some of them are critically endangered. The ecosystem in the Himalayan region is already on the decline.
- **Seismological Impact:** The Himalayan region is vulnerable to earthquakes and other seismic activities. The sheer size of the infrastructure projects undertaken there poses a significant threat to the populations living downstream.
  - Chins building hydrological projects along geographical fault lines. E.g., Projects on Yarlung Zangbo river are along the collision boundary of Indian plate and Eurasian plate.
  - The glaciers have been retreating due to climate change. Deforestation, soil erosion and landslides are some of the other issues.
- **Water as a Weapon during Standoff:** Being an upstream area, China has a clear advantage in building dams and other infrastructure to store or divert the flow of the river system.
  - There is the potential to significantly change the flow rate during times of stando? between the countries.
  - During the 2017 Doklam border stando? between India and China, China stopped communication of water flow levels from its dams.

### Way Forward

- By terming water resources in Tibet as a '**commons**', India can draw international attention. China should be pressurized to reconsider signing of **1996 UN Convention on Non- Navigation Use of Water** which requires watercourse states to cooperate on the equitable and reasonable use and management of international watercourses.
- India needs to **strengthen agreements** with China that require the latter to share hydrological data of the river during monsoon season between May and October to alert downstream areas in the event of floods.



- India to articulate its middle riparian position, first to change the perception in the neighbourhood that India is a 'water hegemon'.
- India to draw China into the **South Asian water equation** through a **multi-lateral basin approach**, thereby sensitising China to downstream concerns and upstream responsibilities.
- Water Treaty on lines of Indus and Ganga Treaty need to be devised with China for rivers originating from Tibet region.
- India should initiate a **lower riparian coalition**, stretching from the Ganga Brahmaputra Meghna basin to the Mekong, in order to draw China into a water dialogue.
- Tibet has an essential influence over Asia, providing sustenance to some of the world's most productive agricultural zones, so it is the collective responsibility of all riparian states to preserve the ecology of this region.

## INDIA-MALDIVES RELATIONSHIP

### Context:

- The External Affairs Minister of India recently visited Maldives. In a bid to strengthen the India-Maldives Relationship, the two countries signed pacts on several development projects. The EAM's visit comes at a crucial time. Presidential elections are set to be held in Maldives in September 2023. The elections are important for India as well, because the trajectory of India-Maldives relationship will depend on the outcome of the elections. Domestic politics of Maldives have come about to be the most vital aspect of the India-Maldives Relationship. The increasing Chinese influence in Maldives' domestic politics poses a new challenge to Indian diplomacy.

### What is the significance of Maldives to India?

- **Geographical Location:** Maldives is geographically located in a position that makes it resemble a 'toll gate' between the chokepoints of the western Indian Ocean (Gulf of Aden and the Strait of Hormuz), and the eastern Indian Ocean (Strait of Malacca).
- **Economic Significance:** It is strategically located at the crossroads of several **important trade routes** that run through the Indian Ocean. Through this region passes more than 97% of India's total international trade by volume and 75% by value.
- **Strategic Significance:** The significance of the Maldives has steadily increased since **China's naval expansion into the Indian Ocean**. Maldives is now at the centre of geopolitical affairs on a global scale. The Republic of Maldives is a party to the South Asian Association for Regional Cooperation (SAARC) and the **South Asia Subregional Economic Cooperation (SASEC)**.
- **Security:** Under the Presidency of Abdullah Yameen, there was a rapid **increase in radicalization**. It was frequently said that the archipelago was responsible for one of the highest numbers of foreign fighters in Syria in terms of the number of fighters per capita. Yameen's Government (2013-18) also had a very prominent pro-China tilt which was detrimental to India's interests in Maldives and the Indian Ocean Region.
- **Indian Diaspora:** There is a sizeable population of people descended from India living in Maldives. There are numerous Indians employed in the Maldives' education and medical care systems, as well as in the tourism and hospitality sector.

### How has the India-Maldives Relationship evolved?

- India and Maldives have close cultural relationship since ancient times. The name Maldives is believed to be of Sanskrit origin (*Mala* (garland) + *Dweep* (Island)). There is reference of Maldives in ancient texts like *Mahavamsa*. The islands are believed to have been inhabited as early as 5th century BC by settlers from Sri Lanka and Southern India. The origins of *Dhivehi* (the Maldivian language) traces back to Sanskrit and Pali, which are also the roots of many southern Indian languages. There were close trade relationships between India and Maldives during ancient and medieval times.
- After Maldives gained independence from British rule in 1966, both countries moved quickly to establish diplomatic relations. India was one of the earliest countries to acknowledge Maldives' status as an

independent nation. Since then, India and the Maldives have developed close military, economic, and cultural relationship.

- India's relationship with the Maldives has largely remained free of any politically contentious issues. The one-time claim to Minicoy Island by Maldives was resolved by the **Maritime Boundary Treaty of 1976** between the two countries, whereby **Maldives has recognized Minicoy as an integral part of India**.
- India and Maldives signed comprehensive trade agreement in 1981.
- In 1988, there was an **attempt to overthrow the Government of Maldives**. The coup attempt was made by local Maldivians assisted by mercenaries from a Tamil secessionist group from Sri Lanka, the People's Liberation Organisation of Tamil Eelam. The Indian Armed Forces moved swiftly, launched **Operation Cactus**. The swift action by the Indian Forces coupled with accurate intelligence prevented the coup from succeeding.
- India was the first to **assist Maldives after the 2004 Tsunami** as well as the **water crisis in Malé in December 2014**. India's timely interventions to support Maldives at the time of crises has laid the foundation of a strong India-Maldives Relationship. There has been a notable expansion in the level of cooperation between India and Maldives since the 1990s. In Malé, the capital of the Maldives, India built the Indira Gandhi Memorial Hospital. Additionally, India increased the number of scholarships available to Maldivian students and expanded both telecommunications and air links.
- During the COVID-19 crisis, India offered Maldives assistance in the form of vaccines, financial, material, and logistical support etc.

#### **What are the areas of cooperation in India-Maldives Relationship?**

- Both India's policy of 'Neighbourhood First' and the Maldives' policy of 'India First' appear to be perfectly coordinated with one another.
- **Security Cooperation:** Maldives relies heavily on trilateral maritime security cooperation with India and Sri Lanka. The purpose of such collaboration is to counter common maritime security threats and challenges such as **illicit trafficking, piracy, and illegal and unregulated (or unreported) fishing**. India and Maldives have agreed on energizing cooperation in **maritime security, maritime domain awareness, Humanitarian Assistance and Disaster Relief (HADR)** through the implementation of underway projects and capacity building initiatives.
- **Military Cooperation:**
  - (a) India has donated Landing Assault Craft and 24 Utility Vehicles to Maldives in order to bolster maritime security;
  - (b) A grant assistance of US\$ 50 million Line of Credit facility has also been approved for carrying multiple defense projects;
  - (c) To establish new horizons in the defence ecosystem, Maldives hosted the 5th Meeting of **Colombo Security Conclave** in Male' in **March 2022** which witnessed membership expansion as well as addition of a new pillar (Humanitarian Assistance and Disaster Relief, HADR);
  - (d) A comprehensive **Action Plan for Defence** was signed in April 2016 to consolidate defence partnership. India also provides the largest number of **training opportunities for Maldivian National Defence Force (MNDF)**, meeting around 70% of their defence training requirements.
- **Economic Cooperation:**
  - (a) India and the Maldives have also signed multiple bilateral agreements in recent years, including US\$ 500 million in grants and financing to support **maritime connectivity**, a US\$ 800-million **line of credit** from the Export-Import Bank of India, and an agreement on exchanging information on the movement of commercial maritime vessels;
  - (b) From 4th in 2018, India has become Maldives' 2nd largest trading partner;
  - (c) In 2021, there was a rise of 31% in bilateral trade compared to the 2020;
  - (d) The Maldives' economy is almost entirely dependent on the tourism sector. Maldives is an important tourist destination for many Indians.
- **Infrastructure Cooperation:**

- (a) India is the partner for the ambitious **Greater Male Connectivity Project**. This is one the largest project infrastructure project in Maldives. The project aims to connect Male to Villingili, Gulhifalhu and Thilafushi islands through a **series of bridges, causeways and roads**. The project is crucial for the proposed Gulhifalhu Port, and will be a major catalyst for the Maldivian economy in the future through jobs and economic activity;
  - (b) Buyers Credit Agreement has been signed for design and construction of 61 police infrastructures across Maldives. This will contribute to improved access to policing and to ensure the safety and security of the communities in the islands;
  - (c) Indian-Maldives are carrying strategic harbour projects viz Uthuru Thila Falhu. The island has been selected for the development of a dockyard facility and a harbor for the coast guard of the Maldives National Defence Force;
  - (d) India is also undertaking **Airport Redevelopment Project** at the **Hanimaadhoo International Airport**.
- **Humanitarian Assistance:**
    - (a) In 2019, an MoU for grant assistance for High Impact Community Development Projects (HICDPs) was signed. A number of **socio-economic development projects** are planned to be implemented throughout the country under this funding;
    - (b) India provided 100,000 Covishield vaccines to Maldives in January 2021, during the peak of the pandemic;
    - (c) India has handed over the two **sea ambulances** to the Ministry of Defence of Maldives;
    - (d) The main government-affiliated hospital in the Maldives, the Indira Gandhi Memorial Hospital in the capital, was built with aid from the Government of India;
    - (e) India provided **assistance to Maldives** during recovery efforts after the **2004 Tsunami**. India also helped address the **shortage of drinking water in 2014**;
    - (f) **Water and Sanitation in 34 Islands**: The project seeks to improve water supply and sewerage facilities in 34 identified islands by installing proper water supply distribution network, ensuring protection of ground water aquifer and sustainable water source management. The project was awarded as 6 packages to 4 Indian contractors after a tendering process. Work has commenced on all islands.
  - **Education and Technology Cooperation:**
    - (a) The **National Knowledge Network** is a multi-gigabit national network for research and education. It has recently established connections with the academics and research institutions of the Maldives. The National Informatics Centre is in charge of its operation (NIC);
    - (b) Both countries have signed the **Peering Agreement**, which will now help over 1,500 Indian institutes and a host of universities and centres of learning from Singapore, Europe and the United States are now connected to Maldives;
    - (c) India has helped Maldives in establishing the **National College for Policing and Law Enforcement (NCPLE)** at Addu City which was inaugurated in March 2022;
    - (d) India has support for the development of a sports complex in Gahdhoo. Cochin University of Science and Technology and the Maldives National University are collaborating in the academic field;
    - (e) India will send 10,000 school books to be distributed in 260 schools in Maldives.

### Challenges in the India-Maldives Relationship

- **Political:**
  - (a) While the incumbent President Ibrahim Mohamed Solih has a very prominent pro-Indian approach, the political opposition under former President Abdulla Yameen is seen as **anti-India**. Abdulla Yameen had allotted lot of development projects to China during his tenure;
  - (b) Abdulla Yameen also led the '**India Out**' Campaign. He is opposed to India's military presence in Maldives.
- **Radicalisation:** A large number of Maldivian citizens had joined violent extremist organisations such as the Islamic State (IS). There has been a steady rise in recruits joining jihadi groups in Pakistan over the last decade. There is now a greater risk that terrorist organisations based in Pakistan will use the Maldives as a staging ground for attacks on India and Indian assets.



- **Chinese Influence:** China has enhanced its influence in Maldives (and in Indian Ocean). Maldives is an essential 'pearl' in China's 'String of Pearls' initiative in South Asia.
- **What can be done to enhance India-Maldives Relationship?**
- **First,** India should increase development assistance to Maldives. India should target projects that have larger impact on general population of Maldives. This will enhance India's goodwill among the people of Maldives.
- **Second,** India should also engage with political opposition of Maldives. The concerns of the opposition can be addressed through suitable discussions. India should also convey that the projects being undertaken are for the general good of the people of Maldives e.g., the US\$ 136.6-million development of the airport at Hanimadhoo includes the development of a 2.46-km runway that can accommodate large aircraft, and a terminal with an annual capacity for 1.3 million passengers. This will improve tourist inflow, which is the mainstay of economy of Maldives.
- **Third,** It should be ensured that India is not seen as interfering in the internal politics of Maldives including Presidential elections. Political interference by India will be exploited by opponents to India's detriment.
- **Fourth,** As part of India's Neighbourhood First policy, the exemplary bilateral cooperation between India and Maldives could serve as a useful template for developing our ties with other This would be in keeping with India's commitment to putting its neighbours first. The Maldives have always benefited from India's assistance and development.

### Conclusion

- Maldives is vital to India's interests due to its strategic location in the Indian Ocean. India-Maldives Relationship has a strong foundation based on India's historic assistance to Maldives during multiple crises. However, the relationship has seen new challenges in recent times, especially since China's rising influence in the Indian Ocean Region. India must give a rigorous push to ties with Maldives while being mindful of Maldives' sensitivities.

## INDIA-EGYPT RELATIONS

### Context:

- Recently, on the occasion of the **74<sup>th</sup> Republic Day**, the **President of Egypt was invited as the chief guest at the parade**, this is the first time that an Egyptian President has been accorded this honour.
- **A military contingent from Egypt also participated in the parade.**
- **Note:** An invitation to be **Chief Guest is an important honour that is very high on symbolism**. New Delhi's choice of Chief Guest every year is **dictated by a number of reasons — strategic and diplomatic, business interest, and geopolitics.**

### What is the Status of the India-Egypt Relationship?

- **History:**
  - The history of contact between India and Egypt, two of the world's oldest civilisations, **can be traced back to at least the time of Emperor Ashoka.**
    - Ashoka's edicts refer to his relations with Egypt under Ptolemy-II.
  - In modern times, **Mahatma Gandhi and the Egyptian revolutionary Saad Zaghloul shared the common goal of Independence from British colonial rule.**
    - The joint announcement of establishment of diplomatic relations at Ambassadorial level was made on 18 August 1947.
      - India and Egypt **signed a friendship treaty in 1955.** In 1961, India and Egypt along with Yugoslavia, Indonesia and Ghana **established the Non-Aligned Movement (NAM).**
  - In 2016, the **joint statement between India and Egypt** identified political-security cooperation, economic engagement and scientific collaboration, and cultural and people-people ties **as the basis of a new partnership for a new era.**
- **Recent Scenario:**
  - During this year's meeting, both India and Egypt **agreed to elevate the bilateral relationship to a "strategic partnership".**

- The strategic partnership will have **broadly four elements**: political, defence, and security; economic engagement; scientific and academic collaboration; cultural and people-to-people contacts.
- India and Egypt **signed a Memorandum of Understanding (MoU)** for three years to facilitate content exchange, capacity building, and co-productions **between Prasar Bharati and the National Media Authority of Egypt**.
  - Under the pact, **both broadcasters will exchange their programmes of different genres** like sports, news, culture, entertainment on bilateral basis.
- **A Partner within the OIC:**
- India **views Egypt as a moderate Islamic voice among Muslim-majority countries, and as a partner within the Organization for Islamic Cooperation (OIC)**.  
**Terrorism & Defence:**
  - During this Republic Day meeting, India and Egypt **expressed concerns about the spread of terrorism** around the world as it is the most serious security threat to humanity. Consequently, **the two countries agreed that concerted action is necessary to end cross-border terrorism**.
  - The two countries are **looking at deepening defence and security cooperation**. Moreover, the two **Air Forces collaborated on the development of fighter aircraft in the 1960s**, and Indian pilots trained their Egyptian counterparts from the 1960s until the mid-1980s.
    - Both the **Indian Air Force (IAF)** and Egyptian air force fly the **French Rafale fighter jets**.
  - In 2022, a **pact was signed between the two countries** that have decided to also participate in exercises and cooperate in training.
  - The first joint special forces exercise between **the Indian Army and the Egyptian Army, "Exercise Cyclone-I"** has been underway since 14 January 2023 in Jaisalmer, Rajasthan.
- **Cultural Relations:**
  - The **Maulana Azad Centre for Indian Culture (MACIC)** was established in Cairo in 1992. The centre has been promoting cultural cooperation between the two countries.
- **Difficult Time for Egypt:**
  - Egypt's economy has been in chaos over the past few years due to the pandemic and the **Russia-Ukraine war** which **impacted its supply of food as almost 80% of Egypt's grain** imported from Russia and Ukraine **and impacted Egypt's foreign exchange reserves**.
    - In 2022, **despite restrictions on the export of wheat India allowed shipments of 61,500 metric tonnes to Egypt**.
  - **From India, Egypt is seeking investments in infrastructure** including Metro projects, a **Suez Canal economic zone**, a second channel of the Suez Canal, and a new administrative capital in Egypt.
    - **More than 50 Indian companies** have invested more than USD 3.15 billion in Egypt.
- **Geo-Strategic Concerns:**
  - China's bilateral trade with Egypt is currently at USD 15 billion, **double that of India's USD 7.26 billion in 2021-22**. During the past eight years, the President of Egypt has **travelled to China seven times to lure Chinese investments**.
  - Egypt, the most populous country in West Asia, **occupies a crucial geo-strategic location** — 12% of global trade passes through the Suez Canal and **is a key player in the region**.
    - It is a **major market for India and can act as a gateway to both Europe and Africa**. However, it also has bilateral trade pacts with important West Asian and African nations which is a cause of concern for India.

## INDIA-SINGAPORE STRATEGIC PARTNERSHIP

### Context:

- Recently, Singapore Minister in PMO was on a 2-day visit to India.

### More about the visit

- **The strategic partnership:**

- The strategic partnership between India and Singapore has shown its resilience and both sides look forward to further strengthening this important relationship in areas like trade, defence, science and innovation, education, governance and the digital economy.
- **The upcoming collaborations:**
  - India and Singapore are closely collaborating in cutting-edge areas that will shape the future.
    - The two countries are collaborating in **fintech, information technology, cyber security, skill development, smart city solutions, renewable energy and food security.**
- **Other areas of association:**
  - Both sides also discussed establishing the **Exchange Program of Civil Services** and the **PM Excellence Award to Singaporean Institutes of Excellence.**
  - The Future of Work, Workforce and Workplace of Singapore has agreed to work closely with the **Vision India-2047.**

### India and Singapore Relations

- **Cultural relations:**
  - Relations between the two countries have traditionally been strong and friendly, with the two nations enjoying extensive cultural and commercial relations.
- **Economic partnership:**
  - **Comprehensive Economic Cooperation Agreement (CECA):**
    - India and Singapore have signed the Comprehensive Economic Cooperation Agreement (CECA) in order to increase trade, investments and economic cooperation, and expanded bilateral cooperation on maritime security, training forces, and joint naval exercises, developing military technology and fighting terrorism.
  - **Strategic Partnership:**
    - This robust relationship was elevated to a Strategic Partnership in 2015 during the visit of Prime Minister Modi and on the occasion of the 50th anniversary of the establishment of diplomatic relations
  - **Investment partner:**
    - Singapore is among India's largest trade and investment partners in ASEAN and accounted for 22.13 % of our overall trade with ASEAN in 2014-15.
    - **FDI:**
      - Singapore has emerged as the top source nation in terms of foreign direct investment (FDI) equity flows into India for the financial year 2021-22.
      - The amount of FDI inflow from Singapore to India in fiscal year 2022 was estimated to be almost 16 billion U.S. dollars.
- **Diplomatic relations:**
  - India and Singapore are part of numerous groupings like **G20, Commonwealth, IORA (Indian Ocean Rim Association), East Asia Summit, and IONS (Indian Ocean Naval Symposium).**
    - Singapore supported India's bid to become a permanent member of the U.N. Security Council and expand its role and influence in the Association of Southeast Asian Nations (ASEAN).
  - Singapore also supported India in its **war against Pakistan in 1965** and the Kashmir conflict.
- **Military cooperation:**
  - **SIMBEX:**
    - India and Singapore began their annual naval combat exercise, now called "SIMBEX" Several warships from India and Singapore took part in this interoperable combat exercise.
  - **Defence Cooperation Agreement:**
    - India and Singapore signed a Defence Cooperation Agreement, allowing the Singapore army and air force to conduct training on Indian soil.
  - **Naval Cooperation:**



- India-Singapore Bilateral Agreement for Navy Cooperation was signed which gave Indian Navy ships access to Singapore's Changi Naval Base near the disputed South China Sea, mutual logistical support and refuelling rights at the port.
- India and Singapore signed the agreement for the "strategic relationship" across the board including defence and military, security and intelligence cooperation, political exchanges, enhancing trade and investment, improving financial linkages, improving air connectivity and cooperation in multilateral forums.
- **Smart cities:**
  - Singaporean companies continue to participate in a number of smart city, urban planning, logistics and infrastructure projects.
  - Singapore is working with Rajasthan, Himachal Pradesh and Maharashtra in preparing Master Plans for townships.
- **Skill development:**
  - Singapore is working with the Central and State Governments as well as Government organisations to establish skill development centres in various sectors.

## REFORMING UNSC

### Context:

- Recently, **UN General Assembly (UNGA) President Csaba Korosi** stated that the UNSC does not reflect today's realities.
- **About the UNGA President:**
  - Csaba Korosi is a **Hungarian diplomat** currently serving as **President of the 77th UNGA**.
  - Mr. Korosi is recently on his bilateral visit to India.
    - It is his first bilateral visit to any country since he assumed his role as President of the UN General Assembly in September 2022.
- **Opinion on UNSC reforms:**
  - UNGA President stated that the UN Security Council **does not reflect today's realities**, is **paralysed** and **unable to discharge its basic function** of **maintaining international peace and security** when one of its **permanent members has attacked** its neighbour.
  - **Reasons cited:**
    - According to him, the Security Council cannot discharge its basic function as one of the permanent members of the Security Council attacked its neighbour.
    - The Security Council should be the body to take action against the aggression. But because of the veto power, the Security Council cannot act.
  - **Push for reforms:**
    - He stated that there is a push from a growing number of member nations to reform the powerful UN organ.
- **Background:**
  - Russia, a veto-wielding permanent member of the UN, attacked Ukraine in February 2022.
  - Russia has vetoed UNSC resolutions on Ukraine.
  - Russia also voted against a resolution in the UNGA which called on countries not to recognise the four regions of Ukraine that Russia has claimed.

### United Nations Security Council (UNSC)

- **About:**
  - It is **one of the UN's six main organs** and is aimed at maintaining international peace and security.
  - It held its first session on 17th January 1946 in Westminster, London.
  - **Headquarters: New York City.**
  - **Membership:** The Council is composed of 15 Members:
    - **Permanent members with veto power:**
      - China, France, Russia, the United Kingdom and the United States.
  - More than 50 United Nations Member States have never been Members of the Security Council.
- **UNSC elections:**

- Each year the General Assembly **elects five non-permanent members** (out of 10 in total) **for a two-year term**.
- The **10 non-permanent seats** are distributed **on a regional basis** as follows:
  - Five for African and Asian States.
  - One for the Eastern European States.
  - Two for the Latin American and Caribbean States;
  - Two for Western European and other States
- To be elected to the Council, candidate countries **need a two-thirds majority of ballots of the Member States** that are present and voting in the Assembly.
- The UNSC elections were traditionally held in the General Assembly Hall with each of the 193 member states **casting its vote in a secret ballot**.

#### UN Reforms

- **Demand of reform:**

- **Reform of the United Nations Security Council (UNSC) encompasses five key issues:**
  - Categories of membership,
  - The question of the veto held by the five permanent members,
  - Regional representation,
  - The size of an enlarged Council and its working methods, and
  - The Security Council-General Assembly relationship.

- **Why?**

- **Changing world order:**
  - In the 77-year-old history of the UN, the composition of the Security Council has been altered only once.
    - I.e., In 1963 when the General Assembly decided to expand the Council from 11 to 15 members, with the addition of four non-permanent seats.
  - Since then, the world has changed. The geopolitical relations in the world have altered, the economic responsibilities in the world in countries have also changed.
- **Equitable World Order:**
  - There is a need for a more equitable world in order to uphold the principles of democracy at the global level.
- **Inclusivity:**
  - Developing countries like the African countries, need to be made stakeholders in the multilateral institutions and involved in the decision-making process.
- **Mitigation of New Threats:**
  - With rising protectionism, increased incidents of terrorism and the threat of climate change, the multilateral system must become more resilient and responsive.

- **How?**

- Any reform of the Security Council would require the agreement of at least two-thirds of UN member states in a vote in the General Assembly and must be ratified by two-thirds of Member States.
- All of the permanent members of the UNSC (which have veto rights) must also agree.

- **Challenges:**

- **Lack of Political Will:**
  - Although there is a general agreement towards change in the system, different countries have different perceptions of the requirement for change.
- **Coffee Club:**
  - It is an informal group comprising 40-odd member states, mostly middle-sized states who oppose bigger regional powers grabbing permanent seats, has been instrumental in holding back reforms to the United Nations Security Council over the past six years.
- **Chinese Opposition:**
  - China being a permanent member blocks the growth of India becoming a Permanent Member.

## SOCIAL ISSUE

### FLIP THE PAGE TO THE CHAPTER ON MIDDLE SCHOOLCHILDREN

#### Context

- After a gap of four years, the Annual Status of Education Report (ASER) report for 2022 was recently released in New Delhi. This nationwide household survey that covers all rural districts in the country generates estimates for schooling and basic learning for every State in India. Data from 2018 and 2022 can be compared with longer run trends over the last decade to see how the COVID-19 years have impacted India.

#### Annual Status of Education Report (ASER):

- The survey is facilitated by *Pratham Education Foundation*, and is the oldest survey of its kind in the country.
- **It uses Census 2011** as the sampling frame and continues to be an important national source of information about children's *foundational skills* across the country.
- **ASER 2018** surveyed children in the *age group of 3 to 16 years* and included *almost all rural districts* in India and generated estimates of *foundational reading and arithmetic abilities* of children in the age group 5 to 16 years.
- **ASER 2019** reported on the *pre-schooling or schooling* status of children in the age group 4 to 8 years in 26 rural districts, it focused on the "early years".
  - It laid emphasis on "developing problem-solving faculties and building a memory of children, and not content knowledge".
- **ASER 2020** is the *first ever phone-based* ASER survey and it was conducted in September 2020, the sixth month of national school closures.

#### Data:

- **In 2018:** The all-India rural enrolment figure for the age group **6-14 years** was **97.2(ninety seven point two)%**.
- In **ASER 2022 data**, this is now **4(ninety eight point four)%**.

#### Reason for increase in All-India rural enrolment figure:

- **Shift away from private schools** to government schools.
- **Efforts of many State governments** to provide services even when schools were closed such as mid-day meal rations
- **Teaching-learning materials** shared remotely, worksheet and textbook distribution.

#### ASER data:

- **In 2018:**
  - **Less than a third of all children** in standard five and less than half of those in standard eight could do division in pre-COVID-19 times.
- **ASER evidence suggests that basic learning levels** of middle schoolchildren have remained low and stagnant for over a decade.

#### Significance:

- **Rising enrollment means** that more students can benefit for longer, sustained periods of time from schooling.

#### Consequences of high enrolment and completion rates:

- **More and more students are going through the middle school pipeline** and attending secondary schools
  - There is increased competition for post-secondary opportunities.
- Acute examination stress
- Grade inflation in school-leaving examinations
- Difficulties of gaining admission into college



- Lack of appropriate jobs for many school leavers.

**How is ASER measured?**

- ASER has measured foundational skills in reading and arithmetic.
- **The highest reading task on the ASER tool** is reading a text at Grade II level of difficulty.
- **The assessment is done one on one** with each sampled child in the household.
- **The child is marked at the highest level** that she/he can comfortably reach.
  - The same tasks are used for all children **aged 5 years to 16 years**.

ASER Survey	NAS Survey
Conducted on households	Conducted on schools
It is meant to be an analysis of basic competencies in reading and mathematics across rural India, conducted by community volunteers, in the child’s home	It is a school-based, grade specific, country-wide assessment (covering both rural and urban) but limited to government and government aided schools
Quality of learning measured by reading, writing and arithmetic has either shown no improvement or worsened actually	Significant disparities across states
Increase in mid-day meals served in government schools. Compared to last year’s 97.7 per cent, 99.50 per cent schools now serve meals. Kitchen sheds have also increased.	The rural-urban divide also seems to have been bridged with most of the Indian states showing no significant disparity between rural and urban students.

