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**G20**  
INDONESIA  
2022

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## **India's LiFE Initiative**

- **India's LiFE initiative** has become a **mass movement towards an environmentally conscious lifestyle**. **Covid-19** has proved that despite mankind's scientific and technological advancements, **we continue to be at the mercy of the natural world**.
- Today, the threat posed by **unmitigated climate change** is more dangerous than ever before. **A throwaway society, driven by wasteful consumerism**, is equally culpable for the deepening crisis.
- **According to Swiss Re**, the global economy could lose up to **18% of GDP by 2050** if no climate action is taken. This is a clarion call for transition towards **sustainable and eco-friendly practices**.
- The idea of **LiFE** was introduced by India during the **26th United Nations Climate Change Conference of the Parties (COP26)** in Glasgow in 2021.
- This idea **promotes an environmentally conscious lifestyle** that focuses on **'mindful and deliberate utilization'** instead of **'mindless and wasteful consumption'**.

### India's Achievements in Conserving the Environment

- **Installed Electric Capacity: India's commitment to reach 40% of installed electric capacity** from non-fossil fuel-based sources has been achieved, 9 years ahead of schedule.
- **Ethanol Blending Target: The target of 10% ethanol blending in petrol has been achieved 5 months ahead** of the November 2022 target.
  - This is a major accomplishment given that blending was hardly 1.5% in 2013-14 and 5% in 2019-20.
- **Renewable Energy Target: According to REN21's Renewables 2022 Global Status Report (GSR 2022), India was ranked third in wind power, fourth in solar power and third in renewable power installed capacity in 2021.**

### Challenges Related to the Environment in India

- **Degrading Forest, Degrading Livelihood: Poverty and environmental degradation have a nexus between them.** The vast majority of our people are directly dependent on the natural resources of the country for their basic needs of food, fuel, shelter and fodder.
  - **Environment degradation has adversely affected the poor who depend upon the resources of their immediate surroundings.** Thus, the challenge of poverty and the challenge of environmental degradation are two facts of the same challenge.
- **Submerging Healthy Environment: Forests serve catchments for the rivers.** With increasing demand for water, plans to harness the mighty river through large irrigation projects were made. Certainly, these can submerge forests, displace local people, damage flora and fauna.
  - Also, forests in India have been shrinking for several centuries owing to pressures of agriculture and other uses. **Vast areas that were once green, stand today as wastelands.**
- **Unregulated Mining:** The massive need for construction materials has led to the disappearance of many hills due to quarrying and other mining activities. Example: **Aravali Hills**,
  - Also, despite advances in renewable energy, **India is still largely dependent on thermal power plants to meet its increasing energy demand**, resulting in a rise in coal mining rates.
- **Improper Solid-Waste Management:** Among the most pressing environmental issues in India is also waste. Around **277 million tonnes of municipal solid waste (MSW) is produced every year.**
  - Currently, **only about 5% of the total collected waste is recycled, 18% is composted**, and the remaining is dumped at landfill sites.

#### Recent Government Initiatives to Tackle Environmental Degradation

- **Swachh Bharat Mission**
- **GOBARdhan Scheme**
- **Give It Up Campaign**
- **Catch the Rain Campaign**

Looking ahead

- **Towards Responsible Consumption:** There is a need to consider the **social, environmental and economic impacts of consumption**, buying greener products; consuming better – wasting less and having a more sustainable consumption.
  - Also, there is a need to **initiate transition towards a circular economy from today's 'take-make-use-dispose' economy.**
- **Sustainable Mobility:** There is a need to **rethink and restore confidence in public transport**, including the **procurement of more buses, the adoption of e-buses**, bus corridors and bus rapid transit systems with digitization of public transport.
  - The development of several **electric freight corridors** to promote electrification is also crucial to reaping the benefits of electric vehicles.
- **Pro-Planet-People:** India's **rich traditional wisdom and climate-friendly practices** make us best placed to **assume a leadership role in driving a behavior change on climate action.**
  - The world needs to know about India's LiFE initiative across the globe that **aims to unite the people as pro-planet people**, uniting them all in their thoughts and functions on the basic principles of "**Lifestyle of the planet, for the planet and by the planet**",
- **Environmental Awareness:** **School curriculums** should make environmental awareness a priority, while **ULBs and panchayats can act as ambassadors to percolate it down to the grassroots.**
- **Promoting Eco-Design:** There is a need to keep **environmental impact assessment at all stages of the product development process**, striving for products which make the **lowest possible environmental impact** throughout the product life cycle.
  - Use of **plant-based biodegradable utensils** (sal tree leaves) and **tea in clay pots (kulhad).**
  - **Furoshiki, a Japanese traditional wrapping cloth, is eco-friendly and used for wrapping gifts**, carrying goods or as decoration.
    - The reusable Furoshiki can be an **example of a sustainable alternative to traditional plastic wrapping paper.**

## **India's G20 Presidency**

- **Climate change** is a global concern and requires a well-coordinated global approach to address it.
  - In simple terms, what needs to be done is:
    - Assessing & monitoring the net stock of **GHG (greenhouse gases)** present in the atmosphere at any given time,
    - Working out ways to containing/reducing it.
- Unlike many pollutant gases that have a relatively shorter life span once emitted, **GHG remains in the atmosphere** for a fairly **long time**.
- In this context, to counter adverse impact of GHGs, India should use its power as a president of G20 to pressurize developed countries to meet their financial commitments towards climate change.
  - India will assume the presidency of the G20 group for one year from **December 2022 to November 2023**.

## **Greenhouse Gases**

- **Greenhouse gases** are gases in Earth's atmosphere that trap heat.
- They let sunlight pass through the atmosphere, but they prevent the heat that the sunlight brings from leaving the atmosphere.
- The main greenhouse gases are:
  - Water vapor
  - Carbon dioxide
  - Methane
  - Ozone
  - Nitrous oxide
  - Chlorofluorocarbons
- In short, GHG are those gases in the atmosphere that have an influence on the earth's energy balance.
  - They cause the so-called **greenhouse effect**.
- The best-known greenhouse gases, **carbon dioxide (CO<sub>2</sub>)**, **methane** and **nitrous oxide**, can be found naturally in low concentrations in the atmosphere.
  - However, the proportion has increased significantly since the beginning of the last century due to various man-made sources.



- The **Industrial Revolution** in the **19th century** and industrialization in the world added to great volumes of **GHG** in the atmosphere over time.
  - Unfortunately, the realization of their adverse impact on climate came quite late.
- Before the climate change negotiations began under United Nations Framework Convention on Climate Change (UNFCCC) in 1994, **most of the climate damage was done.**

### **Current challenges**

#### **Concerns in the climate by the emission of GHG**

- Compared to pollutant gases like **Sulphur dioxide**, which can travel up to a **few hundred kilometers**, **GHG** can travel **more than 1000 km** from the emitting source in the atmosphere.
- When excessive **Sulphur dioxide** emissions cause acid rain in areas near the emitting source, **GHG** could potentially impact climate in places far away from the source.
  - Acid rain is **rain that has been made acidic by certain pollutants in the air** such as sulfur dioxide and nitrogen oxides.

#### **Ignoring reduction of already existing GHGs in COP talks**

- **GHG** targets discussed in **COP (Conference of the Parties)** meetings under the UNFCCC framework largely focus on **containing inflows of new emissions** that would add to the GHG stock already in the atmosphere.
- While the commitment to check inflows is important, what is equally or more important is to **reduce the already existing huge stock.**

#### **Evading responsibilities by developed countries**

- In COP in **Copenhagen (2009)**, **developed countries** pledged to channel **\$100 billion** a year to developing countries by 2020 for helping them adapt to and mitigate climate change.
- "This pledge is **nowhere near being honored.**

- Developed countries have tried to further confuse the matter with accounting issues.
  - Many have come out with various win-win solutions trying to **obfuscate the need for financial transfers.**
- What is ethically wrong is that **developed countries hold developing countries responsible** for emission inflows when they aren't honouring their own commitments.
  - However, it is **the poor and developing** countries in Africa, South Asia and Latin America which suffer the most adverse impact of climate change due to a lack of resources to deal with the problem.
  - Even if these countries were to follow the emissions discipline strictly individually, they might still suffer **the climate change** consequences.

### Suggestions

- To address this, **substantial financial resources** and the **latest technologies** are required.
- Developed countries, which are responsible for creating this mess in the first place must:
  - Have better financial capacity and technological capability,
  - Have to bear the major burden for this by providing funds to developing countries and facilitate technology transfers.
- This is the basic philosophy behind the **“common but differentiated responsibilities and respective capabilities (CBDR-RC)”** principle.
  - The CBDR-RC is outlined in the UNFCCC.
  - It recognises that countries have **different duties** and abilities to address the negative impacts of climate change, but **all countries have an obligation** to address climate change.

### Back logs for India in G20 Presidency

- India has shown leadership in declaring voluntary, ambitious NDCs (Nationally determined contributions) in Paris, followed by **bold commitments in COPs** thereafter.
- Although Indian has huge resources, it should not overcommit in **international forums** on **climate change negotiations**. India has:

- 17.7 per cent of the world's population,
- 30 per cent of the world's cattle population,
- 2.4 per cent of the world's surface area,
- 4 per cent of the water resources,
- 55 per cent of energy needs met by coal
- Only a \$2,200 per capita per annum income,

### **Looking ahead**

- As India takes over the **G-20 presidency**, the main agenda should be:
  - Effective usage of our global stature
  - Lobbying power and leadership to make developed countries do what they should rightly be doing.
- The developed country members of G-20 routinely corner developing countries over the subsidy issue in these meetings.
  - India must make sure that this can be avoided and **equal participations is encouraged.**

Certain actions regarding GHG are to be taken immediately so that the activity of increasing temperature remains on hold. India under its G20 presidency must focus on this issue and collaborate with the developed country for taking steps in saving lives, that are affected by the climate change.

### **India should ban use of weedicide glyphosate**

The Ministry of Agriculture and Farmers Welfare has restricted the use of glyphosate, a **widely used herbicide**, citing health hazards for humans and animals.

- The new notification mandates that all certificates of registration for the chemical that companies have to get for its manufacture or sale have now to be returned to the registration committee.
- Failure to do so will result in appropriate action being taken under the **Insecticides Act of 1968.**

## Glyphosate

- It is an Herbicide, **developed in 1970**.
  - Herbicide is an agent, usually chemical, for killing or inhibiting the growth of unwanted plants, such as residential or agricultural weeds and invasive species
- Its **scientific name is N-(phosphonomethyl) glycine under the International Union of Pure and Applied Chemistry (IUPAC)** system of nomenclature.

### **Application:**

- It is applied to the leaves of plants to kill weeds.

### **Usage in India:**

- Glyphosate was highly accepted by **the tea planters** in the past two decades. It has a very good market size in the tea sector of West Bengal and Assam.
- Presently, **its consumption is highest in Maharashtra** as it is becoming a key herbicide in sugarcane, maize and many fruit crops.

## Concerns

### ● **Health Impacts:**


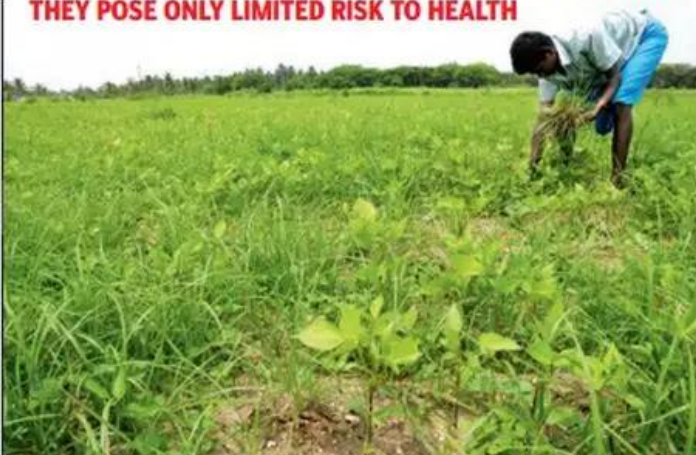

- Health impacts of glyphosate range from **cancer, reproductive and developmental toxicity to neurotoxicity and immunotoxicity**.
  - Symptoms include irritation, swelling, burning of the skin, oral and nasal discomfort, unpleasant taste and blurred vision.
- Some 35 countries have **banned or restricted** the use of glyphosate.
  - These include Sri Lanka, Netherlands, France, Colombia, Canada, Israel and Argentina.
- **Illegal Use:**
  - In India, glyphosate has been approved for use only in tea plantations and non-plantation areas accompanying the tea crop. Use of the substance anywhere else is illegal.
  - However, a 2020 study by Pesticide Action Network (PAN) India on the state of glyphosate use in the **country had worrying findings**, glyphosate was being used in **more than 20 crop fields**.
  - Majority of those using the weedicide **were not trained for doing so and did not have the appropriate safety**
- **Threatens Agro Ecological nature of Farms:**
  - The rampant use of glyphosate in non-designated areas has severe consequences.

- Allowing continued use of glyphosate in India will contribute to **widespread use of illegal herbicide tolerant crops**.
- This will endanger the agroecological nature of Indian farms, apart from spreading the toxic effects to people, animals and the environment.
- **Dangerous chemical**
  - The Government of Kerala, in a letter to the central government dated June 20, 2019, had talked about glyphosate (weedicide) being widely and indiscriminately used in paddy fields by farmers. It also referred to a Kerala agriculture university study showing higher pesticides residues in fruits and vegetables.
  - It reported that earthworms exposed to glyphosate (Roundup 360) showed a sharp decline in survival rate as well as the number of earthworm cocoons. The surface casting activity of vertically burrowing earthworms almost ceased after three weeks and reproduction of soil dwellers reduced by 56 per cent within three months after herbicide application, the report also showed.
  - There are long-term negative consequences for honey bee navigation, contamination of water bodies and serious health hazards, it highlighted.
  - The International Agency for Research on Cancer, France classified glyphosate as 'probably carcinogenic to humans' in 2015. They found 'sufficient' evidence of causing cancer in animals as well as 'strong' evidence of damaging DNA.
  - The chemical also has the ability to induce genetic damage and oxidative stress in cells, according to the report.
  - The European Chemical Agency found glyphosate causing grave damage to eyes and toxic to aquatic organisms with long-term effect. A study by the Indian Institute of Science, Bengaluru linked glyphosate with interference in functioning of the pituitary gland.
  - Glyphosate has been banned or severely restricted in more than 35 countries, according to PAN. These include Sri Lanka, Netherlands, France, Colombia, Canada, Israel and Argentina as well as six Indian states.

#### Restriction welcome but insufficient

- The new restriction on use of glyphosate is a welcome step forward. However, the central government has shied away from banning it completely despite a long-pending demand from civil society and activists working in India.

- The notification mentions no person shall use glyphosate except pest control operators. However, it is not clear who will be those pest control operators and what will be the modus operandi to implement this rule.
- Past ground experience has clearly shown that while glyphosate was allowed only for tea crops, it was illegally used for various crops across the country. A complete ban may serve the purpose to stop illegal use of this dangerous weedicide.