**Constitutional Provisions related to education:**

- *Part IV* of Indian Constitution, *Article 45 and Article 39 (f)* of Directive Principles of State Policy (DPSP), has a provision for state-funded as well as equitable and accessible education.
- **The 42nd Amendment to the Constitution in 1976** moved education from the State to the *Concurrent List*.
- **Article 21A:** It provides free and compulsory education of all children in the age group of *six to fourteen years* as a fundamental Right in such a manner as the State may, by law, determine. The *86th Amendment in 2002* made education an enforceable right under Article 21-A.
- **Article 39(f):** It provides that children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.
- **Article 45:** The State shall endeavor to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.
- **ARTICLE 46:** The State shall promote with special care the educational and economic interests of the weaker sections of the people, and in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation.

**Related Laws:**

**Right To Education (RTE) Act, 2009:**

- It aims to provide primary education to all children **aged 6 to 14 years** and enforces education as a Fundamental Right.
- It also mandates *25% reservation for disadvantaged sections of the society*.
- **It states that sharing of financial and other responsibilities** between the Central and State Governments.
- **It lays down the norms and standards related to:**
  1. Pupil Teacher Ratios (PTRs)
  2. Buildings and infrastructure
  3. School-working days

#### 4. Teacher-working hours.

#### Government Initiatives:

- National Education Policy 2020.
- Samagra Shiksha (SS) 2.0
- NIPUN Bharat Mission
- PM Poshan Scheme
- Unified District Information System for Education (UDISE).
- Performance Grading Index
  
- **National Education Policy (NEP) 2020: It gives high priority** to the acquisition of foundational literacy and numeracy skills especially for children in early grades.
- **“NIPUN Bharat” (where NIPUN is National Initiative** for Proficiency in Reading with Understanding and Numeracy) the government’s flagship programme designed to translate policy into practice, is beginning to have traction in many States.

#### Way Forward

- **In the last 10 years:** There have been changes such as new technologies, new knowledge domains, and new ways of operating.
  - But within our school systems, many children are reaching standard eight without being sufficiently equipped with foundational literacy and numeracy skills.
- **Children must have strong foundational skills:** They cannot acquire higher level skills or develop advanced content knowledge.
- **ASER data shows that an “overambitious” curriculum** and the linear age-grade organizational structure of Indian schools result in a vast majority of children getting “left behind” early in their school career.
- **Need for in-school mechanisms for “catch up** otherwise children fall further and further behind academically.
- **Schools have stayed open for most of this school year:** Most children are back in school, the urgency of dealing with “learning loss” is acknowledged, and we have a policy that speaks of “critical thinking” and “flexible pathways through school
- **It is time to rethink and rework** what happens with our children once they grow past the foundational stage of schooling.
- **Much of the country’s efforts in school education** are focused on ensuring strong foundations for children in the early years.
  - **Middle school children** also urgently need support for learning recovery and “catch up”.

### INDIA’S RURAL HEALTHCARE SYSTEM

#### Context

- Recently, the **Rural Health Statistics 2021-2022** was released by the Union health ministry.

#### Document highlights

- According to the document, India’s rural healthcare system continues to be plagued by a **shortfall on two critical fronts: Doctors and infrastructure.**
  - **Doctors:** There is a shortage of
    - 83.2 percent of surgeons,
    - 74.2 percent of obstetricians and gynaecologists,
    - 79.1 percent of physicians and
    - 81.6 percent of paediatricians.
  - **Infrastructure:**
    - Less than half the **Primary Health Centres (PHC)**, 45.1 percent, function on a 24x7 basis.

- Of the 5,480 functioning **Community Health Centres (CHC)**, only 541 have all four specialists.

#### **Sub-centres (SCs), Primary Health Centres (PHC) & Community Health Centres (CHC):**

- In the Indian healthcare system, sub-centres (SC) are the first point of contact for a patient, catering to a population of 3,000-5,000.
- This is succeeded by a PHC, which is required to look after the daily needs of 20,000-30,000 people.
- CHCs provide referrals and access to specialists, catering to 80,000-120,000 people.
- **Situation of SCs, PHC & CHC:**
  - According to the document, these facilities are **overburdened** across the board.
    - SCs are currently looking after more than 5,000 people,
    - PHCs catering to 36,049 people and
    - CHCs to 164,027 people.
  - This, coupled with a human resource shortage, plagues access to adequate and quality healthcare.
- **Understaffing of SCs, PHCs and CHCs:**
  - **SCs, PHCs and CHCs had more staff in 2021**, at the height of the deadly second wave of COVID-19, as compared to now.
    - The number of auxiliary nurse midwives at SCs has decreased to 207,587 in 2021 from 214,820 in 2022.
    - **Lab technicians, nursing staff and radiographers** at PHCs and CHCs have all recorded a marginal increase between 2021 and 2022.
  - **State-wise data:**
    - The shortage was most pronounced in Uttar Pradesh, Gujarat, Himachal Pradesh, Odisha and Uttarakhand.
- **Doctors of SCs, PHCs and CHCs:**
  - The number of doctors at PHCs has shrunk to 30,640 in 2022 from 31,716 in 2021.
  - **State-wise data:**
    - **Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat and Odisha** face the highest shortage in **surgeons, obstetricians / gynaecologists, paediatricians and radiographers** at CHCs across the country.
- **Improvements:**
  - A huge improvement has been recorded as compared to 2005, when the government launched the **National Rural Health Mission**.
    - The **allopathic doctors at PHCs** have increased from 20,308 in 2005 to 30,640 in 2022, which is about 50.9% increase.
    - The **specialist doctors at Community Health Centers (CHCs)** have increased from 3,550 in 2005 to 4,485 in 2022, according to the report.

#### **Issues & Challenges**

- **Lack of awareness:**
  - Lack of awareness appears to cut across the lifespan in our country.
    - **Adequate knowledge regarding breastfeeding** practice was found in only one-third of the antenatal mothers in two studies.
    - A study in **urban Haryana** found that only 11.3% of the adolescent girls studied knew correctly about **key reproductive health issues**.
    - A review article on **geriatric morbidity** found that 20.3% of participants were aware of common causes of prevalent illness and their prevention.
- **Poor public health spending:**
  - India is one of the countries with the **lowest public health spending**.
  - Indian government was estimated to spend over two percent of the country's GDP on healthcare in financial year 2022
- **Affordability or the cost of healthcare:**
  - **60%+** of the Indian population has to spend **Out-Of-Pocket (OOP)** to access healthcare services.



- In India, **65%+ of the population is uninsured**, including government and private schemes.
- **Rural Urban disparities:**
  - While the rural population in India is higher, as compared to its urban population, rural health status is generally poorer than in most of the urban areas.
    - The healthcare infrastructure in urban areas is comparatively sophisticated and better equipped.

#### Government initiatives

- **The National Health Mission (NHM):** It was launched by the government of India in **2005** subsuming the **National Rural Health Mission and National Urban Health Mission**.
  - **Main program components include:**
    - **Health System Strengthening (RMNCH+A)** in rural and urban areas
    - **Reproductive-Maternal- Neonatal-Child and Adolescent Health**, and
    - **Communicable and Non-Communicable Diseases**.
  - **Objectives:**
    - Improve health status through concerted policy action in all sectors and expand preventive, promotive, curative, palliative and rehabilitative services provided through the public health sector with focus on quality.
- **National Digital Health Mission (NDHM):**
  - Under this, every Indian will get a **Health ID card** and this card will **contain all the health records of the person**.
  - It aims to develop the backbone necessary to support the integrated digital health infrastructure of the country.
- **Ayushman Bharat Digital Mission:**
  - The Ministry of Health and Family Welfare formulated the Ayushman Bharat Digital Mission with the aim to provide the necessary support for the integration of digital health infrastructure in the country.
    - It aims to develop the backbone necessary to support the integrated digital health infrastructure of the country.
- **Pradhan Mantri Jan Arogya Yojna (PM-JAY):**
  - The scheme was launched and recommended by the **National Health Policy 2017**, to achieve the **vision of Universal Health Coverage (UHC)**.
  - PM-JAY was earlier known as the **National Health Protection Scheme (NHPS)** before being rechristened.
  - It subsumed the then-existing **Rashtriya Swasthya Bima Yojana (RSBY)** which had been launched in 2008.

#### Suggestions & Way ahead

- There is an urgency to focus on **all the three levels of primary, secondary and tertiary healthcare**, it is imperative that the government look towards improving primary health care as a public good.
- The government should **create a framework** for the **right staffing, duration** and think about the **incentives and career paths of doctors** and **all levels of staff** to work in a rural health centre.
- India needs to move beyond the **doctor-led system and paramedicalise several functions**.
- There is a need for an **increase in expenditure** on health so that India can improve existing facilities as well as add more of them.

#### AVOID FURTHER DELAY IN CONDUCTING THE CENSUS

##### Context:

- India aspires to be a **\$10 trillion** economy by **2035**. To achieve this, **conducting population Census**, due in 2021, postponed, is necessary.

##### Census:

- **The census** provides information on size, distribution and socio-economic, demographic and other characteristics of the country's population.
- The Census was first started under **British Viceroy Lord Mayo in 1872**.
- **It helped in framing new policies**, government programs to uplift areas of improvement in the community.
- The first synchronous census in India was held in **1881**.
- **Every ten years:** Since then, censuses have been undertaken uninterruptedly once **every ten years**.

#### Who conducts the census?

- The responsibility of conducting the decennial Census rests with the **Office of the Registrar General and Census Commissioner, India under the Ministry of Home Affairs, Government of India**.

#### The Census is one of the most credible sources of information on the following:

- Economic Activity.
- Literacy and Education.
- Housing & Household Amenities.
- Urbanization, Fertility, and Mortality.
- Scheduled Castes and Scheduled Tribes.

#### Census in India:

- **India's first Census** was held in **1872**, conducted non-synchronously in different parts of the country.
- After that, India has held its decadal censuses regularly from **1881 to 2011**.

#### What does the constitution say about the census?

- **Delimitation:** The use of Census data for delimitation of constituencies
- **For determining the quantum of reservation** for Scheduled Castes and Scheduled Tribes.
- **Periodicity of census:** It does not say what should be the periodicity of the census.
- **The Census Act, 1948:** It provides the legal background for several activities relating to the Census without mentioning anything about its periodicity.
- **It says:** "The Central Government may declare its intention of taking a census, whenever it may consider it necessary or desirable to do so, and thereupon the census shall be taken".

#### Importance of Census data:

- **It is essential for planning** at the village or block level to usher in economic and social development
- **Governance:** Ensure better governance
- **Increase the transparency** of public schemes and programmes.

#### Challenge faced by demographers, planners, and other stakeholders:

- How to estimate the district population.
  - The district is the basic administrative unit for governing, planning, and executing government projects and schemes.

#### Reasons why conducting a Census is a prerequisite for economic development:

- **In the absence of updated Census data**, demographers estimate the annual population count at the district level using past Census information for the intercensal or postcensal period.
  - **Demographic exercises** give reasonably fair estimates when the year of population estimation is within the range of a maximum of 10 years. Beyond this period, estimations can be erroneous.
- **Many districts of India are experiencing a faster demographic transition** with varying fertility and mortality rates.
  - Using the growth rate of **2001-2011** for the period after **2021** becomes more of an **assumption-based model** than a model that reflects empirical reality.
- **Covid-19 further makes the situation complex:** It impacts the fertility and mortality situation in the country.

- **Many states (and districts) lack a complete civil registration system** with a full count of birth and death data, and demographers face enormous challenges in providing population counts at the district level.
- **Migration data collected in the Census** has great implications for economic activities and social harmony.
  - **The pattern of migration within the country**, within states as well as outside the country has been changing in unprecedented ways.
  - **The migration pattern in India** in the present decade is very different from what the data in **Census 2001 and 2011**.
- **The Census counts everyone across** regions, classes, creeds, religions, languages, castes, marital status, differently-abled populations, occupation patterns etc.
  - **Most national-level surveys such as NFHS and NSSO** do not have representative data at the population subgroup level, unlike the Census.

#### Importance of census:

- **The Census can provide population data** for every village and town in the country.
- **Sample surveys can provide reliable data** on social and demographic indicators only at higher geographic levels.
- **Census has been providing data** on population characteristics, housing and amenities.
- **The Census data are used to determine the number of seats to be reserved** for SCs and STs in Parliament, State legislatures, local bodies, and government services.

#### Implications of delay:

- **Surveys have limitations and cannot be used to find answers** to how many villages have literacy rates below 75% or which tehsils have a low percentage of people getting protected water supply.
- **In case of panchayats and municipal bodies**, reservation of seats for SCs and STs is based on their proportion in the population.
  - There is no other source that can provide this information.
- **Delay in the Census** means that the data from the 2011 Census would continue to be used.
- **Rapid changes in the composition of the population** over the last decade.
  - This means that either too many or too few seats are being reserved.
- **The rural-urban distribution of population** has been rapidly changing over the years.
  - **For example:** Areas under the **Bruhat Bengaluru Mahanagara Palike** grew by **3(forty nine point three)%** during **2001-11** etc
- **The pandemic;** It resulted in deaths among adults and the aged relatively more than children.
  - It would give indirect estimates of the number of deaths.

#### Way Forward

- **The existence of numerous faiths and languages** as well as the expansion or extinction of such communities will be known only via population Census.
- **A regular Census at the national and sub-national levels** has been a matter of pride for India.
  - It has to be continued until India achieves a fool-proof civil registration system and a dynamic **National Population Register**.
- **Census is necessary** since it forms the basis of all the plans and programmes that the government wants to implement.
  - Postponing the Census has immediate and long-term negative consequences for India.
- **Separate census from NPR:** It is advisable to separate these two and disassociate the Census from a politically sensitive issue.
  - This would help complete the Census as early as possible and maintain reliability of data.



# GENERAL STUDIES 3.

## INDIAN ECONOMY

### INDIA'S STARTUP BOOM

#### Why in News?

- According to figures presented in Parliament in December 2022, over the last five years, the number of registered **startups** in India have grown from 452 in 2016 to 84,012.
- Many of them are located in the cloud, **which refers to the servers and data storage that are accessible through the internet**, and storage companies are offering a variety of incentives to lure and retain them.

#### What is the Role of AWS Cloud Services in India's Start-up Boom?

- **About:**
  - AWS, or Amazon Web Services, **one of India's largest providers of cloud-based services, has provided start up credits that allow aspirant startups** to use a suite of services from computing, storage and hosting for free.
  - AWS has **helped "compress" the lifecycle of a startup**, allowing them to become more innovative.
  - Cloud services **mean that they can simulate experiments on the cloud**, run tests, fail, and learn from it.
  - India has the **world's third-largest startup ecosystem** after United States (US) and China and therefore, **one of the biggest markets for such cloud services**.
    - Some of the companies supported by AWS included: **HealthifyME, which developed an app called 'Vaccinate Me,'** which allowed feature phones to book close to 50 million vaccination-appointments.
  - AWS also powered the **Ayushman Bharat Digital mission** as well as the Cowin system for **Covid-19** vaccinations.
- **India's Cloud Computing Market:**
  - India's cloud computing market was expected to **grow at 28.1% during the forecast period until 2027**.
  - The high concentration and increasing number of **small and medium-sized businesses in India that are rapidly shifting towards cloud computing** is emerging as the major driving factor for the market.
  - Furthermore, **growing investment towards the construction of cloud data centres** is expected to boost the India cloud computing market.

#### What is the State of Start-ups in India?

- **About:**
  - 49% of start-ups are from tier-2 and tier-3 cities.
  - As of September 2022, India is home to **107 unicorns with a total valuation of USD 340.79 Billion**.
  - According to the India **Venture Capital Report 2021** published by Bain and Company, **the number of cumulative start-ups has grown at a CAGR of 17% since 2012 and crossed 1,12,000**.
- **Major Challenges Related to Start-ups in India:**
  - **Lack of Forward Thrust to Innovation:** India's education system lacks **vocational training** and industry exposure that keeps students deprived of pursuing innovation. As a result, this makes the Indian higher education system lags behind in terms of research and development.
  - **Lack of Recognition:** Since nearly 70% of the Indian population lives in rural areas that are still deprived from **reliable internet access**. Consequently, many village-based start-up go unrecognised and are deprived of government funding initiatives.
  - **Bootstrapped Nature:** For running a start-up, a significant amount of working capital is required. Many start-ups in India, especially at early stages, are bootstrapped, i.e., self-funded through the founders' own savings, since domestic financing is limited.
  - **Scalability Concern:** Small start-ups in India have limited understanding of customers and are confined to only certain regions, where they know the local language and local people.

- **Marginal Penetration in Space Sector:** Indian startups in fintech and e-commerce are doing exceptionally well, but space startups remain outliers.
  - Globally, the space economy is valued at USD 440 billion, with India holding less than 2% of the market.

#### What are the Government's Initiatives for Startups?

- **Startup India Seed Fund Scheme (SISFS):** It aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- **National Startup Awards:** It seeks to recognize and reward outstanding startups and ecosystem enablers that are contributing to economic dynamism by spurring innovation and injecting competition.
- **SCO Startup Forum:** The first-ever **Shanghai Cooperation Organisation (SCO)** Startup Forum was launched in October 2020 to develop and improve startup ecosystems collectively.
- **Prarambh:** The 'Prarambh' Summit aims to provide a platform to startups and young minds from around the world to come up with new ideas, innovation and invention.

### DEPRECIATION OF INDIAN RUPEE

#### Why in News?

- The **Indian Rupee depreciated** by around 10% against the US dollar and the rupee was the **worst-performing Asian currency** in 2022.
- This decline was mainly on account of appreciation in the US currency on safe haven appeal amid fears of **recession** and **inflation** across many parts of the world and **Russia-Ukraine war**.

#### How did the Rupee Perform in 2022?

- During the year, the rupee fell to a lifetime low of 83.2 against the dollar. Compared to rupee, **depreciation of other Asian currencies was to a lesser extent**.
  - During the year, the Chinese Yuan, Philippine Peso and Indonesian Rupiah fell around 9%. South Korean Won and Malaysian Ringgit declined by nearly 7% and 6%, respectively.
- However, the **Reserve Bank of India (RBI)** heavily **intervened in the forex market to defend rupee**. Since the beginning of 2022, the country's foreign exchange reserves have fallen by USD 70 billion. It stood at USD 562.81 billion as of 23<sup>rd</sup> December 2022.
- Reserves have witnessed a bit of erosion but the central bank is now starting to again build up its reserves and that would act as a buffer in times of uncertainty.

#### What was the Reason for Capital Outflows?

- The US Fed aggressively raised interest rates by 425 basis point (bps) in 2022 in its **fight against inflation**. This led to a **higher interest rate differential between the US and India**, and investors pulled out money from the domestic market and started **investing in the US market to take advantage of higher rates**.
- In 2022, **Foreign Portfolio Investors (FPIs)** pulled out **Rs 1.34 lakh crore from the Indian markets** – the highest-ever yearly net outflow.
  - They withdrew Rs 1.21 lakh crore from the stock markets and Rs 16,682 crore from the debt market in 2022, **putting pressure on the rupee**.
- Russian invasion of **Ukraine accentuated the FPI withdrawals with the global economic slowdown** making inflows tougher.

#### What may be the Impact of Depreciation on the Indian Economy?

- **Positive:**
  - Weaker rupee should theoretically **give a boost to India's exports**, but in an environment of uncertainty and weak global demand, a fall in the external value of rupee may not translate into higher exports.
- **Negative:**

- It poses **risk of imported inflation**, and may make it difficult for the central bank to maintain interest rates at a record low for longer.
- India meets more than two-thirds of its domestic oil requirements through imports.
- India is **also one of the top importers of edible oils**. A weaker currency will further escalate imported edible oil prices and lead to a higher food inflation.

### What is the Outlook on Rupee for 2023?

- Even though the outlook on the rupee remains weak in the near future, the **depreciation in local currency may not continue for a longer period** as India remains the fastest-growing economy.
- The terminal interest rate for the US Fed was anticipated, **but it cannot be the case that their monetary policy will be tightened endlessly**.
- When the (US Fed) tightening is over, **the tide will surely turn**.

### What is Appreciation vs Depreciation of Currency?

- In a floating exchange rate system, **market forces (based on demand and supply of a currency) determine the value of a currency**.
- **Currency Appreciation**: It is an **increase in the value of one currency** in relation to another currency.
  - Currencies appreciate against each other for a variety of reasons, including government **policy, interest rates, trade balances and business cycles**.
  - Currency appreciation discourages a country's export activity as its products and services become costlier to buy.
- **Currency Depreciation**: It is a fall in the value of a currency in a floating exchange rate system.
  - Economic fundamentals, **political instability, or risk aversion can cause currency depreciation**.
  - Currency depreciation encourages a country's export activity as its products and services become cheaper to buy.

### What are Devaluation and Depreciation?

- In general, devaluation and depreciation are often used interchangeably.
- They both have the same effect – **a fall in the value of the currency which makes imports more expensive, and exports more competitive**.
  - However, there is a difference in the way they are applied.
- A devaluation occurs when a country's central bank makes a conscious decision to lower its exchange rate in a fixed or semi-fixed exchange rate.
- A **depreciation is when there is a fall in the value of a currency in a floating exchange rate**.

### Question For Practice

Q. How would the recent phenomena of protectionism and currency manipulations in world trade affect macroeconomic stability of India?

## CRYPTO AWARENESS CAMPAIGN

### Why in News?

- The **Investor Education and Protection Fund (IEPF)** will launch an outreach programme to create awareness of **Cryptocurrencies** and Online Gaming.

### What is the Outreach Programme?

- The need for the outreach programme is based on the observation that **both crypto-assets and online gaming (that extends to gambling and betting) are still being promoted in a risky manner** despite the recent turmoil in the sector.
- The programme will help potential investors to thoroughly educate themselves before making any decision since cryptocurrency investing is a **complex and risky endeavour**.

### What is the IEPF?



- It is managed by the IEPF Authority, **which was set up in 2016 under the provisions of Section 125 of the Companies Act, 2013.**
- The Authority is entrusted with the responsibility of administration of the IEPF, which, besides promoting awareness among investors, **makes refunds of shares, unclaimed dividends, matured deposits and debentures** and so on to rightful claimants.
- As for investment education, the idea is to reach out to household investors, housewives and professionals alike in rural and urban areas and teach them the basics.
- **Focus areas include primary and secondary capital markets**, various saving instruments, the instruments for investment (such as mutual funds, equity, among others), making investors **aware of dubious Ponzi and chit fund schemes and existing grievance redressal mechanisms**, among other things.

#### Why is there a Concern about Cryptocurrency?

- The crypto dilemma stems from concerns about the **unregulated currency having a destabilising effect** on the monetary and fiscal stability of a country.
- Further, crypto exchanges in India are being investigated for their alleged involvement in unlawful practices such as **drug trafficking, money laundering, violating foreign exchange legislation and evasion of GST (Goods and Services Tax).**
  - As on December 2022, Rs 907.48 crore have been attached/seized, three persons have been arrested and four prosecution complaints have been filed before the Special Court, **Prevention of Money Laundering Act (PMLA).**
- The immutable, public nature of the blockchain makes crypto a poor choice for money laundering because it allows law enforcement to uncover and trace money laundering far easier than cash transactions.”
- The **Reserve Bank of India (RBI)** has recommended framing legislation on the sector. It is of the view that **cryptocurrencies should be prohibited.**

#### What about Online Gaming?

- The Ministry of Electronics and Information Technology (MeitY) has been appointed the nodal industry for **online gaming in India; for e-sports, the nodal agency is the Department of Sports**, under the Ministry of Youth Affairs and Sports.
- A proposed framework for Central regulation by MeitY is **expected to address issues faced by the sector.**
- For instance, there is confusion about the **definitions of a ‘game of chance’ like fantasy games, and a ‘game of skill’**, a term which has been used in the Public Gaming Act (1867) but has not been spelt out. There are risks from cybercrimes as well.
- In a ‘game of skill’, while the element of chance cannot be entirely ruled out, it is the ‘element of skill’ (mental or physical skill of the user) that **plays a dominant role in determining the outcome of the game** rather than pure chance.
- As per several rulings of the **Supreme Court** and several **High Courts** clearly establish ‘Games of Skill’ as **legitimate business activities protected under Article 19(1)(g)** of the Indian Constitution.
- These rulings have also emphasized a clear distinction between ‘Games of Skill’ and ‘Games of Chance’.
- Despite these court rulings, **online skill games have faced restrictions in a few States due to addiction**, financial losses and the thin line between skill and chance.

#### Way Forward

- Apart from the outreach programme, **there has to be a regulatory mechanism for the crypto sector.**
- If the government takes a heavy-handed approach and starts saying things like virtual currency is not legal in India, that will not be entirely true. People **may presume incorrectly that it is illegal**, and One may be indulging in unlawful transactions like money laundering using crypto assets. But unlawful transactions **can also be executed using legal banking channels as well.**

#### Question for Practice

**Q.1** What is Cryptocurrency? How does it affect the global society? Has it been affecting Indian society also?

## CORPORATE TAX

### Why In News?

- Recently, **corporate tax collections** exceeded **3% of the GDP** after a gap of two years in **2021-22**.
- It is reflecting overall improvement in profitability of India Inc propelled by an **increase in demand for goods and services**.
- However, the **corporate tax collection** is yet to surpass its five-year high of 3.51% of GDP recorded in 2018-19.

### What are the Key Highlights?

- In actual terms, the **net corporate tax collection** in **2021-22** stood at **Rs 7.12 lakh crore**.
- The **Gross Domestic Product (GDP)** at the current market price was **Rs 236.64 lakh crore**.
- The **percentage of net corporate tax to GDP** worked out to be **3.01%**.
- In 2019-20, government cut corporate tax rates for new manufacturing units by almost **10% points** as it looked to pep up investments.
- The rate of **Minimum Alternate Tax (MAT)** too had been reduced to **15 %** from **18.5 %** in 2019.
  - The **Minimum Alternate Tax** is a strategy designed to close the **income tax loophole** for all businesses. The **MAT** makes sure that no business, even one with **strong financial standing** and **significant revenue**, may escape paying income tax, even after claiming exemptions.
- The **tax cut** was reflected in the realization of **corporate taxes** in **2019-20**, when collections fell to over **Rs 5.56 lakh crore (2.77% of GDP)**.

### What is the Corporate Tax?

- **Corporation tax** is payable by both **public and private companies** registered in India under the **Companies Act 1956**.
- **Corporation tax** is a **direct tax** placed on a company's net income or profit from its operations.
  - The tax is imposed on the **net profits of the corporation**, which is calculated by subtracting allowable expenses such as the cost of goods sold, operating expenses, and depreciation from the corporation's total revenue.

### What is the Significance of Corporate Tax?

- **Corporate tax** is an **important source of revenue** for governments, as it helps to fund **public goods and services** such as **schools, hospitals, roads, and defence**.
- **Corporate tax** also plays a role in **redistributing wealth** and **addressing income inequality**, as it imposes a **higher tax burden** on corporations that are more profitable.
- In addition, **corporate tax** can also have other **economic and social impacts**.
  - **For example, corporate tax** can affect the **competitiveness of businesses**, as a **higher corporate tax rate** may make a country or region less attractive for investment compared to other jurisdictions with **lower tax rates**.
- **Corporate tax** can also influence the **location and type of businesses** that operate in a jurisdiction, as businesses may be more or less likely to invest in a particular area depending on the **tax environment**.

### Conclusion

- Overall, the importance of corporate tax depends on the specific context and goals of the government and the society. Some may view corporate tax as a necessary tool for financing public goods and promoting social justice, while others may view it as a burden on businesses and a deterrent to economic growth.

## NATIONAL MONETISATION PIPELINE

### In News

- According to recent data, the Centre's ambitious National Monetisation Pipeline (NMP) may miss the goal in FY23 by a wide margin.