<p><b>CHEMICAL TRAP</b></p>  <p><b>CARBOFURAN</b></p> <p>Carbofuran is one of the most dangerous pesticides and is most often marketed under the trade names Furadan and Curater. It is extremely toxic to birds, fish, and bees. Chronic exposure can damage the nervous and reproductive systems. It is banned in the US, Canada and European Union</p>	<p>PESTICIDES THAT ARE BANNED OR SEVERELY RESTRICTED IN MOST PARTS OF THE WORLD ARE EXTENSIVELY USED IN INDIA. <b>WE DO NOT HAVE A CLEAR-CUT SYSTEM TO ENSURE THAT THEY ARE MANAGED IN A SOUND MANNER SO THAT THEY POSE ONLY LIMITED RISK TO HEALTH</b></p>  <p><b>ATRAZINE</b></p> <p>This chemical remains one of the most widely used herbicides. Atrazine is an endocrine disruptor. Studies link low-level exposure to birth defects, delayed puberty and infertility. Higher cancer risk and environmental toxicity are also of concern. It is banned in the European Union</p> 
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## India's evolving carbon market

- The Ministry for Power, New & Renewable Energy is taking steps to establish a **Carbon Credit Market** to help the country meet its **Nationally Determined Contributions (NDC)**.
- **Carbon Credits:**
  - A carbon credit (also known as carbon offset) is a **credit for greenhouse emissions reduced or removed from the atmosphere** by an emission reduction project, which can be used by governments, industry, or private individuals to compensate for the emissions they generate elsewhere.
  - Those that cannot easily reduce emissions can still operate, at a higher financial cost.
  - Carbon credits are based on the "**cap-and-trade**" model that was used to reduce sulfur pollution in the 1990s.
  - One carbon credit is **equal to one metric ton of carbon dioxide**, or in some markets, carbon dioxide equivalent gases (CO<sub>2</sub>-eq).
  - Negotiators at the Glasgow COP26 climate change summit in November 2021 agreed to create a global carbon credit offset trading market.
    - The **Kyoto Protocol** provides for three mechanisms that enable countries, or operators in developed countries, **to acquire greenhouse gas reduction credits:**
    - Under Joint Implementation (JI), a developed country with relatively high costs of domestic greenhouse reduction would set up a project in another developed country.
    - Under the **Clean Development Mechanism (CDM)**, a developed country can "**sponsor**" a **greenhouse gas reduction project in a developing country** where the cost of greenhouse gas reduction project activities is usually much lower, but the atmospheric effect is globally equivalent. The developed country would be given credits for meeting its emission reduction targets, while the developing country would receive the capital investment and clean technology or beneficial change in land use.
    - Under **International Emissions Trading (IET)**, countries **can trade** in the international carbon credit market to **cover their shortfall** in Assigned Amount Units (AAUs). Countries with surplus units can sell them to countries that are exceeding their emission targets under Annex B of the Kyoto Protocol.
  - **Carbon Markets:**
    - A carbon market **turns emission reductions and removals into tradeable assets**, thus creating incentives to reduce emissions or **improve energy efficiency**. The carbon markets can be compliance and voluntary.

- Carbon trading started formally in 1997 under the **United Nations' Kyoto Protocol on climate change** which had more than 150 nation signatories.
- Parties with commitments under the agreement agreed to limit or reduce their greenhouse gas emissions between 2008 – 2012 to 5.4% which were well below the levels of 1990.
- Emissions trading, as set out in the Kyoto Protocol, allowed **countries to sell the excess capacity of emission units** to countries that had levels well over their targets.

### **Significance of Carbon Markets**

- Carbon markets will **open up new avenues for organizations** that are engaged in developing, trading and consulting carbon credits, while stunting the growth of fossil-fuel generation capacities.
- Carbon credits will help developing countries like **India carry out economic activities, while keeping the country's carbon goals in perspective.**
  - In 2021, the global carbon credits market rose by 164 % and is expected to cross USD 100 billion by 2030.
- Carbon credits offer a way **to reward the industries and other sectors** that have developed practices involving technological innovations to reduce emissions and achieve climate targets.
- Carbon markets will play a key role in the **drive towards decarbonisation, encouraging the reduction of emissions through various schemes** in the short term with an ultimate goal of achieving **Net Zero** in the long term.
- Carbon markets are one of the most effective drivers of reducing emissions, offering the lowest-cost emission reductions and enabling India to avert a loss of USD 35 trillion.

### **Indian Emission Targets**

- India **submitted its updated NDCs** under the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC) in August 2022, in which it stressed the fact that it is a step ahead in achieving the long-term goal of **Net Zero in 2070.**
- Under the updated NDCs, India is committed to reducing the emissions intensity of its gross domestic products by **45 % from 2005 levels by 2030 and**



**achieving 50 %** of its cumulative electric power installed capacity from non-fossil fuel sources of energy by 2030.

- The country is working on expanding its supply chain in the solar manufacturing division.

### **Related Indian Initiatives**

- **PLI Scheme:**
  - Diversification of the supply chain by introducing a production linked incentive scheme for the **manufacturing of polysilicon cells into modules.**
- **Clean Development Mechanism:**
  - In India, the clean development mechanism under the Kyoto Protocol provided a primary carbon market for the players.
  - The secondary carbon market is covered by the **perform-achieve-trade** scheme (which falls under the energy efficiency category) and the renewable energy certificate.
- **Energy Conservation (Amendment) Bill, 2022:**
  - Empowers the Centre to specify norms and standards of energy efficiency for appliances, industrial equipment and buildings with a connected load over 100 kiloWatts (kW) or a contractual demand of more than 15 kilovolt-amperes (kVA).

### **Looking ahead**

- India is on the path to establishing a carbon market at the national level beginning with the voluntary carbon market and then moving on to a compliance-based market.
- The effects of climate change reduction should be favorable to sectors such as renewable energy, energy efficiency, transportation, waste, afforestation and reforestation.
- The carbon credits market favoured by appropriate regulations and policy will help in the creation of suitable opportunities for the next decade.

## The meaning and scope of Procedure established by law

- Article 21 of the Indian Constitution uses the phrase “procedure established by law”. It signifies that if a law has been passed by the Parliament by following the proper procedure, then it will be a valid law. Implementing this concept indicates that a person might be deprived of his life or personal liberty according to the procedure established by law. After the judgment of *Maneka Gandhi v. Union of India (1978)*, the Indian judiciary adopted a liberal meaning of the phrase procedure established by law to make it equivalent to the American concept of due process of law to safeguard the fundamental rights of an individual.
- In the case of ***A.K. Gopalan v. the Government of India (1965)***, the Supreme Court defined the procedure established by law under Article 21 as merely following the procedure mentioned in the statute and nothing more. As a result, a person’s ‘life’ or ‘personal liberty’ might be taken away if a law has been passed as per the procedure. The exclusion of the term ‘due’, the restriction provided by the term ‘procedure,’ and the addition of the word ‘established’ highlight the concept of Parliamentary prescription in the language used in Article 21. The Constitution of India provides the Parliament with the final say in determining the law by using the words procedure established by law.
- In ***Maneka Gandhi v. Union of India (1978)***, the Supreme Court ruled that a procedure established by law under the ambit of Article 21 should be “*fair, just and reasonable, not fanciful, oppressive or arbitrary*“, otherwise it will not be considered as a procedure at all, and the condition of Article 21 will not be fulfilled. Therefore, in our country, the phrase procedure established by law has achieved the same importance as the phrase due process of law in the American Constitution.

### Procedure established by law and due process of law

- Procedure established by law indicates that a law that has been passed by following a proper procedure is lawful even if it violates principles of fairness and equality. The rigorous attention to the procedure may increase the chance of endangering a person’s life and personal liberty. To minimise such circumstances, the Supreme Court through various judgements emphasised the significance of the due process of law.
- Due Process of Law = Legal method + the procedure must be fair, just, and not arbitrary.

Procedure established by law .vs. Due process of law

<b>Point of difference</b>	<b>Procedure established by law</b>	<b>Due process of law</b>
Meaning	It means that a law passed by the Parliament would be valid if it had undergone the proper procedure.	The due process of law theory examines not only whether an existing law takes away a person's life and personal liberty but also examines whether the law is fair, just, and not arbitrary.
Origin	Originated from the British Constitution.	Originated from the Constitution of the United States.
Provision	Article 21 of the Indian Constitution mentions the phrase procedure established by law.	The Indian Constitution does not explicitly mention the phrase due process of law.
Scope	The scope of procedure established by law is narrower.	The scope of due process of law is broad.
Role	To determine the legality of a statute by examining whether the procedure for establishing it has been followed properly or not.	It determines that the law in question is not arbitrary and unfair.
Power of judiciary	It provides limited power in the hands of the judiciary.	It provides greater power in the hands of the judiciary.
Protection	Procedure established by law safeguard individuals from the arbitrary actions of only the executive.	The due process of law protects individuals from both arbitrary executive and legislative action.