#### **More about the news**

##### **• About the shortfall:**

- After achieving the target for the first year rather comfortably, the Centre's National Monetisation Pipeline (NMP) may miss the goal as **railways, telecom and petroleum sector** slip on their goals.
  - Telecom and petroleum sectors are seen the worst performers while mining would be doing the heavy lifting for the second consecutive year.
- As against the FY23 NMP target to generate **Rs 1.62 trillion in revenues and investments**, officials indicated that the **shortfall could be about Rs 50,000 crore**.

#### **Sector specific data & challenges**

##### **• Mining sector:**

- Previous year, a sum of about Rs 1 trillion was raised through the monetisation route as against the target of Rs 88,200 crore due to the mining sector.

##### **• Railways:**

- Railways is the **biggest component of the Rs 6 trillion NMP in the four years through FY25**.
  - Railways collected just Rs 800 crore via monetisation through redevelopment of one railway station and some railway colonies in the last fiscal year as against the target of Rs 17,810 crore.
- According to the NMP, railways need to monetise 120 stations, 30 trains and 1,400 km track, among others in FY23. But, it has achieved little so far.

##### **• Telecom:**

- As against the **target of Rs 20,180 crore**, the department of telecom has not been able to monetise any of telecom assets so far and doubts have emerged if it could achieve anything.
  - The original plan was to mobilise Rs 15,780 crore by inviting private investors to bid for Bharat Broadband Network's 300,000 km of optical fibre networks to upgrade, operate and maintain across the country, including states.
  - Another Rs 4,400 crore was estimated from BSNL/MTNL tower monetisation through rent-operate-transfer (ROT) concession model, but bids are yet to be called for these.

##### **• Natural gas and petroleum product pipelines:**

- Monetisation of natural gas and petroleum product pipelines were projected to fetch Rs 9,176 crore in FY23.
- However, oil and gas companies have proposed alternate assets such as **monetisation of oil fields (on the lines of mines monetisation) through private participation in exploration & with the inflow of technology**.

##### **• Road Transport and Highways:**

- Monetisation by other sectors including road assets by the National Highways Authority of India (NHA) are on track.
  - NHA is expected to meet its target of Rs 32,855 crore from the securitisation of toll receivables from **expressways, Infrastructure Investment Trusts (InvITs) and Transfer-Operate-Transfer (ToT) models**.

#### **About National Monetisation Pipeline:**

##### **• About:**

- The pipeline has been **developed by NITI Aayog**, in consultation with **infrastructure line ministries**, based on the **mandate for 'Asset Monetisation' under Union Budget 2021-22**.
- NMP estimates aggregate monetisation potential of Rs 6.0 lakh crores through core assets of the Central Government, over a four-year period, from FY 2022 to FY 2025.
- It aims to unlock value in brownfield projects by engaging the private sector, transferring to them revenue rights and not ownership in the projects, and using the funds generated for infrastructure creation across the country.

##### **• Framework:**



- The pipeline has been prepared based on inputs and consultations from respective line ministries and departments, along with the assessment of total asset base available therein.
  - Monetization through disinvestment and monetization of non-core assets have not been included in the NMP.
- **The framework for monetisation of core asset monetisation has three key imperatives:**
  - Monetization of rights & not the ownership, assets headed back at the end of transaction life.
  - Brownfield de-risked assets, stable revenue streams.
  - Structured partnerships under defined contractual frameworks with strict KPIs & performance standards.
- **Significance:**
  - **Innovative way of Private Participation:**
    - Private sector is well known for its efficiency and technology.
    - NMP will provide a way to exploit the strength of the Private sector for infrastructure creation without transfer of ownership.
  - **Ensure Further investment in Infrastructure Building:**
    - It will help to properly monetise under utilised brownfield projects
  - **Other:**
    - Revival of the economy and create sustainable demand.
    - Spillover effect of infrastructure is high on cycle of demand
    - It will create further value for infrastructure creation in the country
    - It will enable high economic growth and seamlessly integrating the rural and semi-urban areas for overall public welfare.
- **Challenges:**
  - **The NMP framework lacks following:**
    - Lack of identifiable revenue streams in various assets,
    - Level of capacity utilisation in gas and petroleum pipeline networks,
    - Absence of Dispute resolution mechanism, etc.
  - Analysts also point to issues such as the lack of independent sectoral regulators as potential impediments.

### Way Ahead

- Asset Monetisation needs to be viewed not just as a funding mechanism, but as an overall paradigm shift in infrastructure operations, augmentation and maintenance considering the private sector's resource efficiencies and its ability to dynamically adapt to the evolving global and economic reality.
- New models like Infrastructure Investment Trusts & Real Estate Investment Trusts will enable not just financial and strategic investors but also common people to participate in this asset class thereby opening new avenues for investment.

## How RBI FUNCTIONS

### In News

- Over the years, different aspects of RBI's functioning have been examined by different committees.
- But none of them have attempted a comprehensive examination of RBI's role in the Indian economy.
- The last such effort was in 1931, when a 21-member central banking enquiry committee led by BN Mitra made its case for a modern central bank in the country, leading to the RBI Act in 1934.

### Risk Management Ability

- The first challenge relates to RBI's risk- management ability.
- A central bank is the first line of defence against a financial crisis.
- This calls for fire-fighting abilities when a crisis strikes.
- More importantly, it calls for thoughtful regulation that can insulate an economy from global shocks.
- And watchful supervision that can detect signs of financial stress.

- Ahead of the 2008 global financial crash, RBI's conservatism saved India from the worst of the financial crunch that paralysed the rest of the world.
- Yet, RBI failed to tell us about the growing pile of bad loans in the domestic banking system, which ballooned to toxic levels in the 2008-12 period.
- RBI's regulatory forbearance hid the real extent of the problem till it was too late.

### Consumer Protection

- The second challenge relates to consumer protection.
- This has been a weak spot historically, with RBI barely taking notice of rampant mis-selling by banks.
- The digital age raises new risks for first time users and new entrants into the formal financial system, who often fall victim to financial scamsters.
- India's digital payments system today is a global success story thanks to years of patient work by RBI's payments team.

### Autonomy

- The degree of RBI's autonomy remains a constant source of conflict between the central bank and the government.
- Since 2016, RBI has enjoyed operational autonomy to set short-term interest rates under the new monetary policy framework.
- In other aspects, it enjoys autonomy only when the government indulges it.
- When a regulator lacks autonomy, its ability to enforce its writ is bound to be impacted.

### Accountability

- Central bankers are unelected technocrats who wield enormous power in a modern economy.
- Most mature democracies deal with this challenge by instituting sound accountability and transparency mechanisms, not by running down central bankers.
- Having more independent voices on the RBI board, selected by a non-partisan panel, can bring about greater accountability without compromising RBI's autonomy.

### Conclusion

- A new contract between RBI and the finance ministry, enshrined in a 21st- century RBI Act.
- This will burnish the credibility of both organs of the State and bring down friction points.
- RBI's reporting and transparency norms need a relook.
- Globally, central banks have increasingly opened themselves up to investors and ordinary citizens to make themselves more accountable

### Question For practice

**Ques** – Discuss the role of RBI in supporting India's Growth journey.

## PROJECT E-RUPEE

### In News

- The RBI launched a **limited test of the retail digital rupee** for specific use cases on November 1, 2022.

### Key Points

- The pilot Project covers select locations in a closed user group (CUG) comprising about 15,000 customers and merchants across the country.
- The pilot will later be extended to Ahmedabad, Gangtok, Guwahati, Hyderabad, Indore, Kochi, Lucknow, Patna and Shimla.
- Four more Banks will be included soon:
  - Bank of Baroda,
  - Union Bank of India,

- HDFC Bank and
- Kotak Mahindra Bank

### Central Bank Digital Currency (CBDC)

- It is the **legal tender** issued by a central bank in a digital form.
- It is the **same as a fiat currency** and is exchangeable one-to-one with the fiat currency. Only its form is different.
- It will be an **electronic version** of cash.
- It will be primarily meant for **retail transactions**.
- It will be potentially available for use by all which includes the private sector, non-financial consumers and businesses.
- It will be able to provide **access to safe money** for payment and settlement.
- It will be the **direct liability** of the central bank.

### How will the retail digital rupee work?

- It will be issued in the same denominations as paper currency and coins and will be distributed through banks.
- Users will be able to **transact through a digital wallet** which would be stored on mobile phones and devices.
- Transactions can be both:
  - Person to person (P2P)
  - Person to merchant (P2M).
- Payments to merchants can be made **using QR codes** displayed at merchant locations.
- It will not earn any interest and can be converted to other forms of money like deposits with banks.
- RBI has demarcated the digital rupee into two broad categories:
  - General purpose (retail)
  - Wholesale
    - The RBI has already launched the digital rupee for the wholesale segment to settle secondary market transactions in government securities.
    - Wholesale CBDC is designed for restricted access to select financial institutions.
    - It has the potential to transform the settlement systems for financial transactions undertaken by banks in the government securities (G-Sec) segment, inter-bank market and capital market more efficiently and securely in terms of operational costs, use of collateral and liquidity management.

### Significance

- It aims at **reduction in operational costs** involved in physical cash management, fostering financial inclusion, bringing resilience, efficiency and innovation in the payments system.
- It will **add efficiency to the settlement system** and boost innovation in cross-border payments space.
- It will provide the public with the uses that any private virtual currencies can provide **without any associated risks**.
- It will curb issues such as money laundering, terror financing, tax evasion, etc.
- E-rupee transactions can be both person to person (P2P) and person to merchant (P2M).
  - For **P2M** transactions, such as shopping, there will be QR codes at the location.
  - Users will be able to **withdraw digital tokens** from banks in the same way they currently withdraw physical cash.
  - Users will be able to **keep the digital tokens** in the digital wallet, and spend them online or in person, or transfer them via an app.

### Challenges

- **Lack of Consumer Protection:** No Dispute Settlement Mechanisms and control of Securities and Exchange Board of India (SEBI).
- **Digital Illiteracy:** The population of India is currently not equipped to deal with cryptos.



- **Security Risks:** Cyberattacks on wallets, exchange mechanism (Crypto jacking).
- **Shield to Crime:** If not regulated and monitored properly, it can be used for illicit trading, criminal activities, & organised crimes.
- **Popularity of Cryptocurrencies:** RBI has repeatedly flagged concerns over money laundering, terror financing, tax evasion, etc with private cryptocurrencies like Bitcoin, Ether, etc.
- **Low volume:** The volume of transactions seems to be low in the test phase, vendors now have another option to accept payment from customers, apart from cash and the unified payment interface (UPI).
- **Preferences of Consumers:** If there is a delay in a transaction or if it fails, customers prefer paying using other digital payment modes, which are currently faster.

### Way Ahead

- E-rupee should be **issued in the same denominations** as paper currency and coins.
- **Different features and applications** of the e-rupee token and architecture should be created to **enable and ease its usage** and transition to e-Rupee.

## WAGES OF DISTRESS

### **Context:**

- The latest estimates of Gross Domestic Product (GDP) released by the National Statistical Office (NSO) suggest that the Indian economy grew by 3(six point three)percent in the last quarter compared to last year, with full-year growth expected to be around 7 percent.

### **Gross Domestic product(GDP):**

- GDP is a measure of economic activity in a country.
- It is the total value of a country's annual output of goods and services.
- It gives the economic output from the consumers' side.

### **Real and Nominal GDP:**

- Nominal GDP is calculated as per the market prices for the year for which the GDP is calculated.
- Real GDP is calculated as per the market prices in the base year.
- The Real GDP negates the inflation in goods and services.

### **National accounts data shows:**

- Average income in India is lower in 2021-22 compared to the pre-pandemic year of 2018-19
- Per-capita income declining at 25(zero point two five) percent per annum.

### **Cases:**

- Case of farmers(the largest occupational group): Farmers' income declined by 5(one point five) percent per year between 2016-17 and 2020-21.
- Case of casual workers:(monthly data from the labor bureau): Real wages in non-agricultural occupations between September 2017-2022 declined by 9(zero point nine) percent per annum
  - Almost stagnant for agricultural occupations with real wages rising by 1(zero point one) percent per year.
  - Cultivators and rural wage laborers account for 78 percent of all rural workers
    - Their share in the economy is 53 percent.
  - **Four-fifths of rural workers** have not seen any increase in their incomes in the last five years.

### **Current Issues:**

- Rural households and the poor that have seen a decline in incomes.
- Better-protected regular workers in urban areas have not fared better.
- **Employment-Unemployment Surveys of the National Statistical Office (NSO) and the Periodic Labour Force Survey (PLFS):** suggest that real earnings of regular workers have declined across categories(male and female, rural and urban).

- Between 2011-12 and 2017-18: earnings of rural regular workers declined by 3(zero point three) percent per annum while it declined at a faster pace of 1.7(one point seven) percent per annum in urban areas.
  - Between 2017-18 and 2020-21: further declines by 7(zero point seven) percent in rural areas and 1.3(one point three)percent in urban areas.
- **In 2020-21:**
  - average rural regular worker was earning only 96 percent of the salary in 2011-12 in real terms
  - Urban; It was only 86 percent in urban areas.
- Together with cultivators and rural casual wage workers(account for 83 percent of all workers in the country).
- All of them have seen their real earnings decline in the last five years.

#### **PLFS data:**

- Real earnings of households from all forms of employment declined(between 2018-19 and 2020-21): decline in per capita incomes reported by the national accounts.
- PLFS estimates of earnings from employment: The decline was largely in the urban areas where earnings declined by 2(four point two) percent per annum.
  - **Rural areas:** per capita earnings from employment actually rising by 7(two point seven) percent.
- **Consumption expenditure:**
  - The consumption expenditure of the urban areas declined by 4 percent whereas it increased in rural areas.
  - **Urban areas:** highly educated among the regular workers have seen faster decline in real earnings compared to illiterates and bare literates.

#### **Consumer Confidence Surveys (CCS) of the RBI:**

- **Urban economy:** Shows distress in the urban economy.
- It tracks the economic situation in 13 major urban centers
- It seeks the perception of respondents on the current as well as future economic situation.
- Last five years: the net response to the economic situation has been negative.
- Case with incomes: more respondents reporting a decline in incomes compared to those who report improvement.
- Case of non-essential spending continues to remain negative until the last data.

#### **Annual financial statement (AFS)**

- The Constitution of India does not specifically use the word Budget.
- Article 112 provides for laying before Parliament an 'Annual Financial Statement' providing a statement of the estimated receipts and expenditure for the upcoming year in relation to estimates for the current year as also actual expenditure for the previous year.
- This statement evidences the receipts and expenditure of the Government in three separate parts under which accounts are maintained i.e. the Consolidated Fund (Article 266), Contingency Fund (Article 267) and Public Account (Article 266).
- AFS distinguishes the expenditure on revenue accounts from the expenditure on other accounts, as mandated in the Constitution of India. It comprises Revenue budget and Capital budget.
- The estimates of receipts and expenditure included in the Annual Financial Statement are for expenditure net of refunds and recoveries

#### **Way Forward**

- **The distress in the economy is no longer a rural phenomenon:** It is far more widespread with even the better protected and middle classes in urban areas experiencing it due to declining incomes.
- The challenge for the government is not just to protect the poor and vulnerable through increased spending on social protection given the inflationary spell.
- It also needs to raise incomes for the majority of rural and urban population.

- Increasing disposable income among the middle classes is the only way to increase discretionary demand in the economy.
- The budget has the unenviable task of reviving the economy even at the cost of the short-term objective of fiscal management.

## BALANCE FISCAL CONSOLIDATION WITH GROWTH

### Context

- The **supply of critical imports** were disrupted by the **Russia Ukraine war** and the prices of such imports **increased sharply**, derailing many economies.

### Fiscal policy:

- The fiscal policy is concerned with the raising of government revenue and Government Budget increasing expenditure.
- To generate revenue and to increase expenditures, the government finance or policy called Budgeting policy or fiscal policy

### The major fiscal measures are:

- Public Expenditure
- Taxation
- Public Borrowing

### India's economic condition:

- **India's performance** was relatively better than many other countries, the return to normalcy has been delayed.
- **India's GDP** at the end of the present fiscal year will only be **57(eight point five seven)%** higher than its level in 2019-20, giving an average of 2.86% for three years.

### Growth performance:

- **Real Gross Value Added (GVA)(2002-23)**:It is estimated to grow by **7(six point seven)%**.
  - **sectoral decomposition indicates** that every output sector has turned positive as compared to the corresponding magnitudes in the pre-COVID-19 year of 2019-20.
- **Nominal GDP(2023-24)**: It may be close to ₹300 lakh crore.
  - **Real growth in the second half of 2022-23** is only **5(five point five)%** as per the advance estimates.
- **The policy response to the COVID-19 shock**: There was a sharp increase in the Centre's fiscal deficit to **2(nine point two)%** of the GDP.
  - More than three times the original Fiscal Responsibility and Budget Management Act (**FRBM**) **norm of 3%**.
- **Fiscal deficit**: In the two succeeding years, the fiscal deficit could be reduced to **7(six point seven)%** and **6.4(six point four)%**, respectively.

### Challenges to India's growth prospects:

- **The Organization for Economic Co-operation and Development(OECD)**: It has projected a growth rate of **2(two point two)%** for the global economy in 2023
  - **India: 5.7(five point seven)%** in 2023-24.
- **The International Monetary Fund**:
  - **Global growth: 2.7(two point seven)%**
  - **India's growth: 1(six point one)%**.
- **India may be able to achieve a growth** in the range of **6-6.5(six point five)%** in 2023-24, provided significant policy support is given to growth.

### India's Fiscal prospects:



- **Growth in the Centre's Gross Tax Revenues (GTR) in 2023-24** would be less than that in 2022-23.
  - Because of an expected fall in both real GDP growth and deflator-based inflation.
- **Together with non-tax revenues and non-debt capital receipts:** total resources available to the Central government would be nearly ₹28.3(twenty eight point three)lakh crore.

#### Way Forward

- **With 2023-24 being the first genuine post COVID-19 normal year:** It would be best to spell out a convincing path towards the prescribed fiscal deficit ratio of 3%.
  - This calls for a total adjustment of 3.4(three point four) percentage points of GDP.
- **The need for correction in the government's fiscal deficit** because of the relative profile of savings and investment as a proportion of GDP.
- **Financial savings** along with net inflow of foreign capital provide the extent of surplus available for the potential net deficit sectors in the economy.
- **Target a reduction of 0.7(zero point seven)% point in fiscal deficit in 2023-24** compared to 2022-23
  - The resultant fiscal deficit of **7(five point seven)%** of GDP would imply availability of investible resources of **1.1(one point one)%** of GDP for both the private corporate sector and the non-government public sector.
- **Finance by household sector financial savings** of about **8% of GDP** and net inflow of foreign capital of **3(two point three)%** of the GDP.
  - It will not put any additional pressure on interest rates
  - It would be ideal for sustaining a robust medium-term growth with price stability.
- **Bringing down fiscal deficit and charting out a glide path** are essential for maintaining price stability.
  - The pressure on the Reserve Bank of India (RBI) to expand reserve money will come down.
- **A careful calibration would be required** for limiting revenue expenditure growth in order to retain space for capital expenditure to grow adequately with a view to supporting growth

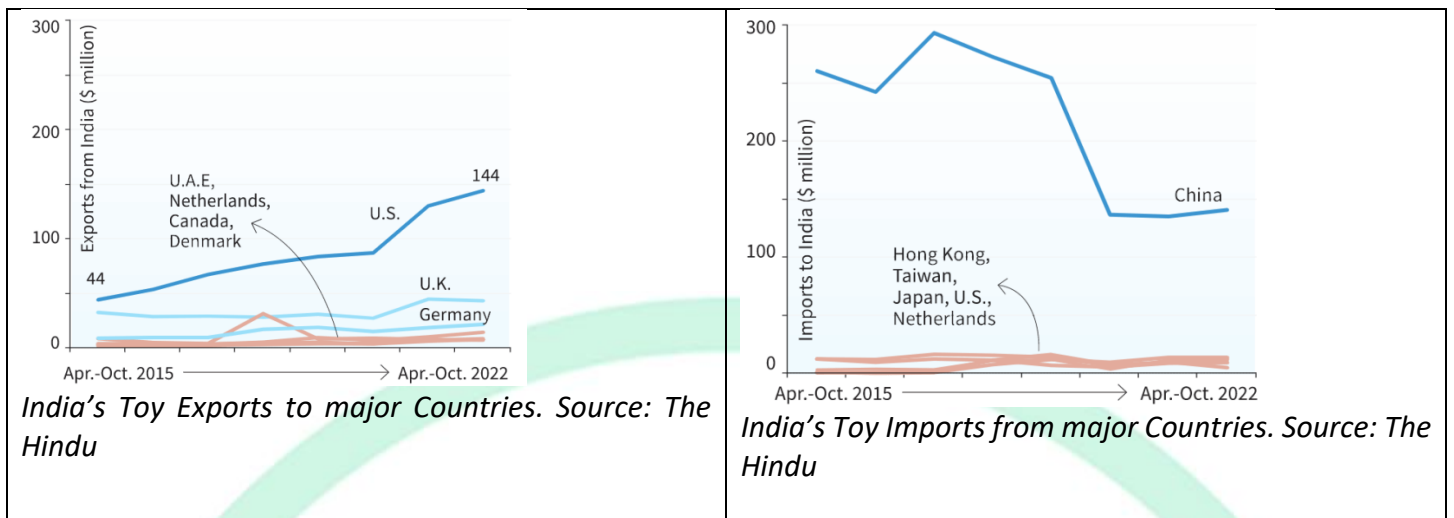
### INDIA'S TOY INDUSTRY: GROWTH AND CHALLENGES

#### Context:

- In August 2020, amid the COVID-19 pandemic, the Prime Minister had exhorted that India can become a global hub in Toy Industry manufacturing and exports. In July 2021, the PM had said that India imports 80% of toys. He called on people of India to be '**vocal for local toys**'. By July 2022, India's exports of toys had surged from INR 300-400 crore to INR 2,600 crore. Imports had fallen from INR 3,000 crore, making India a net exporter of toys. The turnaround in the toy industry showcases the success story of focused approach by Government in supporting domestic manufacturing. The learning from the success of toy industry can be implemented in other sectors to enhance India's exports and reduce dependence on imports.

#### The growth of India's Toy Industry

- Indian Toys Industry is estimated to be US\$ 1.5 billion making up 0.5% of global market share. The toy manufacturers in India are mostly located in the NCR, Maharashtra, Karnataka, Tamil Nadu and clusters across central Indian States. The sector is fragmented with 90% of the market being unorganized and 4,000 toy industry units from the MSME sector.
- According to a joint report by industry body FICCI and KPMG, the India's toy industry is expected to double from US\$ 1 billion in 2019-20 to US\$ 2 billion by 2024-25. A share of 0.5% of the global toy industry shows indicates large potential growth opportunity. The domestic toy demand is forecasted to grow at 10-15% against the global average of 5%.
- According to the Ministry of Commerce & Industry, the import of toys into India has declined sharply from US\$ 304 million in 2018-19 to US\$ 36 million in 2021-22. On the other hand, exports have increased from US\$ 109 million in 2018-19 to US\$ 177 million in 2021-22.



### Factors driving growth of India's Toy Industry:

- **Huge Consumer Base** : India's population today stands at ~1.4 billion or 17.7% of the global population. In 2019, ~26.62% of the Indian population fell into the 0-14 age category. Such a large young population is likely to offer potential for the toy industry's growth.
- **Rising Disposable Income**: India has exhibited strong GDP growth rates for the last several years and now, represents one of the world's largest economies. Driven by this trend, the middle-class population has experienced strong growth. On an average, every Indian is earning 30% more than that six years ago. Consumers have more disposable incomes and their spending patterns have also changed. This has resulted in a **major shift from traditional** and medium- to low- end battery-operated toys **to innovative electronic toys**, intelligent toys, and upmarket plush toys.
- **Rise in Online Purchases**: Online sales channels have also witnessed boom in India with the evolution of smartphones and other digital media. As quality and features of products can be discussed among shoppers and prices can be compared on various platforms, online sales channels have appeared to be one of the fastest-growing distribution channels for toys in India.
- **Shifting Preference**: According to the Toy Association report in 2018, 67% parents believe in **STEM-focussed toys** as their primary way to encourage science and math development in young children. Shifting preference from conventional toys towards modern and hi-tech electronic toys is strengthening the market growth.
- **Going Global**: Toy sector is also going global, as manufacturers are scouting new markets and increasing exports to the Middle East and African countries.
- **India's Protectionist Strategy**: In addition to increasing the basic customs duty on toys from 20% to 60%, stringent conditions have also imposed on the quality of toys that are imported. This has reduced availability of imported toys and enhanced demand for domestic toy industry.

### Steps taken by the Government to aid growth of Toy Industry:

- **Call to the Start-ups**: The Government has called upon start-up entrepreneurs to explore the toy sector. The Government has also urged industry players to support local toys and reduce reliance on foreign goods. Educational institutions have been asked to organise hackathons for students to innovate in toy technology and design, including online games, to reflect Indian ethos and values.
- **Increase in Custom Duty**: The Government has increased basic customs duty from 20% to 60%. It is likely to result in toy importing brands to explore manufacturing in India, especially for the Indian market. It has also increased demand of toys manufactured by domestic toy industry.
- **Mandatory Quality Certification**: The Government has made toy **quality certification mandatory** to revive the indigenous industry. The Government began enforcing quality control for imported toys from September 1, 2020, to ensure that only products conforming to standards enter the country.

- **Programmes Boosting the Toy Industry:** The Government has chalked out a plan to **promote traditional toys** manufactured in the country by creating **Toy Labs** (a national toy fair for innovative Indian-themed toys). A plan to establish networks of toy labs such as **Atal Tinkering Labs** is also in the works to provide support for physical toys and for children to learn, play and innovate. Such labs will also be a way of specialised toy marking for quality certification and original design.
- **Involvement of Various Sectors:**
  - (a) The Government has invited the Ministries of Education, Textiles, I&B, Commerce, Women and Child Development, Culture, Tourism, Railways, Urban Development, Science and Technology and IT to give their inputs for betterment of the toy industry. The Department for Promotion of Industry and Industry Trade (DPIIT) has explained how various industries can contribute towards the toy sector;
  - (b) The Ministry of Education has been asked to look at inclusion of indigenous **toys as a major learning resource activity**, as part of the recently announced **National Education Policy**. The plan also includes developing kits for *Ek Bharat, Shreshtha Bharat*, a flagship scheme of the Ministry of Education;
  - (c) IITs will be roped in to look at the technology aspect of toys. The National Institute for Design and the National Institute for Fashion Technology will study the concept of '**Toys and National Values**'. Using non-hazardous materials and creating toys that will help in **mainstreaming children with learning disabilities** will also be a top focus;
  - (d) The Ministries of Science and Technology and IT will look at how 'India's indigenous games can be featured in the digital space and creating a digital repository archiving description of history', while the Ministry of Culture could work on an '**Indian Toy Museum**'.
- **Consolidating and Up-skilling the Unorganised Sector:** The Government is also deliberating forming **toy producer clusters** and **linking all such clusters with artisans**. The Government is also looking at addressing **skill upgrades** and **credit needs** of the toy clusters and facilitating their **engagement with foreign investors**.
- **Educating Consumers:** The Government is gradually introducing a new norm in the minds of consumers to purchase safe and good-quality 'Made in India' toys as against cheap and poor-quality imported toys. Adverts are also being gradually designed in a manner to target children and parents as influencers in building the Made in India brand loyalty.