Impact of the doctrine	Strict adherence to the legal procedure raises the risk of negatively impacting life and individual liberty.	Pay attention to all the legal rights and gives personal privacy to all individuals.
Emphasis of the doctrine	This doctrine emphasises more on the wisdom of the legislature and the power of public belief in the nation.	The due process of law gives a wide range of power in the control of the Judiciary.

Although the application of the doctrine of procedure established by law and due process of law are different but there are certain similarities between them which are mentioned below:

- In the Indian polity, both the procedure established by law and the due process of law are essential principles.
- The Supreme Court is the highest court in both situations. The Supreme Court of India decides on the legality of the legislation.
- The procedure established by law is specified in the Indian Constitution and therefore is lawful in the country. However, in several recent Supreme Court decisions, the issue of due process has been brought back into focus.

#### Procedure established by law and Article 21 of the Indian Constitution

- Article 21 is a fundamental right under Part III of the Constitution. It is considered to be one of the most important and progressive articles in our Constitution. Article 21 can only be used whenever the 'State,' as defined in Article 12, deprives an individual's life or personal liberty. As a result, infringement of the right by a private person falls beyond the scope of Article 21.
- Article 21 of the Indian Constitution provides, "No one shall be deprived of his life or personal liberty unless in accordance with the procedure established by law." At the international level, the phrase procedure established by law has also been used in relation to the right to life and personal liberty under Article 31 of the Japanese Constitution of 1946, which specifies, "No one shall be stripped of his life and personal liberty, and no criminal punishment should be levied, apart from procedure established by law."

Article 21 of the Indian Constitution guarantees two basic rights:

- The right to life;
- The right to personal liberty.
- The basic meaning of Article 21 is that the two rights mentioned above cannot be taken away without following the proper procedure. This means that the above rights, i.e., life and personal liberty, can be taken away if the legislature follows the proper procedure. The ambit of this concept was expanded in the case of *Maneka Gandhi v. Union of India* (1978), which will be addressed later in this article.

#### Judicial pronouncements on the procedure established by law

- In the case of **A.K. Gopalan v. Government of India (1965)**, AK Gopalan, a political leader, was arrested in Madras under the Preventive Detention Act, 1950. He claimed that the action taken under the Prevention Detention Act violated his fundamental rights under Article 14, Article 19, and Article 21 of the Indian Constitution. He also claimed that the phrase procedure established by law in Article 21 refers to due process of law. In his case, the procedure followed was not proper, resulting in a breach of Article 21 of the Indian Constitution.
- The Supreme Court ruled that if the government takes away an individual's freedom in accordance with the procedure established by law, i.e., if the imprisonment was done by following the proper procedure, then it will not be considered a breach of Articles 14, 19, and 21 of the Indian Constitution. The Court took a narrow interpretation of Article 21 in this case. The Court took Article 21 very literally in this case and ruled that the expression procedure established by law indicates that a procedure established in a statute can take away the right to life and personal liberty.
- However, in this case, Justice Fazal Ali gave a dissenting opinion. He said that the meaning of the term procedure established by law also implies the due process of law, which indicates that no one should be left without the opportunity of being heard i.e. audi alteram partem (no person shall be left unheard) since it is one of the important principles of natural justice.
- The Court in *Satwant Singh Sawhney v. D. Ramarathnam* (1967) determined that the procedure established under Article 21 to deprive a person's life and liberty has to be examined under Article 14 to check its validity and fairness. This decision started a new trend in the legal system, which was confirmed in *R.C. Cooper v. Union of India* (1970), in which the Supreme Court unequivocally said that the procedure followed under Article 21 must be reasonable.

- In 1975, when a national emergency was imposed, the Court went against its own decision. In the case of ADM, Jabalpur v. Shivakant Shukla (1976), the Court upheld the detention under the Maintenance of Internal Security Act (MISA), 1971, while rejecting Article 21 entirely. The Court ruled that during an emergency, Article 21 is deemed to be suspended (overturned by the Puttaswamy case). So, in this case, the Court will only look at the literal meaning of the procedure established by law. The Court did not acknowledge whether the act of government (MISA, 1971) was just, fair, or reasonable.
- In the case of **Maneka Gandhi v. Union of India (1978)**, the passport of Maneka Gandhi was detained by officials under the provisions of the Passports Act, 1967. The petitioner went to the Supreme Court under Article 32 and argued that the government's act of seizing her passport was a clear violation of her personal liberty under Article 21. This decision greatly expanded the ambit of Article 21 and accomplished the purpose of making our country a welfare state, as mentioned in the Preamble. The Court concluded that the procedure established by law ought to be fair, just, and reasonable. The Court noted that the procedure specified by law for depriving a person of his right to life and personal liberty must be proper, reasonable, and fair, rather than discretionary, whimsical, and oppressive.

#### Post Maneka Gandhi judgment

In the case of **Mathews v. Eldridge (1976), United States** Supreme Court established the triple test to assess whether the legislation violates individual freedom or not. A law has to satisfy three tests to become a valid law. Post Maneka Gandhi's judgment, the Supreme Court of India also adopted this test. The three tests are as follows:

1. Whether there is any existing provision that allows the state to deny any person's life and liberty;
2. Whether the Parliament that has passed the concerned legislation has the authority to do so;
3. Whether the assembly fulfilled the proper procedure while passing the legislation.

If a law fails to fulfil any of the abovementioned conditions, then it would be considered an arbitrary act of the state.

#### Summing up

Before the Maneka Gandhi case, the extent of Article 21 of the Indian Constitution was very limited. However, in the Maneka Gandhi case, the Supreme Court broadened the

ambit of Article 21 of the Indian Constitution by declaring that due process of law is an inherent element of procedure established by law. Moreover, an individual's life and freedoms can be taken away only when the following requirements are satisfied:

- The law must be valid.
- There must be a proper procedure.
- That procedure should be just, fair, and not arbitrary.

If the procedure provided by law is frivolous, oppressive, or unreasonable, then it should not be considered a procedure at all. A system has to be reasonable or just in order to represent the idea of natural justice. Natural justice seeks to establish justice in the law.

### **Focus on malnutrition, not hunger**

- Recently, the government has rejected the **Global Hunger Index** report, claiming it is an effort to "taint" India.
  - India was rank **107 among 121 countries** in the GHI, 2022.
- It also has questioned its methodology without noticing the substantial efforts made by the government to improve access to foodgrains by India's poor.

### **Limitations of GHI**

- **No database for regional level:**
  - GHI measures and ranks countries on a **hunger index** at the Global, Regional, and National levels.
    - The Data of the sub-national level isn't included where some Indian states fare better.
- **Disproportional indicators of GHI:**
  - The **GHI's** stated aim is to reduce hunger around the world.
  - But its methodology focuses **disproportionately on less than five-year-olds.**
- **No far-reaching picture:**
  - **GHI** directs governmental attention to cross-national comparisons, resulting in the rejection of underlying issues and side-tracking the public discourse.
- **Lack of theoretical clarity:** The preamble of **GHI** describes:

- “Communities, civil society organisations, small producers, farmers, and indigenous groups... shape how access to nutritious food is governed.”
- **This suggests that GHI** uses childhood mortality and nutrition indicators but sees hunger as a food production challenge.
- However, as per **FAO (Food & Agricultural Organization)**:
  - India is the world's largest producer and consumer of grain
  - It is the largest producer of milk; when the per capita intake of grain, vegetables and milk has increased manifold.
- Therefore, it is unacceptable to club India with countries facing serious food shortages, which is what GHI has done.