### Challenges facing India's Toy Industry

- **Highly Fragmented:** The toy industry is still highly fragmented, dominated by local producers. 90% of the market is unorganized and 4000 toy industry units being from the MSME sector. They **lack innovation, and resources to invest** in equipment and technology. They do not have the capital to scale-up production. Supply chains are still highly fragmented.
- **Impact of Import Duties and Quality Certification:** After the duty hike, customers started to cancel orders, some held their orders back in hope that the duties will be reduced. The 200% increase in duties led to price hikes, making toys more expensive. Quality Certification has increased **challenges for traditional craftsmen**. They cannot afford to get these certifications. It is better for the Government to step in and club units or allow distributors to get the certification.
- **Labour Laws:** Toy making is labour intensive. The life of a toy is limited. For instance, a 'Transformers' Toy sells well when the movie releases and the off-take dies down soon after. Therefore, the demand for a product changes rapidly and **each toy requires a different skillset**. These factors not only **rule out mechanisation**, but also **call for flexible staffing**. Indian laws do not permit recruitment or retrenchment based on demand if the organisation grows beyond a certain size in terms of employee strength. Hence, most units in the toy sector are very small and no major corporates have forayed into the industry despite the low capital investment needs.
- **Foreign Dependence for Sourcing Raw Materials:** Indian manufacturers specialise in board games, soft and plastic toys and puzzles etc. Companies have to import materials from South Korea and Japan to manufacture these toys.
- **Fall in Free Trade amidst Geopolitical Uncertainties:** Many economies are imposing restrictions on free trade to boost their local economies. The US government is taking a more protectionist stance and



renegotiating many trade agreements, including NAFTA (North America Free Trade Agreement) and increasing tariffs on Chinese manufactured goods. These changes could set off a wider trade war, reversing the recent trend towards greater global free trade. For example, according to a report by the International Monetary Fund, rise in trade barriers could increase import prices by 10% and decrease exports by 15% during the forecast period, affecting growth of the toy manufacturing market, which relies on easy and cheap movement of goods between countries.

#### Way forward:

- **First**, In order to stimulate growth in the domestic toy industry, it is necessary to devise a specific manufacturing policy for toys.
- **Second**, To become a major player in the global toy manufacturing industry, reducing the amount of imported toys may not be the best way to move forward. Instead, the Government should focus on enhancing India's reputation as a reliable location for the production of high-quality toys.
- **Third**, To foster an environment that is more conducive to healthy competition, the Government should:
  - (a) Assist the industry in the formation of additional clusters;
  - (b) Offer export subsidies and production-linked incentives for the manufacture of their products;
  - (c) Ensure that toys are included in India's Free Trade Agreements (FTAs). Support from the Central Government in the form of Incentives, as well as Inputs on the Upgrading of Technology, can go a long way towards assisting in the rapid growth of the domestic toy industry.
- **Fourth**, Re-skilling the 7 million artisans in the country to help them meet the evolving demands of the industry while framing labour laws and regulations that protect workers' rights can also help reap rich dividends.
- **Fifth**, there is a shift towards intelligent toys and video games, away from traditional wooden/plastic toys. Domestic toy manufacturers should tap into India's expertise in information technology to offer games that capture the imagination of the children. The Prime Minister has also asked the start-ups to help achieve this transformation.

#### Conclusion

- The success of India's toy industry in the last few years shows that focused interventions by the Government can help a great deal in creating conducive manufacturing ecosystem. Measures facilitating exports help in reducing dependence on imports and save valuable foreign exchange. This can help in achieving the vision of Atmanirbhar Bharat. The Government should adopt this approach to achieve self-sufficiency in critical sectors like EVs, batteries, Semiconductor Manufacturing etc.

## CHANGES TO THE INSOLVENCY AND BANKRUPTCY CODE (IBC)

### Context

- Recently, the Ministry of Corporate Affairs MCA proposed a broad range of **changes to the Insolvency and Bankruptcy Code (IBC)**.

### Key Proposed Changes

- **Empowering National Company Law Tribunal:**
  - The ministry has proposed to empower the National Company Law Tribunal (NCLT) to slap hefty fines on those that contravene IBC rules.
  - NCLT's discretion has been increased in the new measures, so focus will be on strengthening NCLT for effective implementation.
- **Fast-tracking the Process:**
  - It has also explicitly clarified that the adjudicating authority must admit an insolvency case if the default is established and need not get into other specifics like the reason for the default, etc, which was delaying the admission of applications.
- **Electronic Platform Minimal Human Interface:**
  - The ministry has suggested developing a state-of-the-art electronic platform that can handle several processes under the Code with minimum human interface.

- This e-platform may provide for a case management system, automated processes to file applications with the Adjudicating Authority (AA), delivery of notices, enabling interaction of IPs (Insolvency Professionals) with stakeholders, storage of records of CDs (Corporate Debtors) undergoing the process, and incentivising participation of other market players in the IBC ecosystem.
- **Recasting Liquidation Process:**
  - The liquidation process is also sought to be made more open, flexible and equitable to provide comfort to the creditors
- **Redesigning the Fast-Track Corporate Insolvency Resolution Process (FIRP):**
  - The ministry has also proposed redesigning the Fast-Track Corporate Insolvency Resolution Process (FIRP) to allow financial creditors to drive the insolvency resolution process for a CD outside of the judicial process while retaining some involvement of the Adjudicating Authority (AA) to improve the legal certainty of the final outcome.
  - Further, the resolution plan approved through this procedure will have the same sanctity as a regular plan approved during the CIRP (Corporate Insolvency Resolution Process).
- **Special framework for real estate:**
  - The ministry has pitched for a special framework for real estate to limit bankruptcy proceedings to only insolvent projects.
- **Transfer of the Ownership:**
  - Another proposal is to enable a resolution professional to transfer the ownership and possession of a plot, apartment or building to the allottees with the consent of the CoC (Committee of Creditors).
- **Multiple Resolution Plans:**
  - It will allow multiple resolution plans for a single stressed firm (in all sectors).
  - The ministry proposed a change in the mechanism to distribute resolution proceeds.
- **New Waterfall Mechanism:**
  - The MCA has proposed a new waterfall mechanism under which creditors will receive proceeds up to the stressed firm's liquidation value in the order of priority already stipulated (secured financial creditors gets precedence over usually unsecured operational creditors).
  - But any surplus over such liquidation value will be proportionately distributed among all creditors in the ratio of their unsatisfied claims.
- **Extension of Insolvency Framework:**
  - It extended the so-called pre-packaged insolvency framework—meant for only MSMEs—to larger entities.

### Significance of Changes

- The changes will **streamline** various processes and procedures by the **introduction of technology** and bringing out clarity in relevant clauses to **ensure smoother implementation**.
- It will help **cut delays** in the resolution process.
- It will **prevent erosion** of stressed asset value, somewhat discipline errant stakeholders.
- The recommendations on **prepack and out-of-court resolution** (fast track resolution) with optional moratorium and NCLT sanction will take India **closer to overseas prepack regimes**.

### Conclusion

- Based on the past hurdles faced in various provisions and clauses, the **ground level issues** have been identified and proposed to be **rectified step by step**.
- Such recommendations, once implemented properly, would result in **effective resolution of insolvency**.
- However, insolvency regulator Insolvency and Bankruptcy Board of India (IBBI) should be conscious that these recommendations **should not pave way for further litigations**, which will stall the entire process of resolution.

## THE MORAL AND INTELLECTUAL CRISES IN ECONOMIC POLICIES

### **Context:**

- **Davos** and **Delhi** have framed the moral and intellectual crises affecting Indian economic policies.

- **Chairman of Tata Sons in the World Economic Forum said:** The three things most important are **growth, growth, and growth.**”

#### **Background of Indian Economy:**

##### ● **After Independence India’s strategy of development comprised four elements:**

- Raising the savings and investment rate
- Dominance of state intervention
- Import substitution
- Domestic manufacture of capital goods

#### **Reason for Economic reforms of 1990-91:**

- Economic crisis of 1990-91.
- Model India had chosen was not delivering.

#### **Moral crisis in employment:**

- **Cover up the declining employment** elasticity of India’s shining growth.
- **Job creation** has not kept pace with the demand for jobs.
- **Most jobs** hardly pay enough and have no social security.
- **The Indian economy** is not generating enough good jobs.
- **Organized manufacturing and service sectors** are also employing fewer people per unit of capital in order to improve their own labor productivity.

#### **Solution:**

- **Productivity of the agriculture sector** must be improved by using more capital-intensive methods
- **Moving people out of agriculture** and rural areas, into cities and into manufacturing and modern services (such as **information technology**).

#### **Problem of Indian economy:**

- **Large size of its “informal” sector** and the small scale of its enterprises.

#### **What is the current global scenario?**

- **Innovations in business models** are changing the forms of large enterprises and creating more informality of employment.
- **Employment in the formal sector** is also becoming informal with outsourcing, contract employment, and gig work.
- **Concepts of “economies of scale”** are changing to “economies of scope
- **Enterprise forms** from concentrated to dispersed units.

#### **Problems in employment policies:**

- **India’s formal sector** cannot create enough good jobs.
- **Too few Indian women** venture out of their homes to earn money.

#### **Role of Indian women:**

- **More Indian women have been working** outside their homes to earn money
- **Women have worked in large numbers** on farms, as caregivers and domestic workers in others’ homes, as municipal sweepers, and weavers and producers of handicrafts in small enterprises.
- **They are employed as teachers and as Anganwadi** and ASHAs (Accredited Social Health Activists) providing essential services to communities.

#### **Issues:**



- **The essential services that women provide to society** (including mothering and family care) are not considered productive work for the economy.
- **Their work is not valued** and they are paid too little.
- **They are being pulled into the** limited jobs the formal economy offers to increase GDP.

#### Way Forward

- **Pushing more women into the formal economy** will improve the “female participation rate” in the formal economy and may add to GDP too.
- **Young men need jobs:** As increasing numbers of young and underemployed males are leading to more crime and violence, and sexual assaults of women in Indian cities.
- **Capitalism needs to reinvent itself:** The paradigm of “growth, growth, growth” treats human society and nature as a means to its goals of producing more wealth for investors and more GDP.
  - Human work and intelligence are commodities for producing value for investors in capitalist enterprises.
  - The state must take care of its citizens.
- **India’s leaders must find a path to reach “poorna swaraj”** — social, political, and economic freedoms — for all Indians.
- **Economic growth must create equal opportunities** for all to learn and earn with dignity and not harm the natural environment that sustains all life.
- **A new paradigm of economic science and policy is required**, the development of which has become essential for humanity’s survival in this millennium.
- India should lead the way in the G-20 and beyond.

#### NATIONAL IPR POLICY

- Since the inception of the **National Intellectual Property Rights (IPR) Policy**, both the IPR ecosystem in this country has witnessed many changes. However, it appears that the patent establishment of the country overdrive to prove its patent-friendliness, rather patentee-friendliness.
- As per the structural and legislative changes in the IPR, the **dissolution of the Intellectual Property Appellate Board (IPAB)** took place in 2021 and **dedicated IP divisions were established in the Delhi High Court to address the issues.**

#### What is the National IPR Policy?

- **About:**
  - The **Department for Promotion of Industry and Internal Trade (DPIIT)** under the Ministry of Commerce **adopted the National Intellectual Property Rights (IPR) Policy in 2016.**
    - The main goal of the policy is **"Creative India; Innovative India"**.
  - The **policy covers all forms of IP**, seeks to create synergies between them and other agencies, and **sets up an institutional mechanism for implementation and review.**
  - **DPIIT is the nodal department for IPR development in India** and the **Cell for IPR Promotion & Management (CIPAM)** under DPIIT is the **single point of reference** for implementing the policy.
  - India's IPR regime complies with **World Trade Organisation's (WTO)** agreement on **Trade Related Aspects of Intellectual Property (TRIPS).**
- **Objectives:**
  - **IPR Awareness:** Outreach and promotion are important to create public awareness about the economic, social and cultural benefits of IPRs among all sections of society.
  - **Generation of IPRs:** To stimulate the generation of IPRs.
  - **Legal and Legislative Framework:** To have strong and effective IPR laws, which balance the interests of rights owners with larger public interest.
  - **Administration and Management:** To modernise and strengthen service-oriented IPR administration.
  - **Commercialisation of IPRs:** Get value for IPRs through commercialisation.
  - **Enforcement and Adjudication:** To strengthen the enforcement and adjudicatory mechanisms for combating IPR infringements.

- **Human Capital Development:** To strengthen and expand human resources, institutions and capacities for teaching, training, research and skill building in IPRs.
- **Need for IPR:**
  - **Encourages Innovation:**
    - The legal protection of new creations encourages the commitment of additional resources for further innovation.
  - **Economic Growth:**
    - The promotion and protection of intellectual property spurs **economic growth**, creates new jobs and industries, and enhances the quality and enjoyment of life.
  - **Safeguard the Rights of Creators:**
    - IPR is required to safeguard creators and other producers of their intellectual commodity, goods and services by granting them certain time-limited rights to control the use made of the manufactured goods.
  - **Ease of Doing Business:**
    - It promotes innovation and creativity and ensures ease of doing business.
  - **Transfer of Technology:**
    - It facilitates the transfer of technology in the form of foreign direct investment, joint ventures and licensing.

#### What are the Treaties and Conventions related to IPR?

- **Global:**
  - India is a member of the WTO and committed to the Agreement on TRIPS Agreement.
  - India is also a member of WIPO, a **body responsible for the promotion of the protection of intellectual property rights** throughout the world.
  - **India is also a member of the following important WIPO-administered International Treaties and Conventions relating to IPRs:**
    - Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure
    - Paris Convention for the Protection of Industrial Property
    - Convention Establishing the World Intellectual Property Organization
    - Berne Convention for the Protection of Literary and Artistic Works
    - **Patent Cooperation Treaty**
- **National:**
  - **Indian Patent Act 1970:**
    - This principal law for patenting system in India came into force in the year 1972. **It replaced the Indian Patents and Designs Act 1911.**
    - **The Act was amended by the Patents (Amendment) Act, 2005**, wherein product patent was extended to all fields of technology including food, drugs, chemicals and microorganisms.

#### What are the Issues Related to IPR Regime?

- **Patent-Friendliness Over Public Health:** The National IPR Policy recognizes the contribution of the Indian pharmaceutical sector in providing affordable medicines globally. However, India's patent establishment has prioritized **patent-friendliness over public health and national interest in the pharmaceutical sector.**
- **Data Exclusivity:** Foreign investors and **Multi-National Corporations (MNCs)** allege that Indian law does not protect against unfair commercial use of test data or other data submitted to the government during the application for market approval of pharmaceutical or agro-chemical products. **For this, they demand a data exclusivity law.**
- **Resulting in Anti-Competitive Market:** The **Patents Act has four stakeholders:** society, government, patentees, and their competitors, and interpreting and enforcing the act to only benefit patentees undermines the rights of other stakeholders and leads to anti-competitive market outcomes.

#### Conclusion

- It is not sufficient to just promote a pro-IPR environment to attract investment. The promotion of IPR should be balanced with the national interest and public health obligations. "Make in India" **should not compromise "Atmanirbhar Bharat", and the latter should take priority.**

## TOURISM

### WORKING HAND IN HAND TO SHOWCASE INDIA

#### Context:

- On **National Tourism Day (January 25)** the **Ministry of Railways**, in partnership with the **Ministry of Tourism**, is launching its **Jagannath Yatra train package**.

#### Tourism:

- India ranks **6th** according to the **World Travel and Tourism Council** in terms of Travel & Tourism total contribution to **GDP in 2021**.
- India is currently ranked **54th** in **World Economic Forum's Travel & Tourism Development Index (2021)**.
- **India** has **40** sites listed on the **UNESCO World Heritage List** (32 cultural, 7 natural, and 1 mixed) as of 2021.
- **Dholavira** and **Ramappa Temple** are the latest ones.

#### Jagannath Yatra train package:

- It is an **eight-day tour** that begins from **Delhi**, traverses Kashi and other places and ends at the **Vishnupad temple in Gaya**.
- It is launched by the **Ministry of Railways**, in partnership with the **Ministry of Tourism**.
- This is linked to using **Bharat Gaurav Trains (or theme-based tourist circuit trains)**: To highlight India's rich cultural heritage and history.

#### Promotion of India's tourism by Government:

- **The Ministry of Tourism has prioritized** the task of inter-ministerial cooperation and coordination, breaking down silos and working together effectively with other Ministries.
- **The Ministry of Tourism coordinates** with over **20 central government Ministries** in the promotion and the development of tourism in the country.
- **The Ministry of Tourism and the Ministry of Home Affairs** organized the **National Conference on Tourist Police**.
  - To develop **tourist specific policing**
  - **Aim:** working with the police and sensitizing them on addressing the needs of foreign and domestic tourists.
- **With The Ministry of Education:** Tourism Ministry has begun establishing '**Yuva Tourism**' clubs to nurture young ambassadors of Indian tourism.
- **The Ministry of Ports, Shipping and Waterways** is aiming to make India an attractive cruise tourism destination using state-of-the-art infrastructure.
- **In partnership with the Ministry of External Affairs:** tourism officers have been placed in **20 Indian missions** in countries that contribute to some of the highest foreign tourist arrivals in India.
  - **Role:**
    - Facilitating and providing inputs for country-specific sensibilities and having them reflected in tourism products.
  - **With the Ministry of Roadways and the Petroleum Ministry:** steps are being taken to ensure that highways and fuel stations have clean sanitation infrastructure.
  - **The Ministry of Tourism is funding** several commercial flight routes in partnership with the Ministry of Civil Aviation, making them viable.

#### Tourism policy:

- **To promote investment in the tourism sector:** granting of industry status to the sector, along with formally granting infrastructure status to hotels.
- **Five key areas would be given significant focus in the next 10 years:**
  - Green tourism



- Digital tourism
- Destination management
- Skilling the hospitality sector
- Supporting tourism-related Micro, Small and Medium Enterprises (MSMEs).
- Relief Measures and Taxation Breaks
- **It doesn't deal with specific operational issues**, but offers framework conditions to help the sector, especially in the wake of the pandemic.

#### **Recent Initiatives Related to Tourism in India:**

- Swadesh Darshan Scheme
- Draft National Tourism Policy 2022
- Dekho Apna Desh Initiative
- National Green Tourism Mission

#### **Way Forward**

- **The new draft National Tourism Policy 2022** has been formulated after situational analysis including the impact of COVID-19 and taking into account future projections for the tourism sector with a vision for **India@100**.
- **G-20 presidency**: Every delegate or visitor who is in India to attend the G-20 summit will return as a brand ambassador and spread the word on India's rich cultural, spiritual and natural heritage.
- **The Ministry of Tourism declaration of "Visit India Year 2023"** aims to promote various tourism products and destinations to increase India's share in the global tourism market.
- **Domestic tourism has recovered to pre-pandemic levels**, even exceeding it in some cases.
  - **Jammu and Kashmir**: record **84(one point eight four)crore** domestic tourists visiting in 2022.
- **For centuries many great foreign travelers have visited India** and shared their experiences in the form of memoirs, travelogs, poetry and books, as **Megasthenes, Hiuen-Tsang, Marco Polo, and Fa-Hien** have shown.
- **As the birthplace to four major world religions**, i.e., Hinduism, Buddhism, Sikhism and Jainism
- India can truly claim to be the world's spiritual beacon.

## AGRICULTURE

### INTERNATIONAL YEAR OF MILLETS

#### Why in News?

- India has shared the vision to make **International Year of Millets 2023** a 'People's Movement' alongside positioning **India as the 'Global Hub for Millets'**.

#### What is International Year of Millets?

##### • About:

- India's proposal to observe an International Year of Millets in 2023 was approved by the **Food and Agriculture Organisation (FAO)** in 2018 and the **United Nations General Assembly** has declared the year 2023 as the International Year of Millets.
- This was adopted by a United Nations Resolution for which India took the lead and was supported by over 70 nations.

##### • Objectives:

- Awareness of the contribution of millet to **Food Security** and nutrition.
- Inspire stakeholders to improve sustainable production and quality of millets.
- Focus on enhanced investment in research and development and extension services to achieve the other two aims.

#### What is Millet?

##### • About:

- Millet is a **collective term referring to a number of small-seeded annual grasses** that are cultivated as grain crops, primarily on marginal lands in dry areas in temperate, **subtropical and tropical regions**.
- Some of the common millets available in India are Ragi (Finger millet), Jowar (Sorghum), Sama (Little millet), Bajra (Pearl millet), and Variga (Proso millet).
  - The earliest evidence for these grains has been found in **Indus civilization** and was one of the first plants domesticated for food.
- It is **grown in about 131 countries** and is the traditional food for around 60 crore people in Asia & Africa.
- India is the largest producer of millet in the world.
  - It **accounts for 20 % of global production** and 80% of Asia's production.

##### • Global Distribution:

- **India, Nigeria and China are the largest producers of millets** in the world, accounting for more than **55% of the global production**.
- For many years, **India was a major producer of millets**. However, in recent years, millet production has increased dramatically in Africa.

##### • Significance:

###### ○ **Nutritionally Superior:**

- **Millets are less expensive and nutritionally superior** to wheat & rice owing to their high protein, fibre, vitamins and minerals like iron content.
- **Millets are also rich in calcium and magnesium**. For example, Ragi is known to have the highest calcium content among all the food grains.
- **Millets can provide nutritional security** and act as a shield against nutritional deficiency, especially among children and women. Its high iron content can fight high prevalence of anaemia in India women of reproductive age and infants.

###### ○ **Gluten-free a low Glycemic Index:**

- Millets can help tackle lifestyle problems and health challenges such as obesity and diabetes as they are gluten-free and have a low glycemic index (a relative ranking of carbohydrate in foods according to how they affect blood glucose levels).

###### ○ **Super Crop at Growing:**

- Millets are **Photo-insensitive** (do not require a specific photoperiod for flowering) & **resilient to climate change**. Millets can grow on poor soils with little or no external inputs.
- Millets are **less water consuming** and are capable of growing under drought conditions, under non-irrigated conditions even in very low rainfall regimes.
- Millets have **low carbon and water footprint** (rice plants need at least 3 times more water to grow in comparison to millets).

#### What are the Related Initiatives Taken by the Government?

- **Initiative for Nutritional Security through Intensive Millet Promotion (INSIMP)**
- **Increase in Minimum Support Price (MSP):** The government has hiked the Minimum Support Price of Millets, which came as a big price incentive for farmers.
  - Further, to provide a steady market for the produce, the government has included millets in the public distribution system.
  - **Input Support:** The government has introduced provision of seed kits and inputs to farmers, building value chains through Farmer Producer Organisations and supporting the marketability of millets.

### HONEY MISSION AND SWEET REVOLUTION

#### Why in News?

- Under the **Honey Mission**, **1 lakh and 75 thousand bee boxes have been distributed so far by the Khadi and Village Industries Commission (KVIC)** after providing **beekeeping training to 17 thousand 500 beneficiaries** across the country.
- As per the National Horticulture Board (NHB), **Uttar Pradesh, West Bengal, Punjab, Bihar, Rajasthan, Himachal Pradesh, Haryana, Uttarakhand, Madhya Pradesh and Karnataka** were the **top ten honey-producing states in 2021-22**.

#### What is Honey Mission?

- It was **launched in 2017** in line with the **'Sweet Revolution'**.
- Under the mission, the **KVIC under Ministry of Micro, Small and Medium Enterprises provides the farmers or beekeepers –**
  - Practical training about the examination of honeybee colonies,
  - Identification and management of bee enemies and diseases along with the management of bee colonies in all seasons.
  - Acquaintance with apicultural equipment's and
  - Honey extraction and wax purification.

#### What is Sweet Revolution?

- **About:**
  - It is an ambitious initiative of the Government of India for **promoting apiculture, popularly known as 'beekeeping'**.
    - To provide a **booster shot to Sweet Revolution**, the government launched the **National Beekeeping and Honey Mission in 2020** (a central sector scheme under the **Ministry of Agriculture and Farmers Welfare**) as part of the **AtmaNirbhar Bharat** scheme.
- **Aim:**
  - It aims to **accelerate the production of quality honey** and other related products.
    - The demand for good quality honey has grown over the years as it is considered a naturally nutritious product.
    - Other apiculture products such as **royal jelly, beeswax, pollens, etc., are also used extensively in different sectors** like pharmaceuticals, food, beverage, beauty, and others.
- **Significance:**
  - Technology intervention through this mission will ensure **bee conservation, prevent diseases or the loss of bee colonies and provide quality and quantity of apiculture products**.
    - Farming practices will yield **superior-quality honey and other products for the domestic as well as international market**.
  - Beekeeping is a **low investment and highly skilled enterprise model**, in which technology application has emerged as a great enabler for socio-economic growth.



- **Scaling up beekeeping will double farmers' income, generate employment, ensure food security and bee conservation**, and increase crop productivity.

#### What is KVIC?

- KVIC is a **statutory body** established under the **Khadi and Village Industries Commission Act, 1956**.
- The KVIC is charged with the **planning, promotion, organisation and implementation of programmes** for the development of Khadi and other village industries in the rural areas in coordination with other agencies engaged in rural development wherever necessary.
- It functions under the **Ministry of Micro, Small and Medium Enterprises**.

#### Question For Practice

**Q.** Assess the role of National Horticulture Mission (NHM) in boosting the production, productivity and income of horticulture farms. How far has it succeeded in increasing the income of farmers?

### PALM OIL IMPORTS

#### Context

- According to Solvent Extractor's Association (SEA) of India, a sharp rise in the import of refined, bleached and deodorized (RBD) palm oil is hurting the domestic oil refining industry.

#### Reasons for the rise in imports of RBD palm oil

- **Import duty difference** of only 7.5% between CPO (crude palm oil) and refined oil, encouraging the import of refined oil as compared to the CPO.
- **Cutthroat competition:** Malaysian and Indonesian exporters of RBD palm oil enjoy advantage (taxes) of \$60 over CPO and hence they discount palmolein benefiting their refiners.

#### Consequences of the rise in imports of RBD palm oil

- **Low capacity utilization** (30% now versus 60-70% in 2020) of the Indian refining industry. For e.g. Utilization of only 18 million tonnes as against the capacity of 38-40 million tonnes.
- **Losses:** The refining industry will be suffering losses of Rs. 6000 per tonne on importing crude palm oil and converting it into refined palmolein.
- **Contrary to the objective of self-reliance:** PM's clarion call of atma nirbhar and value addition within the country is threatened due to rising imports.
- **Harm Make in India:** Sustained import trends may cause transformation of the Indian refining industry into mere packers rather than producers and refiners.
- **Compromising heavy investments** made in the domestic refining sector for capacity enhancement and possibility of rising Non Performing Assets (NPAs) in the sector.
- **Threaten oil seeds farmers:** After a long time, domestic oilseeds have started selling above minimum support price (MSP) and improved farm incomes. Continued rising imports of RBD might reverse these gains.
- **Edible oil inflation**

#### About Palm Oil

- **Nature:** Palm oil is also known as palm fruit oil. Palm oil is produced from the fruit of the oil palm tree (Scientific name: *Elaeis guineensis*).

#### Importance:

- **Production:** It may have now surpassed soybean oil as the most widely produced vegetable oil in the world.
- **Refining:** Palm oil is physically refined without the use of chemical solvents, thereby reducing the risk of residue contamination.
- **Nutritional value:** Virgin palm oil is rich in carotenoids (pro Vitamin A), tocotrienols and tocopherols (Vitamin E).
- **Health benefits:** Since it is a vegetable oil; not an animal or dairy product, therefore it does not contain cholesterol. It also does not contain trans fatty acids.

- **Value as a natural resource:** Oil palm is the only fruit that can give two types of oil-palm oil and palm kernel oil.

#### **Applications/Usage:**

- **Agriculture and processing:** Since its introduction, oil palm is now a leading agricultural crop. Increased planting, cultivation and refinement have led to the introduction of a wide range of processed palm oil products.
- **Food and non-food applications:** They can be used for frying media and for making margarines, shortenings, soap, oleo chemicals and other products.
- **Cooking:** It is used as cooking oil, to make margarine and is a component of many processed foods. Palm oil is one of the few vegetable oils relatively high in saturated fats (such as coconut oil) and thus semi-solid at room temperature.

#### **Issues:**

- Palm oil is a major driver of deforestation of some of the world's most biodiverse forests, destroying the habitat of already endangered species like the Orangutan, pygmy elephant and Sumatran rhino.
- More than 40 percent of potential landscapes for oil palm cultivation in India overlap with biodiversity-rich landscapes, especially in the North-East and Andaman & Nicobar Islands.

#### **National Mission on Edible Oils – Oil Palm (NMEO-OP)**

- **It is a Centrally Sponsored** Scheme with a special focus on the Northeast region and the Andaman and Nicobar Islands.
- **The Mission hopes to increase** oil palm acreage by an additional 6.5 lakh hectares by 2025-26 and grow production of crude palm oil to 11.2 lakh tonnes by 2025-26 and up to 28 lakh tonnes by 2029-30.
- The proposed scheme will subsume the current National Food Security Mission-Oil Palm programme.

#### **2 major focus areas of the Scheme**

- **The oil palm farmers produce Fresh** Fruit Bunches (FFBs) from which oil is extracted by the industry. Presently the prices of these FFBs are linked to the international Crude Palm Oil (CPO) prices fluctuations.
- **Viability Price (VP):** For the first time, the Government of India will give price assurance to the oil palm farmers for the FFBs in the form of the Viability Price (VP).

#### **Way Forward**

- Budgetary Provisions 2023-24: Increasing the duty difference between CPO and refined palmolein to at least 15%.
- Increasing refined duty from current 12.5% to 20% without any change in crude palm oil duty.
- **Restricted List:** The government can place again the import of RBD palmolein and refined palm oil under restricted list with immediate effect.

### **CARBON TRADING IN THE AGRICULTURE SECTOR**

- The agriculture sector plays a significant role in carbon trading because it has the potential to both emit and sequester carbon **the process of storing carbon in vegetation and soil**). Agricultural activities such as tilling, fertilizer use, and livestock production can release **greenhouse gas** into the atmosphere. On the other hand, practices such as **agroforestry**, conservation tillage, and soil carbon sequestration can remove carbon from the atmosphere and store it in the soil.
- India updated its **Nationally Determined Contribution (NDCs)** to the **United Nations Framework Convention on Climate Change (UNFCCC)** in August 2022. The updated NDC includes **50% cumulative electric power installed from non-fossil fuel-based energy sources** and an **additional carbon sink of 2.5-3 billion tonnes** of CO<sub>2</sub> equivalent through forest and tree cover by 2030.
- The updated NDC target also aims to reduce the emissions intensity of its **Gross Domestic Product (GDP)** by 45% from 2005 levels by the year 2030. It also talks about propagating a healthy and sustainable way of

living, including (through) a mass movement for **LiFE – ‘Lifestyle for Environment’** as a key to combating climate change.

- The **Energy Conservation (Amendment) Bill, 2022** was passed by Parliament which **mandates the exploration and use of non-fossil fuel energy sources and the creation of a national carbon market**. The Bill is also futuristic in achieving the target of net zero emission by 2070.

#### What is Carbon Trading?

- Carbon trading in the **agricultural sector refers to the buying and selling of carbon credits** that are generated by practices that reduce greenhouse gas emissions or increase carbon sequestration on farms and other agricultural lands.
  - These practices include things like conservation tillage, agroforestry, and other sustainable land management techniques.
- The concept of carbon trading in the **agricultural sector is seen as a way to provide financial incentives for farmers** to adopt environmentally friendly practices, which can help to mitigate the effects of climate change.

#### What Opportunities Carbon Trading in the Agricultural Sector Presents?

- **Additional Revenue:**
  - Participating in carbon offset projects can **provide farmers with additional revenue through the sale of carbon credits**.
- **Climate Change Mitigation:**
  - Adopting carbon abatement farming practices can **help to sequester carbon in the soil, which can contribute to the reduction of greenhouse gas emissions** and help to mitigate the effects of climate change.
- **Soil Health Improvement:**
  - Many carbon abatement farming practices, such as conservation tillage and agroforestry, **can improve soil health, which can result in increased crop yields and improved water retention**.
- **Biodiversity Conservation:**
  - Some carbon abatement farming practices, such as agroforestry, can also **help to promote biodiversity and support the survival of wild species**.
- **Sustainable Land Use:**
  - Carbon offset projects can **provide an incentive for farmers to adopt sustainable land-use practices**, which can help to conserve natural resources and reduce environmental impacts.
- **Rural Development:**
  - Carbon trading in the agricultural sector can **also promote rural development, by creating jobs and income-generating opportunities** in rural areas, and by supporting the development of small and medium-sized enterprises in the sector.

#### What are the Challenges of Trading Carbon Sequestered by Agriculture?

- **Difficulty of Accurately Measuring and Verifying Carbon Sequestration:**
  - This is due to the complex nature of the carbon cycle in soils and the difficulty of distinguishing the effects of specific farming practices from other factors such as weather and soil type.
- **Issue of Revenue:**
  - As a result of the adoption of carbon abatement practices, the expected additional revenue and the impact on crop yield must also be considered.
  - A farmer will adopt a carbon abatement practice if **he expects that revenue from the sale of carbon credits would compensate for the loss in crop yield, if any, due to its adoption**.
- **Lack of Reliable Data:**
  - There is a **lack of accurate and consistent data on carbon sequestration** by agricultural practices, making it difficult to quantify and trade carbon credits.
- **Complex Regulations:**



- The **regulatory framework for carbon trading in India is complex and not yet fully developed**, making it difficult for farmers and other stakeholders to participate in carbon markets.
- **High Transaction Costs:**
  - The **costs associated with measuring, verifying, and trading carbon credits can be high**, making it difficult for small farmers and other stakeholders to participate in carbon markets.
- **Limited Demand:**
  - There is **currently limited demand for carbon credits from the agriculture sector**, making it difficult for farmers and other stakeholders to find buyers for their credits.
- **Lack of Awareness:**
  - Many farmers and other stakeholders in India **lack awareness of the opportunities and benefits of carbon trading**, and how to participate in carbon markets.

**Way Forward:**

- **Evolving a Transparent Process of Quantification and Verification:**
  - The first step towards **creating a market for sequestered carbon is to evolve a transparent process of quantification and verification** of additional carbon generated by different farm practices.
  - It is possible to **assess the quantum of carbon sequestered using artificial intelligence and remote sensing**.
- **Facilitating Participation in Carbon Trading:**
  - In the voluntary carbon market, **selling carbon credits is a tedious process for individual farmers**.
  - Nonetheless, their participation in carbon trading **can be facilitated by collectives such as Farmer Producer Organization (FPOs), and cooperatives that can organise farmers to adopt carbon abatement practices** and sell the accrued carbon credits on their behalf.
    - A few agro-tech companies, for example, 'Boomitra' and 'Nurture. Farm', organise farmers through intermediaries to facilitate their participation in voluntary carbon markets.
- **Creating Awareness among Farming Communities:**
  - There is a **need to create awareness among farming communities on the benefits of the adoption of improved agricultural practices** and participation in carbon markets.

## DEVELOPMENT

### INDIA'S ROADMAP FOR ELECTRIC VEHICLES IN 2023

#### Context:

- India's Electric Vehicle future shines bright with ambitious government targets and advancements in technology.

#### Roadmap for Electric vehicles

- India has set an ambitious goal to **become a leader in the electric vehicle market by 2030** with the government laying out a comprehensive roadmap to achieve this goal, which includes several initiatives and policies to accelerate the adoption of electric vehicles in the country.
- One of the key initiatives is the **Faster Adoption and Manufacturing of Hybrid and Electric vehicles (FAME) scheme**, which provides subsidies to customers who purchase electric vehicles.
- The government has also set a target to **achieve 30% electric vehicle penetration** in the country by **2030**.
- In this regard, the government is also taking steps for development of **domestic manufacturing capabilities** for electric vehicles and their components.

#### Key highlights:

- Electric vehicle adoption, including four, three, and two-wheelers, and buses, **has seen a significant uptick** in recent years.
- Target of **net-zero carbon emissions** in the future will help promote the e-vehicle industry.
- Push for electric mobility will **reduce dependence on oil imports** and free up foreign exchange reserves.
- **Last-mile mobility** is a defining sector that will help carry this momentum, with partnerships with companies like Spotech Green Ventures.
- **Decisive growth in the mass-market category** of private vehicles in 2023, particularly in Tier II and III cities will promote demand.
- Faster Adoption and Manufacturing of Hybrid and Electric vehicles (FAME) scheme **extended until March 31, 2024** to provide subsidies will aid electric vehicle adoption.
- Volumes, mass adoption, and large-scale component **manufacturing will drive prices down**.

#### Various initiatives to promote e-vehicles

- **About:** In India, the government has implemented several schemes to promote the use of electric vehicles (EVs). These include:
- **FAME I & II:** Faster Adoption and Manufacturing of Hybrid and Electric Vehicles is a government scheme, which provides incentives for the purchase of EVs and the installation of charging infrastructure.
- **NEMMP:** National Electric Mobility Mission Plan was launched in 2020, which aims to have at least **30% of vehicles on Indian roads be electric by 2030**.
- **Tax benefits:** The Government has announced plans to provide an additional income tax **deduction of INR 1.5 Lakh on the interest paid on loans** taken to purchase electric vehicles.
- **PLI:** The government has announced a **Production Linked Incentive (PLI)** scheme to boost domestic manufacturing and attract global companies to invest in the Indian market.
- **NTTM:** The Government also plans to set up a **National Technical Textiles Mission (NTTM)** to promote the **use of technical textiles in various sectors, including the EV industry**.
- **Manufacturing plants:** Setting up of **battery manufacturing units** in India to promote the use of electric vehicles.
- **Public transport:** The Government has also announced plans to promote the **use of electric vehicles in the public transportation** sector, by providing financial assistance to states for the purchase of electric buses. E.g., E-buses in Delhi
- **Ensuring last-mile connectivity:** The government has also identified last-mile mobility as a key sector to drive the adoption of electric vehicles E.g., deployment of a fleet of over 5,000 vehicles in Chennai.

- **Promoting e-vehicles in government:** In an attempt to promote use of electric vehicles in the public sector, the government has plans to **replace existing government vehicles** with electric vehicles.
- **Phased Manufacturing Programme (PMP):** Indigenous manufacturing of electric vehicles, their assemblies/sub-assemblies, and parts/sub-parts/inputs of the sub-assemblies to be promoted over time through a graded duty structure.
- **National Mission on Transformative Mobility and Storage:** Government aims to **drive strategies for transformative mobility** and Phased Manufacturing Programmes for electric vehicles, electric vehicle Components and Batteries.

#### What more can be done?

- Government can devise **strategies for transformative mobility** for electric vehicles, electric vehicle Components and Batteries
- Creating a **Phased Manufacturing Program (PMP)** to localize production across the entire electric vehicle value chain.
- Coordination with key stakeholders in Ministries/ Departments/states to **integrate various initiatives** to transform mobility in India.
- Ensuring **holistic and comprehensive growth** of the **battery manufacturing industry in India** with initial focus on **large-scale module** and assembly plants on Gigascale manufacturing in future.
- Preparing roadmap for enabling India to **leverage its size and scale** to produce innovative, competitive multi-modal mobility solutions that can be deployed globally in diverse contexts

#### Conclusion

- In an attempt to leverage the potential of e-vehicles, the Indian Government needs to provide more incentives and subsidies for the purchase of EVs, invest in charging infrastructure and battery technology, and promote domestic manufacturing capabilities for electric vehicles and their components.
- Overall, electric vehicles **offer a cleaner, more efficient, and cost-effective** alternative to traditional gasoline-powered vehicles, and with the **right infrastructure and policies in place**, they can play a major role in reducing air pollution and greenhouse gas emissions while improving energy independence



## SCIENCE AND TECHNOLOGY

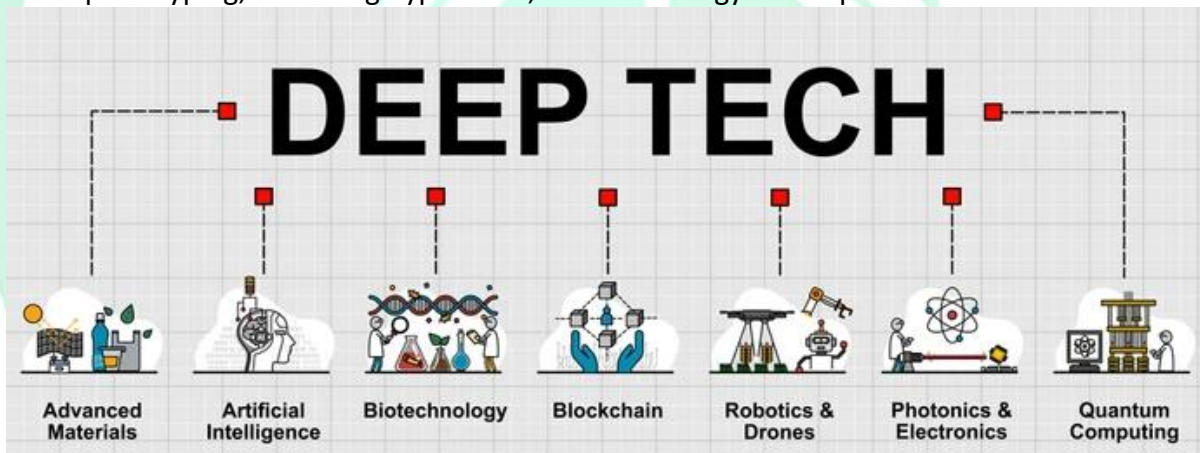
### DEEP TECH STARTUPS

#### Why in News?

- Government will launch the **Digital India Innovation Fund** to support **deep tech startups**.

#### What is Deep Tech?

- **About:**
  - Deep tech or deep technology refers to a **class of startup businesses that develop new offerings based on tangible engineering innovation** or scientific discoveries and advances.
  - Usually, such startups operate on, but are not limited to, agriculture, life sciences, chemistry, aerospace and green energy.
  - Deep tech fields like **Artificial Intelligence**, advanced materials, **blockchain**, **biotechnology**, robotics, **drones**, photonics, and **quantum computing** are moving more and more quickly from early research to market applications.
- **Characteristics of Deep Tech:**
  - **Impact:** The deep tech innovations are **very radical and disrupt an existing market or develop a new one**. Innovations based on deep tech often change lives, economies, and societies.
  - **Time & Scale:** The time required for deep technology to develop the technology and reach the market-ready maturity is way more than shallow technology development (like mobile apps and websites). It took decades for artificial intelligence to develop and it is still not perfect.
  - **Capital:** Deep tech often requires a lot of early-stage funding for research and development, prototyping, validating hypothesis, and technology development.



#### What is the State of India's Deep Tech Startups?

- India had over 3,000 deep-tech start-ups, dabbling in new-age technologies like **Artificial Intelligence**, **Machine Learning (ML)**, **Internet of Things**, Big Data, **quantum computing**, robotics, etc., at the end of 2021.
- According to **NASSCOM**, deep-tech start-ups in India raised USD 2.7 billion in venture funding in 2021, and now account for over 12% of the country's overall startup ecosystem.
- In the last decade **India's deep tech ecosystem has grown 53%** and is at par with that in developed markets like the US, China, Israel, and Europe.
  - Bengaluru accounts for 25-30% of India's deep-tech start-ups, followed by Delhi-NCR (15-20%) and Mumbai (10-12%).
- Deep-tech start-ups are making their **presence felt across sectors like drone delivery and cold chain management** to climate action and clean energy.

#### What are the Challenges Faced by Deep Tech?

- For deep-tech startups, **funding is one of the biggest challenges**. Less than 20% of startups receive financing.

- Government funds are underutilized, and domestic capital is lacking for such startups.
- **Talent and market access, research guidance, investors' understanding of deep-tech,** customer acquisition and cost for talent are the major challenges faced by them.

#### What are the Related Initiatives?

- The **Atal New India Challenge** has been launched under the **Atal Innovation Mission (AIM) of the Niti Aayog**, with an objective to serve as a platform for the promotion of Innovation Hubs, Grand Challenges, startup businesses, and other self-employment activities, particularly in technology-driven areas.
- Launched in 2021, **NASSCOM's Deep Tech Club (DTC) 2.0** is aimed at scaling the impact to over 1,000 firms that are leveraging technologies such as AI, ML, Internet of Things, robotics, and blockchain.

#### Way Forward

- **Reevaluate the Roadmaps:**
  - As the continual growth of the Indian start-up ecosystem is fueled by the ongoing era of constantly emerging new technologies, **organizations and the government would need to reevaluate their roadmaps for adopting deep tech.**
  - As technologies such as **5G, understandable artificial intelligence, quantum computing,** cloud-native technologies, cybersecurity meshes, and customer data platforms will be used in the future. There are a **number of factors that can help the booming and resilient Indian startup ecosystem become global leaders** in deep technology.
- **CSR Budget Utilization:**
  - The social sector has traditionally benefited from **Corporate Social Responsibility.** However, this growing corpus should also be used to develop strategic technologies.
  - A large corporation can be encouraged to contribute to the strategic needs of the nation with some of its budget. There is a need for the government to allow these funds to flow into certain strategic tech startups.

### YEAR-END REVIEW-2022: DEPARTMENT OF SPACE

#### Why in News?

- Recently, the **Year-End-Review of the Department of Space for the year 2022** under the Ministry of Science and Technology was released.

#### What are the Key achievements of the Department of Space?

- **Key Missions:** Altogether 44 spacecraft missions, 42 launch vehicle missions and 5 technology demonstrators, have been successfully realized, since 2014.
- **Chandrayaan-2 Mission:** In 2019, **Chandrayaan-2 was successfully launched.**
  - It is **providing valuable science data for the research community.**
- **50<sup>th</sup> PSLV Launch:**
  - The launch of PSLV-C48/ RISAT-2BR1 in Dec 2019 marked the **50<sup>th</sup> launch of PSLV,** the workhorse launch vehicle.
  - RISAT-2BR1 will keep a check on infiltration by allowing round-the-clock surveillance across the border.
- **ISRO System for Safe & Sustained Operations Management (IS4OM):**
  - In July 2022, the Ministry of science dedicated **ISRO System for Safe & Sustained Operations Management (IS4OM)** to the nation in.
  - It is a facility that is conceived with a holistic approach towards ensuring safety and sustainability while reaping the **benefits of sustainable utilization of outer space for national development.**
- **Launch Vehicle Mark (LVM) 3:**
  - LVM3 /OneWeb India-1 Mission was **successfully accomplished in October 2022.**
  - With this launch, LVM3 exemplifies **Atmanirbharata and enhances India's competitive edge in the global commercial launch** service market.

- **Integrated Main Parachute Airdrop Test (IMAT):**
  - As part of **Gaganyaan programme**, IMAT of crew module deceleration system was successfully carried out at **Babina Field Fire Range (BFFR), Jhansi, Uttar Pradesh** in November 2022.
- **Inflatable Aerodynamic Decelerator:**
  - **Indian Space Research Organisation (ISRO)** successfully demonstrated new technology with Inflatable Aerodynamic Decelerator (IAD) – a game changer with multiple applications for future missions.
  - The IAD has **huge potential in a variety of space applications like recovery of spent stages of rocket**, for landing payloads on to Mars or Venus and in making space habitat for human space flight missions.
- **PSLV-C54:**
  - **PSLV-C54 successfully launched** EOS-06 satellite in November 2022 along with **Eight Nano-satellites including INDIA-BHUTAN SAT (INS-2B)**.
  - The launch of the new satellite is part of India's efforts to back Bhutanese King Jigme Khesar Namgyel Wangchuck's plans to use advanced technology, including ICT and space technology, for the development of Bhutan.

#### **Academic Support, Capacity building and Outreach:**

- **Space Technology Incubation Centers (STIC):**
  - In order to boost the space research activities, STIC have been established, since 2018.
  - Under this initiative, **nine Space Technology Cells (STC), Six STIC and Six Regional Academic Centre for Space (RACS) are operational.**
- **Satish Dhawan Centre for Space Sciences:**
  - Recently, Satish Dhawan Centre for Space Sciences was jointly established by ISRO/DoS and Central University of Jammu.
- **Unispace Nanosatellite Assembly & Training by ISRO:**
  - In June 2018, India announced a capacity building training programme **UNNATI (UNispace Nanosatellite Assembly & Training by ISRO)** on Nanosatellites development through a combination of theoretical coursework and hands-on training on **Assembly, Integration and Testing (AIT)**.
- **Young Scientist Programme:**
  - In 2019, ISRO launched an annual special programme called "Young Scientist Programme" or the "**Yuva Vigyani KARYakram**" (**YUVIKA**) in line with the Government's vision "**Jai Vigyan, Jai Anusandhan**".
  - The Program is primarily aimed at imparting basic knowledge on Space Technology, Space Science and Space Applications **to the young talents with the intent of encouraging them in the fascinating domain of outer space.**
- **SpaceTech Innovation Network (SpIN):**
  - ISRO and Social Alpha signed an MoU in December 2022 to launch SpaceTech Innovation Network (SpIN), India's first **dedicated platform for innovation curation and venture development** for the burgeoning space entrepreneurial ecosystem.

#### **Reforms and Enhanced Participation of Industries:**

- **NewSpace India Limited (NSIL):**
  - In 2019, the NSIL got incorporated as a **wholly owned Government of India Undertaking/ Central Public Sector Enterprise (CPSE)**.
  - It was aimed at enabling **Indian Industries to scale up high-technology manufacturing base for space programme** and to commercially exploit the products and services emanating from the Indian Space Programme for meeting the domestic and global customer needs.
  - **GSAT-24 communication satellite** which is the first demand driven mission of NSIL was launched from Kourou, French Guiana, in June 2022.
- **IN-SPACe:**



- IN-SPACE was launched to provide a level playing field for private companies to use Indian space infrastructure.
- It acts as a single-point interface between ISRO, and everyone who wants to participate in space-related activities or use India's space resources.
- **Indian Space Association (ISpA):**
  - ISpA aspires to be the collective voice of the Indian Space industry. ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.
- **First Private Launchpad & Mission Control Center:**
  - First private launchpad & mission control center established by M/s Agnikul Cosmos Pvt. Ltd., Chennai in ISRO campus at SDSC, SHAR in November 2022.
- **Indian Space Policy – 2022:**
  - Indian Space Policy – 2022 policy is cleared by the Space Commission. The Policy has undergone extensive deliberations with industry groups, inter-ministerial consultations, has been reviewed by Empowered Technology Group and is under further approval process.
- **Disaster Management:**
  - **Monitoring flood inundation**, generation of flood hazard zonation atlases of flood prone states, developing flood early warning models, multiple daily detections & dissemination of active forest fires, forecasting cyclone track; intensity & landfall, **damage assessment due to earthquakes and landslides, etc. were carried out.**
- **Covid-19 Related Supports:**
  - During the Covid-19 pandemic period, devices like **Mechanical Ventilator & Medical Oxygen Concentrator** were developed and the technologies are transferred to Indian industries.

### Question For Practice

Q.1 What is India's plan to have its own space station and how will it benefit our space programme?

Q.2 Discuss India's achievements in the field of Space Science and Technology. How the application of this technology helped India in its socio-economic development?

## THE FUTURE OF METAVERSE AND AI

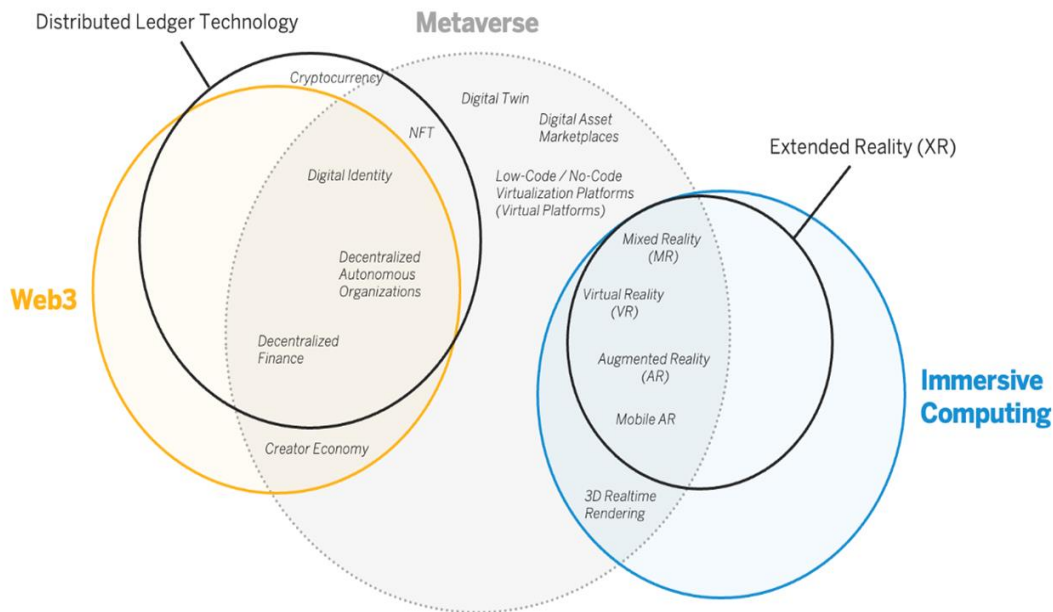
### Why in News?

- The year 2022 was not the best for tech firms, yet we may innovative technologies emerge in future related to **Metaverse** and **AI (Artificial Intelligence)**, which may raise concerns and present Opportunities.
- The year 2022 saw **a lot of the shift in demand during and post the Covid-induced lockdowns.**
- The year 2022 ended with near **mayhem across most Silicon Valley companies**, especially those in the Internet business.

### What will be the Future Challenges and Opportunities of Meta-AI?

- **More Pervasive AI:**
  - **ChatGPT** has shown the world that **conversational artificial intelligence is an idea whose time has come.**
  - The ChatGPT can answer "follow-up questions", and can also "admit its mistakes, challenge incorrect premises, and reject inappropriate requests." but most such AI elements are now in standalone products, which is more play than work.
  - In 2023, this intelligence will be seen coming into **more products that we use every day** —for instance Gmail that will not just auto-suggest but also write next mail to the boss.
- **Beyond Social Media:**
  - Twitter and **Facebook are struggling to remain relevant amid** an increasingly younger and digital native audience. Their concepts of social engagement are very **different, often sans text and notice-board behaviors.**
  - Meta, for instance, knows that it will have to **think beyond its present social media platforms** and wants to be the social link when users move to the Metaverse, if at all.

- But that might not be something that will shift soon. Till then, there seems to be a vacuum emerging in the social media space, **for now plugged by users sticking to short videos**. But that fad too shall pass and not all platforms are good in that segment.
- **More Regional, Darker Social Bubbles:**
  - As the Internet spreads to new users, especially in countries like India, it is also becoming more localized and multilingual.
  - Across the world, the English language internet seems to have plateaued, making platforms like **Google focus more on opportunities to serve smaller, regional languages**.
  - This is a tech challenge in more ways than one, but also **presents an opportunity to test out new technologies that can convert the content of the internet for these new users** without much human intervention.



- **Future of Metaverse:**
  - As hybrid workforces become the norm and with travel still not as easy as earlier, **extended reality (XR)** could become the answer to collaborate and communicate virtually.
    - XR is an emerging umbrella term **for all the immersive technologies, including augmented reality (AR), virtual reality (VR), and mixed reality (MR)** plus those that are still to be created.
    - All immersive technologies extend the reality we experience by either blending the virtual and “real” worlds or by creating a fully immersive experience.
  - Since the headsets and other paraphernalia to facilitate these virtual interactions are still very expensive, it **might be up to companies to make these available to their employees for regular XR meetings**. The first experience of this could end up looking like an upgraded version of video conferencing, but with the ability to interact with objects in the virtual space.
  - A few more commercial versions of the Metaverse is expected to be accessible to regular users during the year. However, the **challenge will be with the hardware that lets people access these virtual worlds without making people bankrupt in the real world**. The big disruptor could be an affordable device that logs users into the Metaverse easily — maybe it will just be a smartphone.

#### What are the Ethical Concerns related to AI?

- The legal and ethical issues **that confront society due to AI include privacy and surveillance**, bias or discrimination, and potentially the philosophical challenge is the role of human judgment. Concerns about newer digital technologies becoming a new source of inaccuracy and data breaches have arisen as a result of its use.