### **Unusual Nomenclature of GHI V/S actual Fact**

- The **nomenclature of GHI suggests a link to starvation**. It might seem that a lot of people in the country do not get basic food. That is not the case for India.
- **India** has been giving literally **free food** (rice/wheat), **10/kg** per person per month to more than **800 million people** since April 2020 in the wake of **Covid-19**.
  - It also exported more than **30 MMT** of cereals in 2021.
  - This helped avert starvation deaths not only in India but also in many other countries.
- India's gesture has been applauded by multilateral agencies like the **UNDP, IMF, World Bank**, etc.
- The **GHI** hasn't consider the mega scheme of free food under the **PMGKY (Pradhan Mantri Garib Kalyan Yojana)**
  - Instead, it has relied on an “opinion survey” of 3,000 in a country of 1.4 billion.
- The use of the word hunger is abhorrent given the facts, but there is no denying that in India, nutrition, particularly child nutrition, continues to be a problem.

### **The NFHS Reliability of Hunger**

- The **National Family Health Survey (NFHS)** does a good job of providing comparative state-level data, including the main pointers that determine health and nutrition.
- NFHS provides estimates of:
  - Underweight (low weight for age),
  - Stunting (low height for age)



- Wasting (low weight for height).
- These conditions affect preschool children (those less than 6 years of age) disproportionately.
  - It also **compromises a child's physical and mental development** with increase in the vulnerability to infections.
- Moreover, undernourished mothers (attributable to social and cultural practices,) give birth to low-birth-weight babies that remain susceptible to infections.
  - That can make them handicaps which can ruin their childhood and adolescence.

### Issues related to Nutrition & Solutions

#### **Breastfeeding:**

- It is one of the first child nutrition challenges.
- **WHO and UNICEF recommendation:** The breastfeeding should be initiated within the **first hour of birth** and infants should be exclusively breastfed for the first six months.
- **The NFHS 5 on Breastfeeding:**
  - The % improvement of children who were exclusively breastfed when under six months, rose from **55 per cent in NFHS 4** to **64 per cent in NFHS 5**.
    - This indicates progress, but it is not enough.
  - Only **42 % of infants** are breastfed within one hour of birth, which is the recommended norm.
  - By not being breastfed, an infant is denied the benefits of acquiring antibodies against infections, allergies and even protection against several chronic conditions.

#### **Young child feeding practices:**

- The root cause of this widespread practices includes:
  - Not introducing semi-solid food after six months
  - Prolonging breastfeeding well beyond the recommended six months
  - Giving food lacking in nutritional diversity
- **NFHS 5** shows that the improvement has been marginal over the last two reports and surprisingly, states like Maharashtra, Rajasthan, Assam, UP and Gujarat are at the tail end.

### **Poor nutrition:**

- The third issue is the outcome of poor nutrition.
- According to **NFHS 5**, the percentage of stunted, wasted and underweight children is **36 per cent, 19 per cent and 32 per cent** respectively.

### **Good Food:**

- It is worrisome that states like **Bihar, UP and Jharkhand** have fallen from their own levels five years ago.
- Overall, there has been an **eight-percentage** point increase in children suffering from anaemia from **59 per cent in NFHS 4** to **67 per cent in NFHS 5**.
- This has a lot to do with the mistaken belief that manufactured snacks are **“good food”**.
- This phenomenon has been found in urban slums and in villages.

### **No Cleanliness**

- **The NGO named CHETNA** that works for women's and children's health and nutrition across three states (Gujarat, Madhya Pradesh, and Rajasthan) has observed home practices:
- The young children are allowed to run around while eating, exposing the food to flies, dust and heat.
- The children are weaned on watery liquid from cooked grain when they need nutrition-dense food to develop.

Several initiatives have been added to resolve the problems, but most beneficiaries of these food distribution programmes are kids attending anganwadis or schools, adolescents, and pregnant and lactating mothers. This must continue but newborns, infants, and toddlers need attention too. Which can help mothers to better the lives of their infants and toddlers right inside the home by measuring and demonstrating how much diet, food intake and child-rearing practices matter.

## **A Brewing Crisis In The Indian Coffee Industry**

- **Coffee cultivation of India** is facing serious damages due to **changes in climate patterns**.
- **Hundreds of coffee growers in Kodagu, Chikkamagaluru and Hassan districts** of Karnataka are worried due to destruction caused by heavy rains between July and September.
- The impact of the **rains continues, with diseases affecting plants**, and estate infrastructure suffering long-term damage.

### **Challenges for India's Coffee Industry**

#### **1. Climate Changes Concerns**

- **Drastic changes in climate patterns** over the last few years have adversely impacted India's coffee production and the quality of the crop.
- There were **dry spells between 2015 and 2017** and **unseasonal heavy rains, floods** and landslides between 2018 and 2022.
- As per **Coffee Board of India's post-blossom estimate**, production for the 2022 crop year was at 3,93,400 metric tonnes.
  - But given the **extreme climatic conditions**, it is anticipated to be **some 30% lower**.
- Most growers fear that the frequently **occurring pattern of droughts and floods** could wipe out plantations.
- **Sturdy and weather-resistant varieties of coffee** may help, but the government is not providing adequate funds to coffee research stations to develop these.

#### **2. Cost of Financing and Existing debts concerns**

- Climate change has only compounded **the financial issues of coffee growers**.
- The **volatility in market prices and the reduced influence of producers** in the value chain render coffee cultivation an increasingly **loss-making proposition**.
- Coffee is rapidly turning out to be a **buyer-driven commodity market**.
- More than **75% of Indian coffee production** is exported.
  - This has an **impact on the cost competitiveness of Indian coffee** vis-à-vis the coffee that is exported from other producer regions, especially since those growers get their finances **at very low interest rates**.
- The **cost of financing is one of the biggest challenges** of the coffee sector. Most private banks insist that **growers provide collateral for financing**.
- Since small and medium-size growers are **not in a position to provide collateral**, the interest rates are high.

- International interest rates are **negligible, mostly in single digits**. This is an advantage for **competing coffee-producing regions**.
- There were around 1,98,000 short-term loan accounts and 5,05,000 long-term loan accounts outstanding, **amounting to ₹395.54 crore and ₹40.4 crore**, respectively.
- The increase in input costs, along with the growth in labour and benefit costs, which account for **60% to 70% of all plantation expenses**, has left coffee farmers with very little cash on hand.
- Banks have **not restructured the loans**.
- The accounts of many coffee growers have **turned to non-performing assets (NPAs)**.
  - Coffee growers are now **facing recovery proceedings under the SARFAESI Act** (Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act).
  - Under the act, banks have the right to **possess the security provided by the defaulting borrower** against the loan and sell it to recover losses, without any intervention by any court of law.

### 3. **Low productivity**

- In India, production of coffee is low while the **cost of production is on the rise** compared to other coffee countries such as Vietnam and Brazil.
- In Brazil, **labour charges account for 25%** of the entire production cost, but in India, it **accounts for about 65%**.
- It is possible to bring down the cost of production to some extent through mechanisation, but India's coffee **terrains and topography limit this possibility**.
- At the same time, Indian coffee has a **unique positioning as it is shade-grown** and grown at elevations, while other major producing countries grow coffee in flat lands.
- There is **no official price setting mechanism even in the domestic market**. So, traders and curers are **fixing prices**, and **growers are at their mercy**.
  - The cost of production per acre has gone up substantially to **₹80,000-85,000 from ₹50,000 five years ago**.
- The cost of inputs around coffee has increased by **almost 20% in a year**.
- Plantations face power cuts during the summer months. This makes irrigation **expensive as the cost of diesel is high**.
- The **high cost of inputs** leads to the high cost of production which is the main problem for coffee growers. It makes coffee **cultivation unviable**.
- Earlier, the cost of production would go up **by 4% to 5% annually**, but now it goes up at least **20% annually**, notes President of India Coffee Trust and a large planter in Kodagu.

### 4. **Shortage of Labour**

- There is increasingly a **shortage of labour while the cost of labour is on the rise** in the coffee sector.
- The children of workers in all the three coffee-growing States Karnataka, Tamil Nadu and Kerala prefer to **move to urban areas**.