- The other side of this technological revolution is a growing apprehension on the **socio-political and economic implications of AI**, specifically, the concerns about co-existence of these emerging technologies and core principles of modern democracies.
- Consequently, **AI ethics and the safe and responsible application of AI** are becoming front and centre of the technology revolution.
- **Constitutional morality was envisioned as the cornerstone for AI ethics' principles** in India, thus, propelling our constitutional rights and ethos to the paramount consideration for deploying AI in a responsible manner.

#### What are the Principles of a Responsible AI?

- **Safety and Reliability:** AI systems must ensure **reliability regarding their intended functions** and must have **built-in safeguards** to ensure the **safety of stakeholders**.
- **Equality:** AI systems must be built keeping in mind that **similar people in similar circumstances are treated equally**.
- **Inclusivity and Non-Discrimination:** AI systems must be developed to be inclusive of all stakeholders, and must not discriminate through bias between stakeholders on religion, race, caste, sex, descent, place of birth or residence in matters of education, employment, access to public spaces etc.
- **Privacy and Security:** AI systems must ensure that the **personal data of data subjects must be safe** and secure, such that **only authorised persons must access personal data** for specified and necessary purposes, within a framework of sufficient safeguards to ensure this process.
- **Principle of Transparency:** The design and training of AI systems is key for its functioning. The **system must be audited and be capable of external scrutiny** to ensure that the **deployment of the AI system is impartial**, accountable and free from bias or inaccuracies.
- **Principle of Accountability:** Since there are various actors in the process of developing, deploying and operationalizing an AI system, the **accountability structures for any effects, harms or damages** by the AI system **must be clearly set out in a publicly accessible and understandable manner**.
- **Protection and Reinforcement of Positive Human Values:** This principle focuses on the **possible deleterious effects of AI systems** through collection of personal data for profiling, the **use of AI systems in manners contrary to fundamental rights** guaranteed by the Constitution of India.

## UNMANNED COMBAT SYSTEMS AND CONCERNS

### Why in News?

- India is on a drive to induct **Unmanned Combat Systems (UCS)** into the military. In August, 2022 it inducted "Swarm Drones" into its mechanized forces, reiterating the importance of autonomous systems in creating a "future-proof" Indian Navy (IN).
- Despite their growing usage in armed conflict, artificially intelligent unmanned combat systems **raise questions of law, ethics and accountability**.

### What are Unmanned Combat Systems?

- **About:**
  - Unmanned Combat Systems (UCS) are **going to be the new age weapons overturning the rules of future war** and have been the focus of research and development of military powers.
  - There are no generally accepted definitions for these so-called boasted core weapons of the 21<sup>st</sup> century.
  - UCS from the research heading, is an **integrated combat system comprising unmanned combat platforms, task payloads, command and control (C2) systems and network systems**.
  - For **field applications, they can be categorized into,**
    - Deep space unmanned systems
    - Unmanned aerial vehicle systems
    - Ground unmanned systems
    - Surface unmanned systems
    - Underwater unmanned systems
- **Significance:**



- Faced with the increasingly complex international situation and brutal military wars, **the lives and safety of combat soldiers are greatly threatened.**
- At this time, the **unmanned combat System is becoming increasingly important** and has **gradually become an important attack and defense force** on the information battlefield.
- The biggest feature of the ground unmanned combat platform is that it can carry certain weapons and equipment under the premise of unmanned participation, and be remotely controlled through the **configured wireless communication equipment to conduct reconnaissance, surveillance, electronic interference, and direct combat.**
- UCS has a **higher degree of automation, good remote control, strong digital** communication ability and anti-interference, excellent target detection and recognition ability, good concealment, and strong adaptability to the ground environment.

#### **What are the Ethical Concerns Raised by AI Warfare?**

- **Risk of Shared Liability:**

- AI Warfare **enhances the risk of shared liability between networked systems**, particularly when **weapon algorithms are sourced from abroad**, and when the satellite and link systems that enable combat solutions are not under the control of the user.

- **Confidence Undermining:**

- AI is characterized by a predisposition to certain kinds of data. Biases in the collection of data, in the set of instructions for data analysis, and in the selection of probabilistic outcomes muddle rational decision-making, undermining confidence in automated combat solutions.

- **Inconsistent with Laws of War:**

- AI may automate weapon systems **in ways that are inconsistent with the laws of war.**

- **Cannot Make Informed Decision:**

- A system of targeting human beings based on probabilistic assessments by computers that act merely on machine-learned experiences, they contend, **is problematic because the computer neither has access to all relevant data to make an informed decision nor recognises that it needs more information** to come up with an optimal solution.
- If it erroneously used force in a theatre of conflict, there is **no one to be held accountable, as blame can't be pinned on a machine.**

#### **What are Swarm Drones?**

##### **About:**

- Swarm Drones are a **collection of small and lightweight aerial vehicles that can be controlled from the same station.**
- These drones are **equipped with advanced communication systems which enables them to be controlled** as a collective.
- Furthermore, through communication systems, **swarm drones can also communicate with each other** to create different flying formations for surveillance and attack modes.
- Such drones can also carry a variety of payloads in a single mission and organize a **collaborative attack against an enemy unit.**
- Backed by swarming algorithms and Artificial Intelligence software, **Swarm Drones can operate autonomously** with minimum human intervention
  - The AI software can also be used to **identify targets and expedite response in case of a surprise operation.**

##### **Advantages:**

- **All Weather Operations:** Swarm Drone System can be deployed at high altitudes, rough-weather conditions
- **High Speed and Agility:** Drones are powered by advanced motors and can fly at a speed of 100 km per hour giving it high speed and agility for military operations.
- **Employed for Different Missions:** Drones can be deployed by the armed forces for different types of offensive and defensive operations as they can carry out strikes against tanks, infantry combat vehicles, ammunition holding areas, fuel dumps and terror launch pads.

- **ATR Feature:** Swarm Drones are backed by Artificial Intelligence and are equipped with the Automatic Target Recognition (ATR) feature, which can enable them to automatically recognise targets. ATR is capable of identifying tanks, guns, vehicles and humans and displaying them on the operators' screen to minimize the chances of a miss hit.

### Way Forward

- All parties to an armed conflict that any use of armed drones during the conduct of hostilities must comply with relevant **IHL (International humanitarian law)** principles.
- Hence, before deploying any armed drones, parties to the conflict must ensure that the **armed drone is and can be directed against a military objective and will not cause excessive civilian harm**.
- In order to foster transparency and accountability for drone strikes, **parties need to properly articulate their policies governing the use of drones**, including how the likelihood for civilian harm is assessed, and provide for remedies for victims.
- All parties to the armed conflict that beyond compliance with IHL, **parties need to consider the humanitarian impact of their use of armed drones for the civilian population**, including the disruption of civilian infrastructure and mental health trauma.
- It is worth acknowledging that AI in warfare is not just a matter of combat effectiveness but also of warfighting ethics. AI-infused unmanned systems on the maritime battlefield **pose a degree of danger, making it incumbent upon the military to deploy its assets in ways that are consistent with national and international law**.

## ANTIMICROBIAL RESISTANCE (AMR)

### In News

- A rising trend of Antimicrobial Resistance (AMR) has been observed among patients at an Ahmedabad hospital.

### About Antimicrobial resistance (AMR)

- It is often also called antibiotic resistance.
- It occurs when bacteria, viruses, fungi, and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness, and death.
- They can spread from person to person or between people and animals, including from food of animal origin.

### Reasons

- AMR occurs naturally over time, usually through genetic changes. Antimicrobial-resistant organisms are found in people, animals, food, plants, and the environment (in water, soil, and air).
- **The main drivers of antimicrobial resistance** include the misuse and overuse of antimicrobials; lack of access to clean water, sanitation and hygiene (WASH) for both humans and animals; poor infection and disease prevention and control in healthcare facilities and farms; poor access to quality, affordable medicines, vaccines and diagnostics; lack of awareness and knowledge; and lack of enforcement of legislation.

### Concerns

- It is a global health challenge and a looming public health crisis.
- The WHO has declared it as one of the top 10 health threats facing humanity.
- AMR national action plans (NAPs) have been implemented in several surveyed economies including India for human health.
- However, the development and implementation of antimicrobial plans for animals and the environment that equally impact AMR hasn't been adequate.
- The cost of AMR to the economy is significant and it is critical to develop policies and implement them through a holistic "One Health" approach.

### Measures Taken to Rising Anti-Microbial Resistance in India

- **National programme on AMR containment** was launched during the 12th FYP in 2012-17
- **National Action Plan on Antimicrobial Resistance (NAP-AMR)** focusing on the One Health approach was launched on 19th April 2017 with the aim of involving various stakeholders ministries/departments.

- **AMR Surveillance Network:** ICMR has established the AMR surveillance and research network (AMRSN) in 2013, to generate evidence and capture trends and patterns of drug resistant infections in the country.
- **AMR Research & International Collaboration:** ICMR has taken initiatives to develop new drugs /medicines through international collaborations in order to strengthen medical research in AMR.
- **“India’s National Action Plan** for containment of AMR focuses on an integrated One Health approach and involves coordination at the state, national and international levels.
  - In its National Health Policy 2017, India has identified managing AMR as a key priority and since then the health ministry has taken several initiatives to nip the epidemic that is growing fast globally

### Suggestions

- Greater action is required to **monitor and control infections**, globally, nationally and within individual hospitals.
- Access to vaccines, clean water, and sanitation ought to be expanded.
  - We need to spearhead sanitation drives, ensure a clean water supply and support hospital-driven infection-control programmes.
- The use of antibiotics unrelated to treating human disease, such as in food and animal products must be “optimised” and be “more thoughtful” about our use of antimicrobial treatments.
- Reducing AMR also requires prescribing antimicrobials judiciously and only when they are absolutely needed.
- There is also a need for more cohesion within management strategies.
  - Coordination across the animal industry and environmental sectors to prevent the unnecessary use of antibiotics in farms — this nurtures drug-resistant organisms in our food supply — is necessary.
- Invest heavily in research and development through both government and private funding.

### **Practise Question**

**Ques.** Antimicrobial Resistance(AMR) is a growing health emergency, and tackling it needs a multi-frontal approach. Critically analyse

## **TAKE A STEP TO REGULATE DEEP FAKES**

### **Artificial intelligence (AI):**

- It is a branch of computer science dealing with the simulation of intelligent behavior in computers.
- It describes the action of machines accomplishing tasks that have historically required human intelligence.
- It includes technologies like machine learning, pattern recognition, big data, neural networks, self algorithms etc.

g: Facebook’s facial recognition software which identifies faces in the photos we post, the voice recognition software that translates commands we give to Alexa, etc are some of the examples of AI already around us.

### **Deep Fakes:**

- It is a method for manipulating videos, images, audios utilizing powerful computers and deep learning.
- It is used to generate fake news and commit financial fraud among other wrong doings.
- It overlays a digital composite over an already-existing video, picture, or audio; cybercriminals use Artificial Intelligence technology.

### **Issues with deep fakes:**

- Deep fake videos can be used to spread misinformation and propaganda.
- They compromise the public’s ability to distinguish between fact and fiction.
- There has been a history of using deepfakes to depict someone in a compromising and embarrassing situation.
  - For instance, there is no dearth of deep fake pornographic material of celebrities.
- Deep fake photos and videos do not only amount to an invasion of privacy of the people reportedly in those videos, but also to harassment.



- Deep Fakes have been used for financial fraud:
  - **Example:** scammers used AI-powered software to trick the CEO of a U.K. energy company over the phone into believing he was speaking with the head of the German parent company.

#### How deep fakes can be used as weapons against countries?

- Deepfakes can be used to influence elections.
- Deep fakes can also be used to carry out espionage activities.
- Doctored videos can be used to blackmail government and defense officials into divulging state secrets.
- The Ukrainian President revealed that a video posted on social media in which he appeared to be instructing Ukrainian soldiers to surrender to Russian forces was actually a deep fake.
- India: Deep fakes could be used to produce inflammatory material, such as videos purporting to show the armed forces or the police committing 'crimes' in areas with conflict.
- Deep Fakes could be used to radicalize populations, recruit terrorists, or incite violence.

#### Laws and regulations globally:

- Taiwan's cabinet approved amendments to election laws to punish the sharing of deep fake videos or images.
- China: It has introduced regulations prohibiting the use of deep fakes deemed harmful to national security or the economy.
  - These rules apply to content creators who alter facial and voice data.

#### Laws in India:

- Section 500 of the IPC provides punishment for defamation.
- Sections 67 and 67A of the Information Technology Act punish sexually explicit material in explicit form.
- **The Representation of the People Act, 1951:** prohibits the creation or distribution of false or misleading information about candidates or political parties during an election period.
- The Election Commission of India registered political parties and candidates to get pre-approval for all political advertisements on electronic media, including TV and social media sites, to help ensure their accuracy and fairness.

#### Way Forward

- Deepfakes could enable individuals to deny the authenticity of genuine content, particularly if it shows them engaging in inappropriate or criminal behavior, by claiming that it is a deep fake.
- 'Liar's Dividend' (professors Danielle Keats Citron and Robert Chesney): This refers to the idea that individuals can exploit the increasing awareness and prevalence of deepfake technology to their advantage by denying the authenticity of certain content.
- There is often a lag between new technologies and the enactment of laws to address the issues and challenges they create.
- The legal framework related to AI in India is insufficient to adequately address the various issues that have arisen due to AI algorithms.
- The Union government should introduce separate legislation regulating the nefarious use of deepfakes and the broader subject of AI.
  - Legislation should not hamper innovation in AI
- The proposed Digital India Bill can also address this issue.
  - We can't always rely on the policy of self-regulation.
- We must add rigor and responsibility to developing AI technology, enforce ethical guidelines, conduct regular audits for fairness, identify and address biases, and protect privacy and security.

### INDIA'S WEALTH: MILLET FOR HEALTH

#### Context:

- In 2021, the Government of India had proposed at the United Nations for declaring 2023 as the International Year of Millets. India's proposal was supported by 72 countries and United Nations General Assembly

declared 2023 as the International Year of Millets (IYM 2023) in March 2021. To take forward this declaration, the Government of India has decided to celebrate IYM 2023 by **making it a peoples' movement or 'Jan Andolan'** to enhance awareness regarding millets and health benefits and promoting millets as a healthy option for the food basket. Activities are also being taken up to **propel demand creation of millets** at both global and local levels, for **better remuneration to the farmers** for its production, to provide protection of sources (soil and water), and **creation of direct and indirect employment**.

- India produces more than 170 lakh tonnes of millets per year and is the largest producer of millets in the world; accounting for **20% of global production** and 80% of Asia's production. India's average yield of millets (1239 kg/hectare) is also **higher than global-average yield** of 1229 kg/hectare. Major millet crops grown in India and their percentage share of production are Pearl Millet (*Bajra*, 61%), Sorghum (*Jowar*, 27%), and Finger Millet (*Mandua/Ragi*, 10%). The Prime Minister has also tried to promote millets through his various speeches. He has highlighted that millets have been part of India's tradition, culture and ancient civilization, their relevance being cited in sacred texts like *Vedas* and *Tolkappiyam*.

### What are Millets?

- Millets, popularly called '*Mota Anaj*' in Hindi, are a collective **group of small-seeded annual grasses** that are grown as grain crops, primarily on marginal land in dry areas of temperate, sub-tropical, and tropical regions. They are one of the **ancient foods** dating back to the Indus Valley Civilisation, around 3000 BC. They are grown in almost 131 countries today. Currently, millets constitute the traditional food for 59 crore people across Asia and Africa.
- In India, millets can be clubbed into major, minor, and pseudo categories.
- **Major Millets:** Sorghum (*Jowar*), Pearl Millet (*Bajra*), Finger Millet (*Ragi/Mandua*).
- **Minor Millets:** Foxtail Millet (*Kangani/Kakun*), Proso Millet (*Cheena*), Kodo Millet, Barnyard Millet (*Sawa/Sanwa/ Jhangora*), Little Millet (*Kutki*).
- **Pseudo Millets:** Buck-wheat (*Kuttu*) and Amaranth (*Chaulai*).
- The top five states producing Millets are Rajasthan, Karnataka, Maharashtra, Uttar Pradesh, and Haryana.

### Importance of Millets

- **Climate-friendly Crop:** Apart from health benefits, millets are:
  - (a) Resilient to climate change as they are pest free;
  - (b) Adapted to a wide range of temperatures and moisture regimes;
  - (c) Demand less input of chemical fertilisers to grow;
  - (d) Have **low carbon and water footprints**;
  - (e) Require minimum rainfall for their growth, hence they can **sustain in drought-prone areas**. These benefits make them **bio-diverse and climate-smart crops**.
- **Viable options for Small Farmers:** Due to the low investment needed for the production of millets, they prove to be a sustainable and viable income source for small and marginal farmers.
- **High in Nutrition and Health Benefits:**
  - (a) **Storehouse of nutrition** : Millet are known to be a storehouse of nutrition as they are good sources of calcium, zinc, magnesium, phosphorous, copper, vitamin, iron, folate, carbohydrates, micronutrients, antioxidants and phytochemicals with nutraceutical properties. They can help provide ;
  - (b) **Addressing Modern Lifestyle Diseases:** They can help fight many modern-day, lifestyle diseases like Diabetes Mellitus & Heart Disorders, Cancer and Brain Disorders;
  - (c) Around 70% fatalities around the world are attributable to non-communicable diseases caused due to modern lifestyles and changed consumption patterns. Health Experts say that dietary habits are causing '**oxidative stress**' leading to cancer and DNA damage. Millets have antioxidants which can address the 'oxidative stress' and help cure these lifestyle diseases;
  - (d) **Tackling Malnutrition:** They are **gluten-free** and considered good for **celiac patients** (*Celiac disease is an immune reaction to eating gluten, a protein found in wheat, barley and rye. For patients suffering from celiac disease, eating gluten triggers an immune response in small intestine. Over time, this response prevents the intestine from absorbing some nutrients (malabsorption). The intestinal damage often causes diarrhea,*

*fatigue, weight loss, bloating and anemia*). The promotion of millets can be an effective strategy for tackling malnutrition in the country.

- **Economic and Food Security:** Under India's National Food Security Mission the area and production of millets have increased. Over the years, the production of millets has increased from 14.52 million tonnes (2015-16) to 17.96 million tones in 2020- 21 (Department of Agriculture and Farmers Welfare). Its exports are increasing exponentially as the demand for millets is increasing at a fast rate With the growing demand for millets, it is creating more business opportunities for all stakeholders.

#### **Millet as a part of the Food basket**

- The Government of India has initiated the revival of millets in the past few years and declared 2018 as the 'National Year of Millets' to raise awareness about its health benefits and boost millet production. They are labelled as 'Nutri-cereals' due to their high nutrition quotient. Millets have been included under **POSHAN Abhiyan** in 2018.
- The Government has also launched **Mission POSHAN 2.0** in 2021 to tackle malnutrition and leverage traditional knowledge systems and popularise the incorporation of millets in local recipes in order to enhance the quality of supplementary nutrition.
- Under the POSHAN Abhiyan every year, September is celebrated as **Rashtriya Poshan Maah** or National Nutrition Month across the country. The Ministry of Women and Child Development has encouraged all States and the UTs to **incorporate millets in the recipes** to enhance the nutritional quality of the meal provided under the **Supplementary Nutrition programme of Anganwadi centres**. Millets are being mandatorily supplied at least once a week.
- Balanced diets based on locally available low-cost nutritious foods and benefits of consuming millets are being shared with mothers' groups through the Anganwadis. Millets are being incorporated in **supplementary nutrition** in several States and Union Territories such Odisha, Telangana, etc.

#### **Initiatives towards making IYM 2023 a success**

- The Government has embarked on a nationwide *Jan Andolan* to enhance awareness and highlight the nutritional benefits of millets, positioning it as a modern-day healthy food that is easy to cook and quick to prepare.
- Various **creative campaigns on several forums** such as radio, print, social media, offline events, and activities are being taken up to break the stigma of millet being the 'food of the poor' showcasing it as a superfood, combating misinformation, reviving lost recipes, thus making it as an essential part of the mainstream food basket.
- Millets have been **showcased in various reputed events** like India International Trade Fair, Dubai Expo and Surajkund Mela etc.
- Over 500 startups are working in millet value chain while the **Indian Institute on Millet Research has incubated 250 startups under RKVY-RAFTAAR**. More than INR 6.2 crores has been disbursed to over 66 startups while about 25 startups have been approved for further funding.
- Food Safety and Standards Authority of India (FSSAI) is actively spreading awareness of the health benefits of the miracle crop by celebrating 'Recipe Ravivar' every Sunday on social media platforms where each month is dedicated to a specific variety of millets.
- Seven *Sutras*
- The Government of India has launched a set of seven *sutras* in the run-up to IYM 2023 and has allocated different government departments for the same. The seven sutras outline areas in:
  - (a) The enhancement of production/productivity;
  - (b) Nutrition and health benefits;
  - (c) Value addition;
  - (d) Processing, and recipes development;
  - (e) Entrepreneurship/startup/collective development;
  - (f) Awareness creation-branding, labelling and promotion, international outreach;
  - (g) Policy interventions for mainstreaming.



- **Of the seven sutras, nutrition and health benefits will focus on:**
  - (a) Generating awareness regarding health and nutrition benefits by developing mass campaigns such as **Eat Right Campaigns**;
  - (b) Enhancing steps to avail technology support for Indian Agricultural Research Institute (ICAR), SAUs and others like Indian Council of Medical Research (ICMR), National Institute of Nutrition (NIN), AYUSH, Indian Institute of Millets Research (IIMR), Central Food Technological Research Institute (CFTRI) and International Crops Research Institute for Semi-arid Tropics (ICRISAT) to research and collate evidence;
  - (c) Promoting bio-fortification of millets;
  - (d) Giving more focus on the digital publication of papers on millets;
  - (e) Encouraging commissioning of studies by National/International reputed organisations, spreading awareness among mothers through *Anganwadis*.
- The Government also plans to establish **Centres of Excellence** on millets across the length and breadth of the country and link industries with these centres.

### Conclusion

- Due to various activities and efforts of different Departments and Ministries of Government of India and the States and UTs, momentum has kickstarted for popularising millets and turning it into a revolutionary movement. In line with Prime Minister's vision for a healthier India, at a time when the country is entering '*Azadi ka Amrit Kaal*', there is a strong focus on *Jan Bhagidari* or people's movement to bring the spotlight on this superfood and for bringing this ancient food to the CenterStage.

## INDIA'S FIRST SOLAR MISSION

### Context:

- Recently, the **Visible Line Emission Coronagraph (VLEC)**, the primary payload on board Aditya-L1, was handed over to **Indian Space Research Organisation (ISRO)** by the **Indian Institute of Astrophysics (IIA)**.
- ISRO is **planning to launch the Aditya-L1 mission, first Indian space mission to observe the Sun** by June or July 2023 to observe the Sun and the **solar corona**.

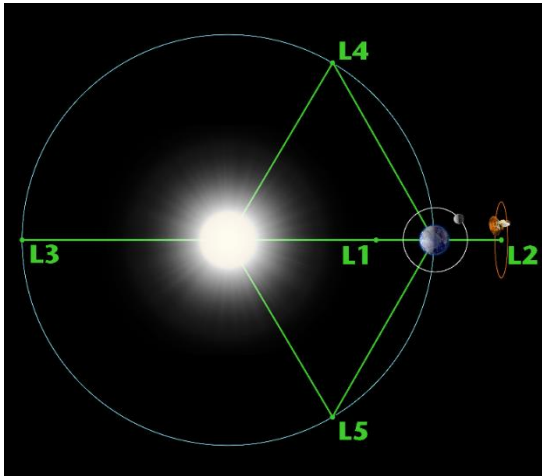
### What is Aditya-L1 Mission?

- **Launch Vehicle:**
  - Aditya L1 will be launched **using the Polar Satellite Launch Vehicle (PSLV)** with 7 payloads (instruments) on board.
  - The 7 payloads include:
    - VLEC
    - Solar Ultraviolet Imaging Telescope (SUIT)
    - Solar Low Energy X-ray Spectrometer (SoLEXS)
    - Aditya Solar wind Particle Experiment (ASPEX)
    - High Energy L1 Orbiting X-ray Spectrometer (HEL1OS)
    - Plasma Analyser Package for Aditya (PAPA)
    - Advanced Tri-axial High Resolution Digital Magnetometers
- **Objective:**
  - Aditya L1 will study the **Sun's corona, Sun's photosphere, chromosphere, solar emissions, solar winds and flares, and Coronal Mass Ejections (CMEs)**, and will **carry out round-the-clock imaging of the Sun**.
    - The mission **will be launched by ISRO to the L1 orbit** which is about 1.5 million km from the Earth. The orbit **allows Aditya-L1 to look at the Sun continuously**.

### What is L1?

- L1 refers to **Lagrangian/Lagrange Point 1, one of 5 points in the orbital plane of the Earth-Sun system**.
  - Lagrange Points are **positions in space** where the gravitational forces of a two-body system like the **Sun and Earth produce enhanced regions of attraction and repulsion**.
- These **can be used by spacecraft to reduce fuel consumption** needed to remain in position.

- A Satellite placed in the halo orbit around the L1 has the major advantage of continuously viewing the Sun without any occultation/ eclipses.
- The L1 point is home to the Solar and Heliospheric Observatory Satellite (SOHO), an international collaboration project of National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA).



#### What are the Features and Significance of VELC Payload?

- **Features:**
  - VELC will be the main payload among seven designed to study various aspects of the sun and is one of the most precise instruments made in India.
  - It was conceptualised and designed in 15 years which will help in solving mysteries related to solar astrophysics.
- **Significance:**
  - It will help in studying the temperature, velocity and density of the corona, understand the processes that result in heating of the corona and acceleration of the solar wind, aid studies on drivers of space weather, measure the magnetic field of corona and study the development and origin of coronal mass ejection.

#### What are the Other Missions to the Sun?

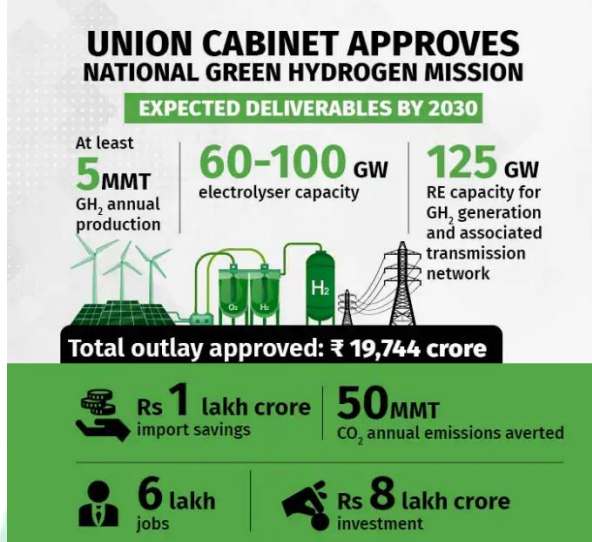
- **NASA's Parker Solar Probe:** Aims to trace how energy and heat move through the Sun's corona and to study the source of the solar wind's acceleration.
  - It is part of NASA's 'Living With a Star' programme that explores different aspects of the Sun-Earth system.
- **Helios 2 Solar Probe:** The earlier Helios 2 solar probe, a joint venture between NASA and space agency of erstwhile West Germany, went within 43 million km of the Sun's surface in 1976.
- **Solar Orbiter:** A joint mission between the ESA and NASA to collect data that will help answer a central question of heliophysics like how the Sun creates and controls the constantly changing space environment throughout the solar system.
- **Other Active Spacecraft Monitoring the Sun:** Advanced Composition Explorer (ACE), Interface Region Imaging Spectrograph (IRIS), WIND, Hinode, the Solar Dynamics Observatory, and Solar Terrestrial Relations Observatory (STEREO).

## ENVIRONMENT

### NATIONAL GREEN HYDROGEN MISSION

#### Why in News?

- The Union Government has approved a **Rs 19,744 crore National Green Hydrogen mission** that aims to make India a 'global hub' for using, producing and exporting green hydrogen.