- This means plantations are forced to **depend heavily on migrant labours** who are unskilled.
  - As **wage costs are not linked to productivity**, growers are mandated to pay the usual wage along with other social costs such as housing and medicines.
    - It adds up some **30% more to the wages**.
  - Most plantations simply **don't find skilled labour**, especially for tasks such as shade-logging, pruning, and borer tracing.
- 5. Identity crisis for India in global markets**
- Although the country started exporting coffee actively **before the 19th century**, Indian coffee is still facing an identity crisis in global markets.
  - Indian coffee is **highly rated and commands premium prices** in the global coffee markets.
  - India sells **Robusta and Arabica at a price higher** than the hugely advertised Colombia is an indication of the brand building done by the Indian exporter and the quality of Indian coffee.
  - Yet, Indian coffee **does not have an individual brand identity** in the international markets.
  - As per Former member of Coffee Board, **Indian coffee was never considered a separate origin coffee**. It was always used as filler.
    - This is despite **Indian coffee offering innumerable flavours**, aromas and blends.
  - Coffee was an **important export item for the Union government**, when the commodity's exports were in the range of ₹4,000-₹5,000 crore annually.
    - But around 20 years ago, with the IT and services sector dominating the exports industry, **coffee lost its prominence in the power corridors**, especially in the Ministry of Commerce.

### Importance of Indian Coffee Industry in the Global Market

- Coffee has **high value and high imagery** potential at home and overseas markets.
- India has several **speciality coffees and over three dozen estate brands** for the global markets.
- Indian green coffee on its own is **capable of fetching premium prices** in the global markets.
- Even after getting out of the shackles of the **pooling system in 1996**, the bean maintained a special status as a valuable export commodity for a long time.
  - The Coffee Act introduced a pooling system, where each planter was required to distribute their crop to a surplus pool managed by the Coffee Board of India.

- After the liberalisation, the coffee Board longer maintains its monopolistic control over the marketing of Indian coffee.
- It earned recognition across the agriculture, commerce, finance and environment ministries as a **serious forex earner for the exchequer**.
- India's share in the global coffee market **may be less than 5%**.

### **Suggestions**

- **A special package** in line with the Special Coffee Term Loan should be implemented **to rescue coffee growers**.
- Coffee plantations should be excluded from the **provisions of the SARFAESI Act** and from the purview of CIBIL (Credit Information Bureau India Limited).
- **A lot of effort, time and energy** has to be invested in training migrant labours.
- The branding and promoting Indian coffee better in the global market, **finding alternative sources of revenue** and increasing domestic consumption is necessary.
- Th growers should create **additional revenue streams** through inter-cropping or through innovative measures.
- The coffee growers could try **planting exotic fruit-bearing trees, food crops, or getting into fish farming**, dairy farming, apiary or green tourism to increase incomes from their coffee gardens.
- Considering the change in land use, the government could **permit growers to plant alternate crops in a land** not suitable for coffee cultivation.
  - **Timely conversion** will prevent growers from going financially sick.

The coffee community in India, comprising close to 4 lakh coffee growers, hundreds of large planters, associations that represent growers, planters, curers and exporters, and over a dozen Fair Trade Organisations, hopes to boost coffee in the domestic and international markets and counter the problems the industry faces. It is hoped that Coffee Act and the new Coffee (Promotion and Development Bill), 2022, will bring change that all the stakeholder are looking for.

## **Most govt Schemes Face Massive Cuts**

- It is seen that government is **reducing number of schemes in various ministries** rather than focusing on better public service delivery.
- Over **50% of current central government-sponsored programmes** have been eliminated, absorbed, redesigned, or rationalised into other programmes over the past three years.

### **Reduction of govt schemes in different Ministry**

#### **Ministry of Women and Child Development**

- **Mission Shakti, Mission Vatsalya, Saksham Anganwadi, and Poshan 2.0** are only three of the **19 programmes** being offered by the Union Ministry of Women and Child Development.
- The "**Beti Bachao, Beti Padhao**" scheme was one of 14 schemes that were **replaced by Poshan 2.0. Mission Shakti.**

#### **Ministry of Animal Husbandry and Dairy**

- In the case of the Ministry of Animal Husbandry and Dairy, just **two schemes** remain out of **12**.
- Additionally, the Ministry has **ended three schemes which include Dairying** through Cooperatives, National Dairy Plan-II, etc.

#### **Ministry of Agriculture and Farmers' Welfare**

- For Ministry of Agriculture and Farmers' Welfare, there are now three out of **20 schemes** including **Krishonnati Yojana**, Integrated Scheme on Agricultural Cooperatives and the **Rashtriya Krishi Vikas Yojana**.
  - However, there is **little information on the National Project on Organic Farming** or the **National Agroforestry Policy**.

### Challenges and Problems

- There are challenges such as **funding cuts, disbursement and utilisation of funds.**
- As of June 2022, ₹ 1.2 lakh crore of funds meant for central government-sponsored schemes are with banks which earn interest income for the Centre.

### Challenges for Women safety schemes

- **The Nirbhaya fund (2013)** focuses on funding projects to **improve the public safety of women** in public spaces and encourage their participation in economic and social activities.
- The **₹ 1,000 crore was allocated to the fund annually (2013-16)**, and remained largely **unspent.**
- As of **FY21-22, ₹ 6,214 crore** was allocated to the fund since its launch, but only **₹ 4,138 crore was disbursed.**
- Of this, just **₹ 2,922 crore was utilised; ₹ 660 crore was disbursed** to the Ministry of Women and Child Development, but only ₹ 181 crore was utilised as of July 2021.
- Yet, a variety of **women-focused development schemes across States** are being **turned down or ended.**
  - Meanwhile, women continue to **face significant risks while in public spaces.**

### Challenges for Farmers Schemes

- Fertilizer subsidies have decreased over the past few years, and actual government spending on fertilisers in **FY20-21 totalled 1,27,921 crore.**
  - However, this hasn't spared **farmers either.**
- In **the FY21-22 Budget**, the allocation was **₹ 79,529 crore** (later revised to ₹ 1,40,122 crore amidst the COVID-19 pandemic).
- In the **FY22-23 Budget**, the allocation was **₹ 1,05,222 crore.**
- **Allocation for NPK fertilizers** (nitrogen, phosphorus, and potassium) **was 35% lower** than revised **estimates in FY21-22.**
- Such budgetary cuts, when fertilizer prices have risen sharply after the Ukraine war, have led to **fertilizer shortages and farmer anguish.**



### **Challenges for Employment Schemes**

- The allocation for the Mahatma Gandhi National Rural Employment Guarantee Act (**MGNREGA**) **went down by 25%** in the FY22-23 Budget.
- While earlier this year, with the allocated **budget at ₹ 73,000 crore** when compared to the FY21-22 revised estimates of ₹ 98,000 crore.
- The **Economic Survey 2022-23 has highlighted** that demand for the scheme was **higher than pre-pandemic levels** as rural distress continues.
- Anecdotal cases show that **actual funding disbursal for MGNREGA** has often been delayed, leading to a decline in confidence in the scheme.
- The **Garib Kalyan Rojgar Abhiyaan** (June 2020, for a period of 125 days) sought to **provide immediate employment and livelihood opportunities** to the rural poor.
  - In this scheme, **50.78 crore person days of employment were provided** at an expenditure of approximately ₹ 39,293 crore (against a budget of ₹ 50,000 crore).
    - However, the **scheme subsumed 15 other** schemes.
- With between **60 million to 100 million migrant workers** who seek informal jobs, such a scheme should have been expanded.

### **Challenges in Health Sector**

- For **Accredited Social Health Activists (ASHA)**, who are the first responders, there have been delays in salaries for up to six months.
- Regularisation of their jobs continues to be a struggle, with wages and honorariums stuck at minimum levels.

### **Challenges for Wildlife Schemes**

- Funding for wildlife habitat development under the Ministry of Environment, Forest and Climate Change has declined: **from ₹ 165 crore ( FY18-19), to ₹ 124.5 crore (FY19-20), to ₹ 87.6 crore (FY20-21).**
- Allocations for **Project Tiger have been slashed ₹ 323 crore ( FY18-19) to ₹ 194.5 crore ( FY20-21).**

### **Suggestions**

- Rather than downsizing government schemes and cutting funding, one should **right size the government**.
- The **govt need to build capacity for an efficient civil service** to meet today's challenges, i.e., providing a corruption-free welfare system, running a modern economy and providing better public goods.