#### What is the National Green Hydrogen Mission?

- About:**
  - It is a program to **incentivise the commercial production of green hydrogen and make India a net exporter** of the fuel.
  - The Mission will facilitate demand creation, production, utilization and export of Green Hydrogen.
- Sub Schemes:**
  - Strategic Interventions for Green Hydrogen Transition Programme (SIGHT):**
    - It will **fund the domestic manufacturing of electrolysers and produce green hydrogen.**
  - Green Hydrogen Hubs:**
    - States and regions capable of supporting large scale production and/or utilization of hydrogen **will be identified and developed as Green Hydrogen Hubs.**
- Objective:**
  - Developing green hydrogen production capacity of at least **5 MMT (Million Metric Tonne) per annum**, alongside adding **renewable energy capacity of about 125 GW (gigawatt) in India** by 2030.
  - It aims to **entail over Rs 8 lakh crore of total investments** and is expected to generate six lakh jobs.
  - It will also lead to a **cumulative reduction in fossil fuel imports by over Rs 1 lakh crore** and an abatement of nearly 50 MT of annual greenhouse gas emissions.
- Nodal Ministry:**
  - Ministry of New and Renewable Energy
- Significance:**
  - It will help entail the **decarbonisation of the industrial, mobility and energy sectors** ; reducing dependence on imported fossil fuels and feedstock; developing indigenous manufacturing capabilities; creating employment opportunities; and developing new technologies such as efficient fuel cells.
- Potential:**
  - India has a **favourable geographic location and abundance of sunlight and wind for the production** of green hydrogen.



- Green hydrogen technologies are **being promoted in sectors where direct electrification isn't feasible**.
- Heavy duty, long-range transport, some industrial sectors and long-term storage in the power sector are some of these sectors.
- The nascent stage of this industry **allows for the creation of regional hubs that export high-value green products and engineering**, procurement and construction services.

#### What are the Challenges?

- **In Nascent Stages Globally:**

- Green hydrogen development is still in the nascent stages globally and while India can take the lead in being a major producer, **it doesn't have the necessary infrastructure yet** to execute all these intermediary steps.

- **Economic Sustainability:**

- One of the biggest challenges faced by the industry for using hydrogen commercially is the **economic sustainability of extracting green hydrogen**.
- For transportation fuel cells, hydrogen must be cost-competitive with conventional fuels and technologies on a per-mile basis.

#### What is Green Hydrogen?

- **About:**

- Hydrogen is a **key industrial fuel that has a variety of applications including the production of ammonia (a key fertilizer)**, steel, refineries and electricity.
- However, all of the hydrogen manufactured now is the **so-called 'black or brown' hydrogen because they are produced from coal**.
- Hydrogen is the most abundant element in the universe. But pure, or the elemental hydrogen, is very scarce. It almost always exists in compounds like with oxygen to form H<sub>2</sub>O, or water.
- But when **electric current is passed through water, it splits it into elemental oxygen and hydrogen through electrolysis**. And **if the electricity used for this process comes from a renewable source** like wind or solar then the hydrogen thus **produced is referred to as green hydrogen**.
- Colors attached to hydrogen indicate the **source of electricity used to derive the hydrogen molecule**. For instance, if coal is used, it is referred to as brown hydrogen.

- **Current Production:**

- Green hydrogen currently accounts for **less than 1% of global hydrogen production** due to it being **expensive to produce**.
- A kilogram of black hydrogen costs USD 0.9-1.5 to produce while grey hydrogen costs USD 1.7-2.3 and blue hydrogen can cost anywhere from USD 1.3-3.6. However, green hydrogen costs USD 3.5-5.5 per kg, according to a 2020 analysis by the Council for Energy, Environment and Water.

- **Need for Producing Green Hydrogen:**

- Hydrogen is a great source of energy **because of its high energy content per unit of weight**, which is why it is used **as rocket fuel**.
- Green hydrogen in particular is **one of the cleanest sources of energy with close to zero emission**. It can be used in **fuel cells for cars or in energy-guzzling industries like fertilizers and steel manufacturing**.
- Countries across the world **are working on building green hydrogen capacity as it can ensure energy security** and also help in cutting carbon emission.
- Green hydrogen has become a global buzzword, especially as the world is facing its biggest-ever energy crisis and the threat of **climate change** is turning into a reality.

#### What are the other Initiatives Related to Renewable energy?

- Jawaharlal Nehru National Solar Mission (JNNSM).
- International Solar Alliance.
- PM- KUSUM.
- National Wind-Solar Hybrid Policy.
- Rooftop Solar Scheme.

#### Way Forward

- There is a need to announce **incentives to convince enough users of industrial hydrogen to adopt green hydrogen.**
- India needs to develop **supply chains in the form of pipelines, tankers, intermediate storage and last leg distribution networks** as well as put in place an effective skill development programme to ensure that lakhs of workers can be suitably trained to adapt to a viable green hydrogen economy.
- India has the **potential to bring down the cost of green hydrogen by using low-cost renewable generating plants** and cost-curtailment experience gained through solar and wind reverse auctions.
  - Huge market **potential, owing to the young demography and thriving economy, will be a long-term benefit for the government** while pushing the application of hydrogen-based technologies.

## GLOBAL GLACIER CHANGE IN THE 21ST CENTURY

### Why in News?

- Recently, a report titled “Global glacier change in the 21<sup>st</sup> century: Every increase in temperature matters”, which states half the Earth’s glaciers may disappear by 2100.
- The researchers used **two decades of satellite data to map the planet’s glaciers with greater precision than ever before.**
- The **United Nation’s (UN) Intergovernmental Panel on Climate Change’s sixth assessment report** released in 2022 also warned that we are running out of time to attain the 1.5°C target.

### What are the Findings?

- **Glaciers Melting at Unprecedented Rate:**
  - **Glaciers** are receding at unprecedented rates due to **climate change** and rising temperatures.
  - The amount of ice lost by glaciers between **1994 and 2017 was around 30 trillion tones** and they are now melting at a pace of 1.2 trillion tonnes each year.
    - The glaciers in the Alps, Iceland and Alaska are some of those that are melting at the quickest rates.
  - Half the Earth’s glaciers are destined to vanish by 2100, even if we adhere to the **Paris Climate Agreement** goal of limiting global temperature rise to 1.5 degrees Celsius above pre-industrial levels.
  - A minimum of 50 % of the loss will **occur within the next 30 years.** 68% of glaciers will vanish if **global warming continues at the current rate of 2.7°C.**
  - If this happens, by the end of the following century, **there would be practically no glaciers left in central Europe,** western Canada and the United States.
    - Some of these glaciers can be **saved** from extinction by reducing global warming, the researchers noted.
    - **Glaciers, which hold 70 % of the Earth’s freshwater,** currently encompass around 10 % of the planet’s land area.
- **Increasing Risk of Disaster:**
  - Melting glaciers raise sea levels dramatically, jeopardizing up to **two billion people’s access to water and increasing the risk of natural disasters** and **extreme weather events** like floods.
  - Global sea level rose by 21 % between 2000 and 2019. This was solely due to meltwater from melting glaciers and ice sheets.
- **Recommendations:**
  - The rapidly increasing glacier mass losses as global temperature increases beyond 1.5C stresses the **urgency of establishing more ambitious climate pledges to preserve the glaciers** in these mountainous regions.

### Question For Practice

**Q.1** Describe the major outcomes of the 26<sup>th</sup> session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference?

**Q.2** ‘Climate Change’ is a global problem. How will India be affected by climate change? How Himalayan and coastal states of India will be affected by climate change?

## RENEWABLE ENERGY

### In News

- Recently, the Government has started **exploring storage options** as the share of renewables increases in the grid.

### Key Points

- **Current Scenario:**
  - To operationally sustain a huge monthly addition of an average 1,000 megawatt from non-fossil fuels or renewables to the electricity grid, India needs to urgently work on **developing viable energy storage options**.
  - The amount is almost five times the amount of power a 250 MWe nuclear plant produces.
- **Producer:**
  - India is the world's third largest producer of renewable energy.
  - Nearly 40 per cent of installed electricity capacity comes from non-fossil fuel sources.
  - This **green push** has resulted in a sharp 24 per cent reduction in emission intensity of GDP between 2005 and 2016, but it has also thrown up challenges of a grid being increasingly powered by renewables.
- **Alternative to Lithium Ion Batteries:**
  - Even as the Lithium-ion storage battery option for grid application is now being ruled out as unviable, at least for now, an emerging policy resolution is that **solar and wind-based generation** cannot continue to be pushed down to struggling electricity distribution companies or discoms.

### About Solar Energy

- Solar energy is any type of energy generated by the sun.
- Solar energy is created by **nuclear fusion** that takes place in the sun.
  - Fusion occurs when protons of hydrogen atoms violently collide in the sun's core and fuse to create a helium atom.
- India had **committed to installing 175,000 MW** of renewable energy by 2022 of which 100,000 MW was to be solar power.
- As of October 2022, **61,000 MW of solar power** had been installed so far.

### Major Programmes in Renewable Energy Sector

- **National Solar Mission (NSM)**
  - The NSM was launched with the objective of establishing India as a global leader in solar energy, by creating the policy conditions for solar technology diffusion across the country.
  - The initial target of NSM was to install 20 GW solar power by 2022.
  - This was upscaled to 100 GW in early 2015.
- **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)**
  - It was launched in 2019 and it aims to help farmers access reliable day-time solar power for irrigation, reduce power subsidies, and decarbonise agriculture.
  - PM-KUSUM provides farmers with incentives to install solar power pumps and plants in their fields.
- **Atal Jyoti Yojana (AJAY) Phase-II**
  - A Scheme for the installation of solar street lights with 25% fund contribution from MPLAD Funds.
- **Solar Parks Scheme**
  - Solar parks provide solar power developers with a plug and play model, by facilitating necessary infrastructure like land, power evacuation facilities, road connectivity, water facility etc. along with all statutory clearances.

### Challenges

- **Non-availability of natural gas to run gas turbines:**
  - It complements the growing RE capacity in the generation mix.
  - India's vast fleet of coal-based power plants of 200 MW series are more than 25 years **old**, run on **old technology** and do **not promise robust reliability**.



- **India's heavy load:**
  - The load demand is far from saturated.
  - There is the need to replace obsolete coal-based plants with **supercritical highly-efficient** coal-based plants as an intermediate goal for total transition.
  - However, this may not be acceptable to the international community in view of the impending climate crisis.
- **Coal based usage reduction:**
  - There is an urgent need to reduce the percentage of coal-based capacity by closing the inefficient fleet
  - And simultaneously add new flexible capacity to meet load requirements.
  - Newer technologies or avenues are needed which can convert coal-based capacity to a fuel mix of gas and hydrogen.
- **Storage capacity & flexibility of thermal power plants:**
  - Thermal power plants need to be flexible up to 55 per cent and in coming phases, after three years, go down to 40 per cent.
  - Battery storage is expensive at Rs 10 per kilowatt per hour. There is a fresh impetus required to pursue pumped hydro projects so as to reduce costs.
- **Reduced scope to go renew:**
  - The renewables challenge is compounded by the fact that SECI (Solar Energy Corporation of India Ltd) has locked a number of contracts involving green developers in rigid PPAs (power purchase agreements) with no scope for innovation.

### Way Ahead

- **Hydrogen and hybrid generation models** blended with off-stream pumped storage:
  - Stepping up green hydrogen production and tapping into its potential as a fuel should be expedited.
  - All pumped hydro sites and hydro PSUs have been given a target of taking up pumped hydro schemes.
  - There should be opencast mines as potential sites for pumped hydro in the future.
- **Energy storage:**
  - It is needed alongside green energy sources to primarily balance out the variability in renewable generation – electricity is generated only when the sun shines or when the wind blows.
  - This is not always in sync with the demand cycle.
  - Storage can help tide over this shortcoming associated with renewables.
- **Renewables bundled with a viable storage option:**
  - For procurers such as state-owned discoms, renewables are not always a viable option precisely due to these vagaries in the generation trends, which means they still have to depend on thermal or nuclear generation for meeting base load demand.
  - This option will help overcome this problem.

## JOSHIMATH LAND SUBSIDENCE

### In News

- The **subsidence (ground sinking) in Joshimath** (at an altitude of over 6,000 feet) in Uttarakhand has **delivered stern warning** for the State's administration.

### Key Points

- **About Joshimath Sinking:**
  - In 2021, Joshimath was struck in the aftermath of a deluge in the Rishiganga and Dhauliganga rivers.
  - This event is what experts are now suggesting likely **triggered the current "sinking and cracking"**.
  - Later that year, Joshimath was battered by a **torrential downpour** of over 190 mm.

- Following the rains, residents noticed a **movement in the cracks and more frighteningly**, new cracks as well, with several cropping up inside homes.
- **Impacts:**
  - At least **66 families have fled** the town while 561 houses have reported cracks.
  - A government official said that **over 3000 people** have been affected so far.



### Land Subsidence

- According to the National Oceanic and Atmospheric Administration (NOAA), subsidence is the “**sinking of the ground** because of underground material movement”.
- It can happen for a **host of reasons, man-made or natural**, such as the removal of water, oil, or natural resources, along with mining activities.
- **Earthquakes, soil erosion, and soil compaction** are also some of the well-known causes of subsidence.
- The NOAA also mentions that this phenomenon can “happen over **very large areas** like whole states or provinces, or **very small areas** like the corner of your yard.”

### Reasons for Joshimath's Land Subsidence

- **Incredibly Fragile Ecology:**
  - Joshimath city has been built on an ancient landslide material — meaning it rests on a deposit of sand and stone, not rock, which doesn't have high load-bearing capacity.
  - This makes the area **extremely vulnerable** to ever-burgeoning infrastructure and population.
- **Blatant Ignorance:**
  - The current developments in Joshimath are a combination of ignorance and apathy.
- **Unplanned Urbanisation:**
  - The unplanned and unauthorised construction has led to the **blocking of the natural flow of water**, which eventually results in frequent landslides.
- **Natural calamities:**
  - The area is a seismic zone, which makes it prone to frequent earthquakes.
  - The region also faces frequent natural calamities such as landslides and flash floods.
- **Ignored the Recommendations of Mishra Committee Report (conducted in 1976):**
  - The Committee had concluded in its report that the land upon which the town is founded is, in fact, a deposit of sand and stone, the remnants of an ancient landslide.
  - The town is **not actually built on the “main rock”** of the mountain.
  - The report also pointed out that undercutting by the currents of the Alaknanda river makes the area **even more prone to disasters**.
- **Hydel Projects:**
  - The construction of the 520 MW NTPC Tapovan Vishnugad Hydro Power plant has perhaps done more damage to Joshimath's foundations than anything else.
  - The project being constructed on the Dhauliganga river required a **tunnel** to be built that cut right through the mountain upon which Joshimath is located.
- **Land Erosion:**
  - Due to the running streams from Vishnuprayag and sliding along the natural streams are the other reasons behind the city's fate.
- **Poor Drainage System:**
  - The lack of a proper drainage system might have also contributed to the sinking of the area.
- **Geographic fault:**

- It might have been triggered by the **reactivation** of a geographic fault — defined as a fracture or zone of fractures between two blocks of rock — where the Indian Plate has pushed under the Eurasian Plate along the Himalayas.

### Way Forward

- **Prohibition of Major Constructions:**
  - Experts recommend a complete shutdown of development and hydroelectric projects in the region.
  - Construction of the NTPC Hydro Power plant and along the Helang Bypass has ceased till further orders.
- **Rigorous Replantation:**
  - Experts have also suggested replantation in the region, especially at the vulnerable sites to retain soil capacity.
- **Redevelopment of Drainage System:**
  - Drainage planning is one of the biggest factors that needs to be studied and redeveloped.
  - The state government needs to look into the issue and create a new plan for the drainage system.
- **Evacuation of People:**
  - The government has to put in an order evacuation plans for 4,000 prefabricated homes to help the residents of Joshimath.
  - The government must build resilience in the vulnerable areas through improved early warning systems, better construction quality etc.
- **Coordination Amongst Organizations:**
  - There is a need for a coordinated effort between the government and civil bodies with the aid of military organizations to save Joshimath.
- **Studies by Technical Resources:**
  - Technical resources from nearby areas need to be summoned to Joshimath to find a solution.
  - The state government also needs to take **scientific studies more seriously**, which clearly spell out the reasons for the current crisis.

### Key Facts

- Dhauliganga & Alaknanda Rivers Meet at Vishnuprayag, which is at the base of Joshimath Mountain.
- Joshimath is also famed as the gateway for mountain climbing expeditions, trekking, and several other thrilling activities for those who want to live life on the edge.
- It is from here one has to traverse to the famous trekking destination in Uttarakhand, Valley of Flowers

## **DAMS**

### In News

- Recently a study by the **United Nations University Institute on Water, Environment and Health (UNU-INWEH)**, also known as the **UN's think tank on water** was released.

### Study highlights

- **Global status:**
  - **Potential reduction in storage:**
    - The study shows that 6,316 billion cubic metre of initial global storage in 47,403 large dams in **150 countries will decline** to 4,665 billion cubic metre, causing 26 percent storage loss by 2050.
    - The loss of 1,650 billion cubic metre storage capacity is roughly equal to the **annual water use of India, China, Indonesia, France and Canada combined**.
  - **Reduced dam storage in Asia-Pacific:**
    - In 2022, the Asia-Pacific region, the world's most heavily dammed region, is estimated to have lost 13 per cent of its initial dam storage capacity.
    - It will have lost nearly a quarter (23 per cent) of initial storage capacity by mid-century.



- The region is home to 60 per cent of the world's population and water storage is crucial for sustaining water and food security.

- **India's dams:**

- The study warns that around **3,700 dams in India will lose 26 percent of their total storage by 2050.**
- **Reason of loss:**
  - This storage loss will be due to the accumulation of sediments which can undermine water security, irrigation and power generation in the future.
    - Trapped sediment has already robbed roughly 50,000 large dams worldwide of an estimated 13 to 19 percent of their combined original storage capacity.

- **China's dams:**

- China, meanwhile, the world's most heavily dammed nation, has lost about 10 percent of its storage and will lose a further 10 percent by 2050 according to the report.

### More about dams

- **About:**

- Dam is a structure built across a stream, a river, or an estuary to retain water.
- **India has 4,407 large dams**, the third highest number in the world after China (23,841) and the USA (9,263).

- **Types:**

- **Large:** A dam is considered large if it is higher than 15 m or between 5 and 15 m high, but impounds over 3 million cubic metres.
- **Low:** A low dam is less than 30 m high;
- **Medium:** A medium-height dam is between 30 and 100 m high, and
- **High:** A high dam is over 100 m high.

- **Significance of dam construction:**

- Water storage infrastructure is critical for development.
- Large dams and reservoirs provide hydroelectricity, flood control, irrigation, and drinking water and often perform multiple functions simultaneously.

- **Major threats to dams:**

- **Ageing:**

- All over the world, many large dams built in the 20th century may start to show signs of ageing, and many may already be operating at or beyond their design life.
- For India, **2025 is set to be a big year as more than 1,000 dams would turn roughly 50 years or older.**

- **Accumulation of sediments & siltation:**

- Accumulation of **sediments decreases a reservoir's capacity** over the years and determines a reservoir's life expectancy.
- Siltation, which is the accumulation of silt and debris behind the reservoir, also leads to a **reduction in the storage capacity of the dams.**

- **Structural issues:**

- India's dams are more vulnerable to deterioration because a large proportion of them are **earthen**--built by compacting successive layers of earth, and **not concrete**--and are hence **more prone to ageing.**

- **Flooding:**

- The country gets **concentrated rainfall every year for a designated time period as opposed to distributed rainfall**, which contributes to the dams' vulnerability.
- In India, the downstream areas are often exposed to flood disasters& flooding has caused 44% of dam failures in India.

- **Seismic threat:**

- Some of the Himalayan dam systems, including the Tehri Dam, are in an active seismic area given that the Himalayan Mountain system is constantly changing and growing giving rise to several tectonic movements.

### Way ahead

- **The Central Water Commission's recent study on the Srisailem project on the Krishna river** also found that the dam's storage capacity was reduced as a result of siltation.
  - There are several more studies that clearly show that the actual siltation rates are several times higher than what was estimated.
- Therefore, a timely assessment of the structure should be carried out with the removal of reservoir silt from dams.

### Dam Safety Act, 2021

- **About:**
  - It is an Act to provide for the surveillance, inspection, operation, and maintenance of the specified dam for prevention of dam failure related disasters and to provide for an institutional mechanism to ensure their safe functioning and for matters connected therewith or incidental thereto.
    - These are dams with height of more than 15 metres, or height between 10 metres to 15 metres with certain design and structural conditions.
- **2 national Bodies:**
  - **The National Committee on Dam Safety (NCDS):**
    - Its functions include evolving policies and recommending regulations regarding dam safety standards;
    - It will be chaired by the National Water Commissioner.
  - **The National Dam Safety Authority:**
    - Its functions include implementing policies of the National Committee, providing technical assistance to State Dam Safety Organisations (SDSOs), and resolving matters between SDSOs of states or between a SDSO and any dam owner in that state.
- **2 state bodies:**
  - State Committee on Dam Safety,
  - State Dam Safety Organisation.
  - These bodies will be responsible for the surveillance, inspection, and monitoring the operation and maintenance of dams within their jurisdiction.

## OZONE HOLE

### In News

- A recent scientific assessment has suggested that the ozone hole is now **expected to be completely repaired by 2066**.

### Key Findings

- **Recovery period:**
  - The ozone layer over Antarctica, where the hole is the most prominent, will take a **long time** to heal completely.
  - If current policies continued to be implemented, the ozone layer was expected to recover to 1980 values by **2066 over Antarctica**, by 2045 over the Arctic, and by 2040 for the rest of the world.
  - Over the rest of the world, the ozone layer is expected to be back to where it was in 1980 **by 2040 itself**.
- **How it became possible:**
  - Successful elimination of some harmful industrial chemicals, together referred to as **Ozone Depleting Substances or ODSs**.
  - Implementation of the 1989 **Montreal Protocol**.
    - Nearly 99 per cent of the substances banned by the **Montreal Protocol** have now been eliminated from use, resulting in a slow but definite recovery of the ozone layer.
- **Ozone:**
  - Ozone (chemically, a molecule having three Oxygen atoms, or O<sub>3</sub>) is found mainly in the **upper atmosphere**, an area called **stratosphere**, between 10 and 50 km from the Earth's surface.
  - It is critical for planetary life, since it **absorbs ultraviolet rays** coming from the Sun.

- UV rays are known to cause skin cancer and many other diseases and deformities in plants and animals.

### Damage to the ozone layer

- **Origin:**
  - The depletion of the ozone layer, first noticed in the early 1980s, used to be the biggest environmental threat before climate change came along.
- **Hole or just reduction?**
  - Though the problem is commonly referred to as the emergence of a 'hole' in the ozone layer, it is actually just a reduction in concentration of the ozone molecules.
  - Even in the normal state, ozone is present in extremely low concentrations in the stratosphere. Where the 'layer' is supposed to be the thickest, there are no more than a few molecules of ozone for every million air molecules.
- **Sharp reductions in concentrations of Ozone:**
  - In the 1980s, scientists began to notice a sharp drop in its presence.
  - This drop was much more pronounced over the **South Pole**.
  - It was later linked to the unique meteorological conditions that prevail over Antarctica:
    - Temperature,
    - Pressure,
    - Wind speed and
    - Direction
- **Biggest hole during months:**
  - The ozone hole over Antarctica is the biggest during the months of September, October, and November.
- **Main cause deciphered:**
  - The use of a class of industrial chemicals that contained chlorine, bromine or fluorine.
  - The most common of these were the chlorofluorocarbons, or CFCs, that were used extensively in the air conditioning, refrigeration, paints, and furniture industries.
- **Montreal Protocol:**
  - It was with this climate change objective in mind that the Montreal Protocol was amended in 2016 to extend its mandate over hydrofluorocarbons, or HFCs, that have replaced the CFCs in industrial use.
  - HFCs do not cause much damage to the ozone layer — the reason they were not originally banned — but are very powerful greenhouse gases.
- **Kigali Amendment:**
  - The Kigali Amendment to the Montreal Protocol seeks to eliminate 80-90 per cent of the HFCs currently in use by the year 2050.
  - This is expected to prevent another 0.3 to 0.5 degree Celsius of global warming by the turn of the century.

### Timeline

- **Before 1979:**
  - Scientists had not observed atmospheric ozone concentrations below **220 Dobson Units (DU)**; (measure of the total amount of ozone in a vertical column of air above the Earth's surface).
- **1980s and after:**
  - In the early 1980s, scientists using ground-based and satellite measurements began to realise that the Earth's natural sunscreen was thinning dramatically over the South Pole each spring.
  - This thinning of the ozone layer over Antarctica came to be known as the ozone hole.
- In 1979, the maximum depth of the hole was 194 Dobson Units (DU). In 1982, it fell to 173 DU, in 1983 to 154 DU, and in 1985 to 124 DU.
- The image below has been picked from a series published by NASA showing the size and shape of the ozone hole every year from 1979 through 2019.
- Red and yellow areas in the images indicate the ozone hole. The maps show the ozone hole on the day the lowest ozone concentrations were measured each year.



- In 1991, ozone concentration fell below 100 DU for the first time. The deepest hole was in 1994, when concentrations fell to 73 DU on Sept 30.

### Significance

- It covers the entire planet and protects life on earth by absorbing harmful ultraviolet-B (UV-B) radiation from the sun.
- **Impact on Plants**
  - Plants cannot live and grow in heavy ultraviolet radiation, nor can the planktons that serve as food for most of the ocean life.
- **Health impact of UV-B rays**
  - With a weakening of the Ozone Layer shield, humans would be more susceptible to skin cancer, cataracts and impaired immune systems.
- Without it, life may have been impossible on earth due to harmful UV-B rays.
- **Ozone-Depleting Substances:**
  - Their elimination has an important climate change co-benefit as they are powerful greenhouse gases.
  - Several of them are hundreds or even thousands of times more dangerous than carbon dioxide, the most abundant greenhouse gas and the main driver of global warming.
  - Global compliance to the Montreal Protocol ensures the avoidance of 0.5 to 1 degree Celsius of warming by 2050.
  - That is if the use of CFCs and other similar chemicals had continued to grow the way it did before they were banned, the world would have been 0.5 to 1 degree Celsius warmer than it already is.

### Concerns

- **Replacements available:**
  - The use of ODSs, though extensive, was restricted to some specific industries.
  - Their replacements were readily available, even if at a slightly higher cost initially.
  - The impact of banning these ozone-depleting chemicals was therefore limited to these specific sectors.
  - With some incentives, these sectors have recovered from the initial disruption and are thriving again.
- **Carbon footprints:**
  - Emission of carbon dioxide is inextricably linked to the harnessing of energy.
  - Almost every economic activity leads to carbon dioxide emissions. Even renewable energies, like solar or wind, have considerable carbon footprints right now, because their manufacturing, transport, and operation involves the use of fossil fuels.
- **Greenhouse gas emissions:**
  - The emissions of methane, the other major greenhouse gas, comes mainly from agricultural practices and livestock.
  - The impact of restraining greenhouse gas emissions is not limited to a few industries or economic sectors, but affects the entire economy, and also has implications for the quality of life, human lifestyles and habits and behaviours.

### Way Ahead

- Ensuring that **existing restrictions** on ozone-depleting substances are **properly implemented** and global use of ozone-depleting substances continue to be reduced.
- Ensuring that banks of ozone-depleting substances (both in storage and contained in existing equipment) are dealt with in an environmentally-friendly manner and are replaced with **climate-friendly alternatives**.
- Ensuring that permitted uses of ozone-depleting substances are **not diverted to illegal uses**.
- **Reducing** use of ozone-depleting substances in applications that are not considered as consumption under the Montreal Protocol.
- Ensuring that **no new chemicals or technologies emerge** that could pose new threats to the ozone layer (e.g. very short-lived substances).

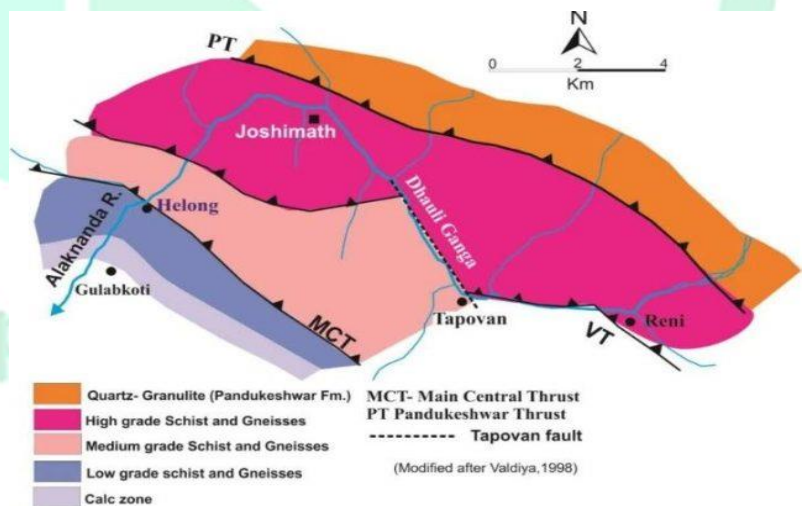
## JOSHIMATH CRISIS

### CONTEXT:

- The town of Joshimath in Uttarakhand is witnessing an unprecedented crisis. Wide Cracks have appeared on the roads and on hundreds of residential and commercial buildings in the town. Many structures have been declared unsafe, and the residents have been asked to vacate them. The Authorities have declared Joshimath as a landslide and subsidence-hit zone. The whole town is sinking. While the town is situated in a geologically unstable region, the major reason for sinking is being attributed to large-scale development projects being undertaken in the region. The Government and its agencies have responded to the crisis through various measures, yet they are rightly being criticized for long ignoring the warnings given by various environmental activists and geological experts about uncontrolled development being undertaken in the region.

### About Joshimath

- Joshimath, is a town situated in Chamoli District of Uttarakhand. It is located in the Middle Himalayas at an altitude of ~1875 m. Joshimath is a religious and tourist place, and is situated near holy shrine of Badrinath (one of the *Char Dhams* in Uttarakhand). It is also proximal to Valley of Flowers National Park and Shri Hemkund Sahib (a holy shrine in Sikhism).
- The Town is situated in a geologically unstable region (Seismic Zone V). It is situated north of Main Central Thrust (of Himalayas) nearby Tapovan Fault. (Vaikrita Thrust and Pandukeshwar Thrusts are very close to Joshimath). Its location nearby a fault is one of the reasons making it susceptible to subsidence.



### What is Land Subsidence?

- According to National Oceanic and Atmospheric Administration (NOAA), Land subsidence is **sinking of the ground** because of underground material movement. Subsidence can be caused by **gradual settling** or **sudden sinking** of the Earth's surface.
- Subsidence is generally caused by:
  - Resource Extraction:** The removal of water, oil, natural gas, or mineral resources out of the ground by pumping, fracking, or mining etc.;
  - Natural Causes:** Natural events such as earthquakes, soil compaction, **glacial isostatic adjustment**, erosion, sinkhole formation, and **adding water to fine soils**;
  - Infrastructural Load:** High load exceeding load-carrying capacity of the underlying soil.

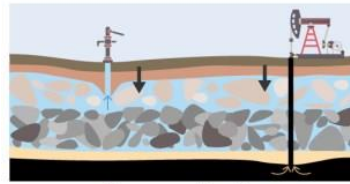
### What are the reasons for Joshimath Crisis?

#### ANTHROPOGENIC

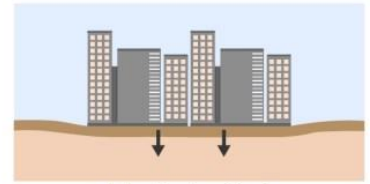
- Development Projects:** Various development projects are being undertaken nearby the sinking region. These include NTPC's 520 MW **Tapovan-Vishnugad Hydro Power Project** and widening of roads under the *Char Dham Project*. While NTPC has denied the role of the power project, earlier incidents related to

the project indicate the possibility that the project may have a role to play in the current crisis. A tunnel being bore under the town of Auli (near Joshimath) had **punctured an aquifer** in 2009 leading to large-scale seepage and **drying-up of water resources in nearby regions**. Water has been seen pouring out from cracks in several locations in the present crisis. 6-km Helang-Marwari bypass (under Char Dham Project) may have **weakened slopes and further destabilising the local topography**. Studies are being undertaken, but experts have blamed these large-scale projects for the current crisis.

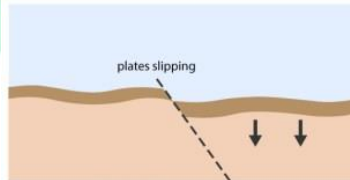
## WHAT CAUSES LAND SUBSIDENCE?



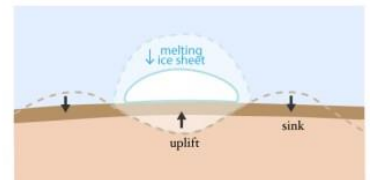
Resource extraction  
e.g. groundwater, oil and gas



Infrastructural load  
the weight of buildings causes compaction



Tectonic movements  
e.g. earthquakes



Melting ice sheets  
the ground around the melting ice sheet shifts

- **Tourism:** Joshimath has become overnight stopover for pilgrims and tourists visiting Badrinath, Shri Hemkund Sahib or Valley of Flowers. Skiing resort of Auli is located nearby. As such large number of hotels have come up in the town. The underlying soil may lack the load-carrying capacity of the ever-expanding infrastructure.
- **Unplanned Urbanisation:** Most of the buildings have been constructed without proper studies about the underlying soil.
- **Water Withdrawal:** Subsidence occurs when large amounts of groundwater are withdrawn from specific types of rocks, such as fine-grained sediments. The rock compacts because the water helps to keep the ground in place. When the water is removed, the rocks collapse in on themselves. Increased withdrawal of water due to rising population (tourism) may have contributed to sinking.
- **Absence of Proper Drainage:** It leads to landslides. The existence of soak pits, which allow water to slowly soak into the ground, is responsible for the creation of cavities between the soil and the boulders. This leads to water seepage and soil erosion.

### NATURAL

- **First,** Joshimath is located in **seismic zone V** which is more **prone to earthquakes** besides **gradual weathering** and **water percolation** which reduce the cohesive strength of the rocks over time.
- **Second,** The **Mishra Committee Report** states that Joshimath is **situated on a sand and stone deposit**. A majority of the town has been constructed on the **debris of landslides**, leading to smooth and eroded rocks and **loose soil on the surface**. These slopes can be destabilised even by slight triggers. Hence such slopes are not suitable for a township.
- **Third,** The Mishra Committee Report has also pointed out that subsidence in Joshimath might have been triggered by the **reactivation of a geographic fault** where the Indian Plate has pushed under the Eurasian Plate along the Himalayas.
- **Fourth,** Undercutting by Alaknanda and Dhauliganga river currents is also contributing to landslides in the region.
- **What were the major recommendations of the Mishra Committee in the context of Joshimath Crisis?**
- Joshimath has been sinking for a long time. The Union Government had appointed MC Mishra (Collector of Garhwal at that time) to find out the reasons for sinking. The 18-member Committee had submitted the report in 1976.
- The Report had pointed out several factors for sinking like location on ancient landslide, erosion of river banks by Dhauliganga and Alaknanda, increased construction activities, lack of proper drainage facilities (water seepage and soil erosion) etc.
- The Committee had given several recommendations:
- **First,** The most important preventive measure suggested was **restriction on heavy construction** in the region.



- **Second**, Construction should only begin after the **soil's weight-bearing capacity** and **site stability** have been assessed. It's also important **not to dig too deep into slopes**.
- **Third**, When repairing roads or building structures, it was recommended that the **boulders not be removed by digging or blasting the hillsides**. In landslide areas, stones and boulders should **not be removed from the bottom of the hill** because this would remove toe support, increasing the likelihood of landslides.
- **Fourth**, It is necessary to fill in any cracks that have appeared on the slopes.
- **Fifth**, It has also recommended that **extensive plantation** work be done in the area, particularly between Marwari and Joshimath, to **conserve soil and water resources**, and has cautioned against cutting trees in the landslide zone.
- **Sixth**, there should be **strict regulations on tree cutting** for the township's timber and firewood needs, and that the locals would be required to have access to alternative fuels.
- **Seventh**, It is imperative that **slopes not be used for agricultural purposes**.
- **Eighth**, Water seepage is abundant in the area. To prevent future landslides, **open rain water seepage must be stopped** through the construction of a **pucca drainage system**. Water should not be allowed to accumulate in any depression; instead, drains should be built to transport it to safe areas.
- **Ninth**, Roads should be metalled and free of scuppers, which drain water from the road surface.
- **Tenth**, Cement blocks should be positioned in areas of the river bank that are susceptible to erosion in order to stop the bank from eroding.
- **Eleventh**, In order to **prevent erosion and train rivers**, measures should be taken, and the hanging boulders at foothills should be given the appropriate support they need. (River training is the construction of structures to direct the flow of a river).

#### **What steps have been taken to address the Joshimath Crisis?**

- **First**, the Government has halted all construction activities in the region.
  - **Second**, An expert panel consisting of 8 people has made the recommendation that homes in the area that sustained the most damage be demolished, that areas that have become inhabitable be identified, and that people be moved to safer areas as a matter of priority. The Government has already declared certain buildings as unfit for inhabitation. People are being relocated. Interim compensation has been provided to the affected families.
  - **Third**, controlled demolition of most vulnerable buildings is being undertaken.
  - **Fourth**, A group of specialists from the National Disaster Management Authority (NDMA), the National Institute of Disaster Management (NIDM), the Geological Survey of India (GSI), the Indian Institute of Technology Roorkee (IITR), the Wadia Institute of Himalayan Geology, the National Institute of Hydrology, and the Central Building Research Institute (CBRI) will investigate the situation and offer their recommendations.
- What should be the approach going ahead?**
- **First**, There is need to balance development needs of the region with the protection of the environment. Development is necessary but not at the cost of local environment or population. Ensuring sustainability should be the top priority.
  - **Second**, The natural assets of the Himalayas, such as biodiversity, local ecology and environmental balance should be at the centre of any development plan for the area.
  - **Third**, Instead of focusing on massive dam construction, attention should be given to smaller projects that can help meet the energy needs of the community.
  - **Fourth**, Taking precautions to protect people's well-being ought to be the top priority right now. The State government ought to set up a communication channel that is both transparent and continuous with the individuals who have been impacted.
  - **Fifth**, Mishra Committee Recommendations should be implemented for all development projects. No activity should be undertaken on unstable slopes unless structural stability can be ensured.

## Conclusion

- The Joshimath Crisis brings out harmful impacts of uncontrolled development in geologically unstable and environmentally sensitive region. The multiple crisis in the region (Kedarnath 2013, Chamoli 2021) necessitate a relook at the present development model. An immediate adjustment is imperative that puts sustainability as the top priority. Otherwise, such crisis will become more frequent and disastrous.

## DECARBONIZATION OF AGRICULTURE SECTOR

### Context

- India has set 2070 as the target year for achieving the Net Zero transition. The Government has also declared the **Long-Term Low-Carbon Development Strategy (LT-LEDS)** for the long-term decarbonization of the economy. Agriculture sector is also a significant contributor to the Green House Gas emissions. Although, the Government has not included Agriculture in the long-term decarbonisation strategy document and has opposed various aspects of the Koronivia Joint Work on Agriculture (KJWA), it has taken several steps for the decarbonization of the agriculture sector. Several agri start-ups are working in the field of carbon markets for agriculture. In the long term, Decarbonization of Agriculture sector can prove to be a vital level in achieving the Net Zero target.

### Contribution of Agriculture Sector to Carbon Emission:

- According to the United Nations' Food and Agriculture Organization (FAO), agriculture and related land use emissions accounted for **17% of all Greenhouse Gas (GHG) emissions** from all sectors in 2018.
- The Agriculture, Forestry, and other Land Use (AFOLU) sector, as defined by the United Nations (UN) International Panel on Climate Change (IPCC), **accounts for 24% of global GHG emissions**, with agriculture representing the majority of them.
- According to the Third Biennial Update Report submitted by the Government of India in early 2021 to the United Nations Framework Convention on Climate Change (UNFCCC), the **agriculture sector contributes 14% of the total GHG emissions** (Energy 75.01%; Industrial Process and Product Use 8%; and waste 2.7%, (2016 data)). Within the sector, 61.3% of GHG emissions are linked to the livestock sector, followed by 19.1% from fertiliser applied to agricultural soils, 17.5% from rice cultivation and 2.2% due to field burning of agricultural residues.

### Methods for Decarbonization of the Agriculture Sector:

Decarbonization of Agriculture can be undertaken through:

- **Agriculture Methods and Practices:** Best practices, such as cover crops and **regenerative farming**, help to reduce synthetic nitrogen inputs. **Precision farming**, including the use of drones, can monitor soil and plant health, ensuring that the **right amount of nitrogen fertilizer is applied at the right rate and right time**. **Fertile soil** enhances farm yields and incomes apart from **being a carbon sink**. Healthy soil **holds more moisture** and soil conservation methods reduce erosion.
- **Carbon Farming:** It is a system of agricultural management that helps the land store more carbon and reduce the amount of Greenhouse Gases (GHGs) that it releases into the atmosphere. (also known as carbon sequestration).
- **Decarbonizing Livestock Farming:** It includes:
  - (a) **Capturing the methane** and producing bioenergy;
  - (b) Breeding low CH<sub>4</sub>( methane) producing breeds;
  - (c) Plant-based alternatives and **lab-grown meat** have the potential to significantly reduce missions associated with the meat industry.
- **Alternate Cropping:** This contributes to GHG mitigation and is an emerging area in climate-smart farming. For example, seaweed cultivation as additive to cattle feed **reduces biogenic methane emissions**, improves feed quality, and enhances milk production.

- **Freshwater:** Agriculture consumes over 80% of freshwater in India, making conservation critical. **Micro-irrigation** with automation and **adoption of low water-intensive species** and farming practices are critical for reducing water consumption and carbon footprint. Areas under water intensive crops must be reduced through **crops diversification**, examples being oil seeds, pulses, horticulture, and forage crops.
- **Agro-forestry:** Trees act as windbreaks, reduce soil erosion, enrich soil, and filter water. Studies suggest that 5% increase at 5 yearly intervals to the existing 16 million hectares area can help mitigate India's projected emissions.
- **Bio-energy from Farm Waste:** It offers immense potential for **mitigating emissions** as well as growth in non-farm economic activity. **Manure-based community biogas plants** can support clean cooking and distributed power. IEA's India Energy Outlook 2021 estimates the potential being of 30 million tonnes Bio-CNG. **BECCS (Bio Energy with Carbon Capture and Storage)** involves capturing CO<sub>2</sub> from bioenergy plants and permanent storage. This will lead to **carbon removal** as well as negative emissions.
- **Checking Food Wastage:** About 30% of food produced each year is lost or wasted. Properly storing and more effectively distributing food in developing countries while educating retailers and consumers in developed countries **could avoid 8% of global GHG emissions attributed to waste**.
- **Carbon Markets in Agriculture:** Carbon markets tailored to farming and agricultural activities are emerging with increasing interest from farmers, private sector and governments. However, their size and scale is much smaller compared to carbon markets for industries.
- **Other Measures:** Greater consumer demand for sustainable alternatives; public-sector incentives for **effective land management** and R&D investment; expansion of carbon sinks can help in decarbonization. **Gene editing** holds promise to turn commodity crops into **nitrogen-fixing plants**, and **indoor vertical farms** are gaining in popularity for their ability to go soilless while ensuring food safety and meeting demand for local food.

#### Steps have been taken by the Government for Decarbonization of the Agriculture sector:

- The Government has launched multiple programmes like the **National Mission on Sustainable Agriculture (NMSA)** under the National Action Plan on Climate Change (NAPCC), **National Initiative on Climate Resilient Agriculture (NICRA)**, and National Adaptation Fund for Climate Change (NAFCC) which are related to low carbon transition.
- The **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)** scheme of the Government aims to improve irrigation access and raise farmers' income through solar-powered irrigation. Setting up of solar power plants on farmlands, wherever possible, and **solarising existing grid-connected pumps**, could earn additional income to farmers, besides making them **net energy producers**. Reducing energy usage from fossil fuel sources and moving towards renewables, will **reduce carbon footprints in the agriculture sector** and enhance livelihoods of smallholders.
- The **Soil Health Card Scheme** aims to rationalize the use of fertilizers. Soil-testing of over 100 million samples and suitable advice to the farmers have **promoted less-carbon-intensive agriculture** by rebalancing the use of crop nutrients, such as nitrogenous fertilisers.
- In terms of Land Use, the key elements for decarbonization are halting deforestation, rejuvenating degraded forests, and accelerating afforestation. The Government has launched **National Mission for Green India** and aims to create 2.5-3 billion tonnes of carbon sinks by 2030. The total forests carbon stock has been estimated to be 7204 million tonnes.
- The **National Policy for Biofuels/ SATAT** scheme set a medium-term target of 15 million tonnes of bio-CNG.

#### Challenges in Decarbonizing Agriculture:

- **Poor and Marginal Farmers:** A vast majority of farmers in India are poor and marginal. They lack the ability to invest in decarbonization measures.
- **Competing Choices:** Decarbonisation will require a balance between competing choices such as farmers' livelihoods as well as food security and drawing down on carbon-heavy agricultural practices. Shift to low-carbon agriculture practices may impact food security in the short term.



- **Size of Livestock:** India has the world's largest cattle population at 535.78 million livestock, according to the 20th Livestock Census, 2019. Contribution of livestock sector in total agriculture emissions exceeds 60%. Reducing emissions from such a grand scale is a challenging task.
- **Uncertain Techniques:** Low carbon options are full of uncertainties, high transaction costs with no clear modalities for payments in the near future. In addition, a technology such as organic farming can be counterproductive if practiced falsely e.g., a field flooded continuously after application of organic matter in organic rice production can emit huge amounts of GHGs.
- **Awareness and Incentives:** Lack of proper incentives for scaling up low carbon technologies, Inadequate knowledge amongst policy makers and farmers, financial complications for marginal and small farmers pose significant challenges in adoption and scaling-up of low carbon agriculture.
- **Challenges to Carbon Markets:** Climate mitigation projects in the agriculture sector, particularly those focused on storing carbon in soils, are increasingly being tied to carbon markets. But the impact of these initiatives is highly questionable:
  - (a) Agricultural offsetting schemes can be damaging e.g., some markets incentivize specific practices and can **transform agricultural land into tree plantations** (mono-plantations). Such plantations (based on single plant) may end up doing greater damage;
  - (b) Many of these offsetting initiatives also have very **uncertain benefits** for the climate, because their **impacts are both extremely difficult to quantify**, and **highly vulnerable to changes over time** e.g., carbon stored in soil may get released due to extreme weather or a change in land management practices. In addition, some **projects generate carbon credits while allowing for an overall increase in emissions**, because they only measure the carbon intensity of an activity, rather than absolute emissions;
  - (c) Such offsetting schemes tend to lock in agricultural models that are detrimental to climate goals. They have **high implementation costs** and **distract from more sustainable, cheaper, and proven options**, such as incentivizing agroecological practices. Also, nearly all projects aim to reduce emissions at the farm-level, even though **half of agricultural emissions take place outside of the farm** and are **largely driven by agribusinesses**, e.g. through the manufacturing of synthetic fertilizers and pesticides. This puts the blame on individual farmers **instead of focusing on corporate and agribusiness-led emissions**.

#### Steps should be taken for decarbonization of Agriculture Sector:

- **First**, Government policies must reorient to reduce agriculture's power subsidy bills and divert the money towards **sustainable farm sector investments** like solar power that could address challenges arising from rising use of wasteful energy in agriculture.
- **Second**, Climate finance need to be **enhanced for agriculture sector** to address issues having longer gestation period, viz biogenic methane mitigation, agro-forestry etc.
- **Third**, There is need to generate high integrity, real-time data on status of forests. Suitable studies are needed on a dynamic basis. There is a need to undertake conservation, restoration, and regeneration under an **integrated forest management framework**.
- **Fourth**, the Government should **develop a strategy to transition towards agroecology** and enable the private sector to contribute to the transition without opening the door for **greenwashing through offsetting mechanisms**.
- **Fifth**, At the global level, countries should **exclude the land sector from international carbon markets** under Article 6 of the Paris Agreement, and should instead focus on **contributing to climate finance transfers** and ensuring existing tools are used as levers for the **agroecological transition**, e.g., through the Green Climate Fund.
- **Sixth**, Carbon sequestration currently offsets about 20% of global agriculture emissions. **Increasing carbon sinks** while working to mitigate agriculture emissions could lead to a significant reduction in global carbon footprint.

#### Conclusion

- Globally, many countries have set ambitious targets to achieve net zero by 2050. India has also set a target of 2070. The Governments are moving aggressively for decarbonizing sectors like energy and transportation. However Net Zero may not be possible without the decarbonization of the agriculture sector. The onus is

more on developed countries. Yet, the Government of India should also take possible steps for decarbonization of agriculture, without compromising food security and livelihoods and incomes of farmers. This will accelerate India's transition to Net Zero.

## CORALS IN THAILAND GETTING DESTROYED

### Context:

- Recently, it is reported that a rapidly spreading disease, commonly known as **yellow band disease**, is killing **corals** over vast stretches of the sea floor of **Thailand**.
- Scientists believe **overfishing, pollution and rising water temperatures** because of climate change may be making the reefs more vulnerable to **yellow-band disease**.

### What is Yellow Band Disease?

- Yellow-band disease - **named for the colour it turns corals before destroying them** -was first spotted decades ago and has caused widespread damage to reefs in the Caribbean. There is **no known cure**.
- The Yellow Band disease is caused by a **combination of environmental stressors, including increased water temperatures, pollution, and sedimentation**, as well as increased competition for space from other organisms.
  - These factors can weaken the coral and make it more susceptible to infection by pathogens, **such as bacteria and fungi**.
- The disease's impact **cannot be reversed, unlike the effects of coral bleaching**.

### Significance of Coral Reefs:

- **Ecological Importance:** Coral reefs are one of the most diverse and productive ecosystems on Earth, **providing habitat for a wide variety of plant and animal species**.
  - They also play a critical role in regulating the **planet's climate by absorbing carbon dioxide** and protecting coastlines from erosion and storm damage.
- **Economic Importance:** Coral reefs support a variety of industries, including **fishing, tourism, and recreation**. They also provide resources for medicine and biotechnology.
- **Climate Regulation:** Coral reefs act as natural buffers against the impact of climate change by **absorbing wave energy, protecting coastlines and reducing the impact of storms** and sea level rise.
- **Biodiversity:** Coral reefs are home to a vast array of marine life, including **fish, sharks, crustaceans, mollusks** and many more. They are considered as the **rainforests of the sea**.
- **Threats:**
  - **Climate change:** Coral reefs are particularly vulnerable to the effects of climate change, which is **causing ocean acidification and coral bleaching**.
    - **Coral bleaching** occurs when coral polyps expel the algae (zooxanthellae) living in their tissues, causing the **coral to turn completely white**.
  - **Pollution:** Coral reefs are also **threatened by pollution**, including sewage, agricultural runoff, and industrial discharge.
    - These pollutants can cause coral death and disease, as well as reduce the overall health of the reef ecosystem.
  - **Overfishing:** Overfishing can disrupt the **delicate balance of coral reef ecosystems**, which can lead to the decline of coral populations.
  - **Coastal Development:** Coastal development, such as the **construction of ports, marinas, and other infrastructure**, can damage coral reefs and reduce the overall health of the reef ecosystem.
  - **Invasive Species:** Coral reefs are also threatened by invasive species, such as the **lionfish**, which can outcompete native species and disrupt the overall balance of the reef ecosystem.
- **Initiatives to Protect Corals:**
  - **Technological Intervention:**
    - **Cyromesh:** Storage of the coral larvae at -196°C and can be later reintroduced to the wild
    - **Biorock:** Creating artificial reefs on which coral can grow rapidly
  - **Indian:**
    - **National Coastal Mission Programme**
  - **Global:**

- International Coral Reef Initiative
- The Global Coral Reef R&D Accelerator Platform

## FOREST AND TREE COVER IN INDIA

### Context:

- India is lagging behind in the targets to increase the **number and quality of tree- and forest-cover plantations** set in the **National Mission for a Green India (GIM)**.
- States with significant shortfall in tree cover include Andhra Pradesh, Uttarakhand, Madhya Pradesh, and Kerala.

### How is Tree Cover Different from Forest Cover?

- Tree cover refers to the **total area of land that is covered by trees, regardless of whether or not the trees are part of a forest ecosystem**.
  - **Forest cover**, on the other hand, **refers specifically to the area of land that is covered by a forest ecosystem**, which is defined as an area with a **tree canopy density of more than 10%** and an **area of more than 1 hectares**.
- So, all forest cover is tree cover, but not all tree cover is forest cover.

### What is the National Mission for a Green India?

- **GIM** is one of the eight Missions under the **National Action Plan on Climate Change**.
  - It aims at **protecting, restoring and enhancing** India's forest cover and responding to climate change.
    - The target under the **Mission is 10 million hectares (Mha) on forest and non-forest lands** for increasing the forest/tree cover and to improve the quality of existing forest.
  - The **Ministry of Environment, Forest and Climate Change** supports the States/Union Territories for carrying out afforestation activities through this **Centrally Sponsored Scheme**.
  - Improving tree cover is critical to **sequester carbon and bolster India's carbon stocks** as part of its international commitments to mitigate greenhouse gas emissions.

### What is the Status of Forests in India?

- **About:**
  - As per the India State of Forest Report-2021, forest and tree cover in the country increased by **2,261 square kilometres since the last assessment in 2019**.
  - India's total forest and tree cover was **80.9 million hectares**, which accounted for **24.62% of the geographical area of the country**.
    - The report said **17 States and Union Territories had more than 33% of their area under forest cover**.
    - **Madhya Pradesh** had the largest forest cover, followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
    - The top five States in terms of forest cover as a percentage of their total geographical area were **Mizoram (84.53%), Arunachal Pradesh (79.33%), Meghalaya (76%), Manipur (74.34%) and Nagaland (73.90%)**.
- **Issues Associated with Forests in India:**
  - **Shrinking Forest Cover:** According to the **National Forest Policy of India**, the ideal percentage of total geographical area under forest should be at least **33% to maintain ecological stability**.
    - However, it currently covers just **24.62%** of the country's land and is shrinking rapidly.
  - **Resource Access Conflict:** There is often **conflict between the interests of local communities and those of commercial interests**, such as pharmaceutical industries or timber industries.
    - This can lead to **social tensions and even violence**, as different groups struggle to access and use the resources of the forests.



- **Climate Change:** Forest disturbances caused by climate change, **including insect outbreaks, invasive species due to climate led migration**, wildfires, and storms, reduce forest productivity and change species distribution.
  - By 2030, **45-64% of forests** in India will experience the effects of climate change and rising temperatures.
- **Government Initiatives for Forest Conservation:**
  - **National Afforestation Programme**
  - **Environment Protection Act of 1986**
  - **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**

#### How can India Enhance its Forest Cover?

- **Utilising Technology for Conservation:** Technology can be utilised such as **remote sensing**, to monitor and track forest cover, forest fire and identify areas in need of protection.
  - Also, **Potential resource mapping** can be done in unexplored forest areas, and they can be brought under **scientific management and sustainable resource** extraction maintaining density and forest health
- **Dedicated Forest Corridors:** For safe **intrastate and interstate passage of wild animals and protecting their habitat from any external influence**, dedicated forest corridors can be maintained giving a message of peaceful-co existence.
- **Promoting Agroforestry:** This practice involves **integrating trees and forest-based products** into farming systems. This can help **increase forest cover and also provide farmers with additional income** and resources.

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