Rather than having a target of fewer government schemes, public should raise our aspirations towards better public service delivery.

## **An Editorial Scan on Remote Voting Facility in India**

The Chief Election Commissioner has proposed to include the 'remote voting facility' in the upcoming 2024 Lok Sabha elections. This will enable voters to cast votes from remote locations and improve voter turnout. However, the success of this method depends on various other steps including the creation of enabling infrastructure for remote voting. In this article, we will explain the remote voting facility and its challenges in India.

### **Current Scenario**

- Firstly, the first pilot project of the remote voting facility is likely to start in the next 2-3 months.
- Then, a team of experts from IIT Madras and other IITs is working on drafting the modalities of 'remote voting' or 'blockchain' voting system in full swing.
- Other projects in pipeline:
  - Introduction of E-Voting for NRI(Non-Resident Indians) in the next 6-12 months.
  - Linking of Aadhaar card with EPIC (Electoral Photo Identity Card). This will improve voter identification at polling stations.

### **Remote Voting Facility (RVF):**

- It will enable a voter to cast his or her vote from any polling station in the country.
- It will remove the compulsion on voting only at the domicile polling station. (As the voter is registered in his domicile).
- The project is being developed by the IIT-Madras using **blockchain technology**.

### **Blockchain Technology:**

1. A blockchain is a distributed ledger of information which is replicated across various nodes on a “peer-to-peer” network (P2P Network)
2. The data exists on multiple computers at the same time. It constantly grows as new sets of recordings or blocks get added to it in a decentralization manner.
3. All transactions that occur on a standard Blockchain are **verified and signed with cryptography** to ensure **security and anonymity**.
  - Cryptography: It is the process of converting ordinary plain text into unintelligible text and vice-versa.
  - The intended person can encrypt the coded message and use them.
4. The ledger can record many transactions such as monetary transactions, property transfer, and even ballot storage.

### **Probable working of Remote Voting Facility**

Blockchain is a decentralized, transparent, and an encrypted data technology. This **could potentially help to minimize election tampering**. Further, the Blockchain can also **maximize polling** in elections. The probable implementation will include the following steps.

1. In the first stage, the user's voter identity will be **verified and authorized** through a multi-layered identification system. This system can have web cameras and biometric identification. This will prevent duplication.
2. In the second stage, a **blockchain-enabled personalized e-ballot paper** will be generated. The citizens will use this paper to cast his/her vote.
3. In the third stage, an **encrypted blockchain hashtag (#) will be created**. This hashtag will then be sent to all the people in the chain. So, the person cannot cheat his/her vote in other locations.

### **Significance of Remote Voting Facility (RVF)**

1. **Firstly, Higher Voter Turnout:** The voter turn in the 2019 Lok Sabha elections was 67.11% across 542 constituencies. The RVF can increase the voter turnout in the upcoming Lok Sabha election.
2. **Secondly, Promote Inclusivity:** Individuals who are 'on the move' like students, patients, migrant labourers, essential service providers, etc. will become part of the electoral process.
3. **Thirdly, Flexibility:** RVF gives more flexibility to voters. An individual can cast his/her vote from multiple locations and not solely from one registered polling station.
4. **Fourthly, Greater Political Accountability:** RVF will give a voice to unheard groups like migrant workers. The contesting candidates generally did not concern with them, as they will not vote in elections.
5. **Fifthly, Strengthens Representative Democracy:** RVF will ensure more eligible voters cast their vote. Thus, it will help in fulfilling the ambition of the representative democracy.
6. **And lastly, Fulfils Constitutional Mandate: Article 326** of the Indian Constitution has given voting rights to every individual above 18 years i.e. **universal adult suffrage**. The spirit of this article calls for ensuring universal voter turnout in elections and RVF can help us move closer towards this.

### **Challenges with Remote Voting Facility**

1. **Cyber Threats:** As RVF is based on blockchain, therefore it might be attacked by hackers which would distort the final result.
2. **Privacy Concern:** The process involves saving a user's biometrics and facial data. Any misuse of such by concerned authorities or hackers would undermine the right to privacy.
3. **Stakeholder's Confidence:** Nowadays, political parties and candidates are questioning the credibility of EVMs. Instilling trust over RVF will be a challenging task.
4. **Confidentiality of Voting:** As the RVF facility will be availed in front of an authorized officer, the secrecy of the voting process might get jeopardized.

### **Suggestions to improve Remote Voting Facility**

1. The government has to do a **wider consultation** with all the concerned stakeholders before the rollout of RVF. This includes political parties and civil society groups (like the Association for Democratic reforms).
2. In the pilot phase, the Parties and candidates should **get timely notifications of RVF**. By providing real-time information can **strengthen trust** in the electoral process.
3. Also, The Election Commission should organise **the RVF hackathons** in order to build **greater public confidence**. So that the 'didn't want to vote' category people also cast their vote with confidence.
4. For ensuring a universal voter turnout, **awareness generation** should be done.
5. Further, till the RVF develops, **easing and enhancing the process of postal ballot** is desired.
  - India used the Electronically Transmitted Postal Ballot System (ETPBS) in 2019 Lok Sabha Elections. The ETPBS helped the armed forces, central paramilitary forces and central government officers working in Indian missions abroad to cast their vote.

Technology has played a pivotal role in strengthening the electoral process of the world's largest democracy. For example, the introduction of EVMs, VVPAT machines, C- Vigil App, etc. The launch of RVF will be a significant step. But the apparent challenges have to be resolved first. This will make Remote Voting a safe, secure, trustworthy, and transparent process.

### **Expanding biosphere reserves across the world**

- The first '**The International Day for Biosphere Reserves**', was celebrated in November 2022.
- The **World Network of Biosphere Reserves (WNBR) was formed in 1971**, as a backbone for biodiversity conservation, ecosystem restoration, and living in harmony with nature.
- There are now 738 properties in 134 countries, including **12 in India, four in Sri Lanka, and three in the Maldives**.
  - **Bangladesh, Bhutan, and Nepal** do not have biospheres as yet.

## **Biosphere reserves**

- Biosphere reserves are **learning places for sustainable development**.
- They are sites for **testing interdisciplinary approaches** to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity.
- They are places that **provide local solutions to global challenges**.
- Biosphere reserves include **terrestrial, marine and coastal ecosystems**.
- Biosphere Reserves involve local communities and all interested stakeholders in planning and management. They integrate **three main "functions"**:
  - **Conservation of biodiversity** and cultural diversity
  - **Economic development** that is socio-culturally and environmentally sustainable
  - **Logistic support**, underpinning development through research, monitoring, education and training.

## **Importance of the World Network of Biosphere Reserves (WNBR)**

- It is a **unique tool for cooperation** through **sharing knowledge, exchanging experiences, building capacity, and promoting best practices**.
- Help extended through the network is of great importance because the **ecological carrying capacity of the planet earth has been exceeded**.
- The best concept for **'Living in Harmony with Nature'** that exists in the United Nations system is the WNBR.
  - It makes these places more important today than ever before, where humans are thriving and relearning how to live with nature.
- Biosphere reserves have all **developed science-based management plans**, where local solutions for sustainable human living and nature conservation are being tested, and best practices applied.

## **Designation of a site as a Biosphere**

- All biosphere reserves are **internationally recognized sites on land, at the coast, or in the oceans**.
- Governments **alone decide which areas to nominate**.
- Before approval by **UNESCO, the sites are externally examined**.
- If approved, they will be managed based on a plan, reinforced by credibility checks while remaining under the sovereignty of their national government.

### **Biosphere reserves and opportunities**

- In South Asia, over **30 biosphere reserves have been established.**
- The first one was the **Hurulu Biosphere Reserve, in Sri Lanka**, with 25,500 hectares of tropical dry evergreen forest.
- In India, the first biosphere reserve was designated by UNESCO in 2000, namely, the blue mountains of the **Nilgiris stretching over Tamil Nadu, Karnataka, and Kerala.**
- In the wake of the current scenario and considering the massive long-term threats to human survivability (besides pandemics and armed conflicts), such as **biodiversity loss, climate change, pollution, and population dynamics, accelerated by the blind belief** in technological solutions for all problems, the world needs many **more biosphere reserves globally.**
- In the context of this, South Asia offers countless options.

### **Opportunities in India**

- India is a vast sub-continent, an **emerging superpower of unlimited opportunities.**
- It has become an **important global player in environmental sustainability issues.**
- India is likely to become the **world's most populated country in 2023.**
- **Spain** is one of the leading participating **WNBR countries globally, with 53 sites.**
- In a comparison with the surface size of Spain to India (ca. 3.3 million km<sup>2</sup>), and India's human population of ca. 1.4 billion people, it appears a good idea to carry out a potentiality analysis of biosphere reserves in India, with a focus on the **seven sisters in north-east India.**

### **Looking ahead**

- Some of the countries in **South Asia do not yet have any or enough biosphere reserves.**
  - In most, if not all cases, the political will is certainly there, but there is a lack of know-how and financial resources.
- **More financial support** from the richer nations and the private sector would be desirable to advance biosphere reserves in these countries.

- The existence of the new **World Network of Mountain Biosphere Reserves** provides a welcome opportunity for **Bhutan and Nepal to establish their first biosphere reserves and participate in the world network.**

With at least one biosphere reserve per country in **Bangladesh, Bhutan and Nepal until 2025** (with additional biosphere reserves in India's North-East and along the coasts) it will give realization to millions of people that a better future is truly possible — one where people will truly live in harmony with nature.

**Note:-**

**Biosphere Reserves in India**

S. No.	Name	Date of Notification	State
1	Nilgiri (Oldest)	1986	Tamil Nadu, Kerala and Karnataka
2	Nanda Devi	1988	Uttarakhand
3	Nokrek	1988	Meghalaya
4	Great Nicobar	1989	A&N Islands
5	Gulf of Mannar	1989	Tamil Nadu
6	Manas	1989	Assam
7	Sunderbans	1989	West Bengal
8	Simlipal	1994	Odisha
9	Dibru-Saikhowa (Smallest)	1997	Assam



10	Dehang-Dibang	1998	Arunachal Pradesh
11	Panchmarhi	1999	Madhya Pradesh
12	Khangchendzonga	2000	Sikkim
13	Agasthya Malai	2001	Tamil Nadu and Kerala
14	Achanakamar- Amarkantak	2005	Madhya Pradesh and Chhattisgarh
15	Kachchh (Largest)	2008	Gujarat
16	Cold Desert	2009	Himachal Pradesh
17	Seshachalam Hills	2010	Andhra Pradesh
18	Panna	2011	Madhya Pradesh

### **Strengthening Pollution Control Boards**

- India's **air pollution** crisis is deeply embedded in a bewildering range of sectors and governance issues.
- Over 80% of Indians are exposed to air pollution. As a result, India is witnessing a **public health crisis** of epic proportions.
- **The Government of India** has passed various laws and policies to control and prevent this rapid environmental degradation.
  - However, these laws and policies, so far, haven't been implemented strictly-thereby leading to an insignificant effect.

### **CPCB**

- **The CPCB** is a statutory organization constituted on **22 September 1974** under the **Water (Prevention and Control of Pollution) Act, 1974**.
- In the early days under this Act, its main function was to promote cleanliness of streams and wells in different areas of the States.
- The Board became **fully functioned in 1981**, under the Air (Prevention and Control of Pollution) Act.
- The sole responsibility of the board was:
  - To improve the quality of air
  - To prevent, control or abate air pollution in the country
- It falls under the ambit of the **Ministry of Environment, Forest and Climate Change (MoEFCC)**.
- The **functions of the CPCB** includes:
  - Advising the Central Government on various pollution issues,
  - Coordinating activities of the State Pollution Control Boards,
  - Resolving their disputes,
  - Collecting and compiling data regarding air and water pollution,
  - Other ancillary responsibilities.

### **Challenges faced while tackling air pollution**

1. **Lack of strict implementation of laws**
  - The Government is failing to enforce **stricter laws** on the power plant emission norms, despite the data of the emissions from them worsens the air quality.
    - Although, the government has deferred the compliance schedule several times and allowed inefficient plants to continue.
2. **Lack of diverse representation of stakeholders**

- **Policymaking** on air quality in India continues to **be siloed**, which gave rise to the harmful effects of long-term and short-term exposure to poor air quality.
- There is **hardly any representation from the public health sector and the medical fraternity** in decision-making bodies such as **state pollution control boards (SPCBs)**.
  - However, other stakeholders such as state corporations, industry associations and municipal bodies that are potential polluters are well represented.
- 3. **Lack of capacity**
  - One of the main reasons **air pollutions** continues to rise is that the regulatory institutions' lacks capacity and capability to respond appropriately to the issue and its evolving nature.
  - There are several concerns regarding **the deficiencies** in the **frontline pollution** regulators such as:
    - Inadequate personnel
    - Part-time and underqualified leadership
    - Lack of technical capacity and finance
  - **The SPCBs** in the Indo-Gangetic Plain region have an **average vacancy of 40%** in their sanctioned staff strength, with regional offices bearing the brunt.
  - The leadership positions in several states are **part-time appointments**, and the tenures of people appointed to these positions are often shorter than a year.
  - With staff **overstretched and an unstable leadership**, boards spend most of their time on **routine consent-granting functions** relating to industries.
  - With the little time left there is no focus on the other **systematic reforms** such as:
    - Envisioning, planning, and executing longer-term programmes for pollution control,
    - Compliance monitoring and enforcement
    - Training personnel for the functioning

### Looking ahead

- **Action plans** for activating emergency measures, while necessary in the short-term, risk makes the complacent about the underlying systemic constraints.
- For **substantial and sustained improvements** in air quality, the government needs to facilitate coordination in planning and implementation across varied sectors, departments and levels of government.
- It needs to tackle all **major sources of pollution parallelly** and introduce structural changes in crucial sectors such as agriculture and transport.

- A **prerequisite** is to be set for attempting to accomplish the institutional framework with sufficient autonomy, convening power and bureaucratic heft.
- A good starting point would be rapidly **addressing the institutional capacity constraints** faced by most environmental regulators, particularly SPCBs.
- The boards are envisioned as the autonomous entities with the government's (other) policy objectives.
  - For making them work, strong political coupled with bureaucratic support is required to realise this vision.
    - This means affording them with:
      - The freedom to hire, retain and train the staff they need
      - Appointing competent leadership through a robust and transparent process
      - Ensuring that the leadership enjoys an assured tenure of three to five years.
- The boards must also have representation from a **more comprehensive set of stakeholders**, including experts in air quality management and those from the public health sector.
  - **Policymaking on air quality** can only be evidence-informed and effective if it accounts for and prioritises public health outcomes.

Moving in this direction of improving the autonomous body to control the pollution would be a clear signal from the State that it, at long last, is giving the issue of air pollution the attention, it deserves.

### **Uniform civil code will ensure gender equality and equity.**

- The **Preamble of the Indian Constitution** states that **India is a Secular Democratic Republic** and thereby it means that the **State does not endorse any specific religion**. A secular State is one which shall not discriminate against anyone on the ground of religion.
- The Indian Constitution also contains articles mandating **equality and non-discrimination on the grounds of sex (Articles 14-18)**. However, several laws exist that apparently violate these principles and continue to be there especially in **personal laws of certain communities** which contain provisions that are deemed to be **highly discriminatory against women**.

- Women, who make up nearly a **half of India**, continue to demand for a **gender just code** to enjoy equality and justice irrespective of the community to which they belong. However, the ideal of **Uniform Civil Code (UCC)** is yet to be achieved in India.
- Since the **Uniform Civil Code was a politically sensitive issue**, the founding fathers of the Constitution arrived at a compromise by placing it under **Article 44** as a **directive principle of state policy**.
- As India strives for **gender equality**, a close examination of the UCC for the country is necessary.

### Uniform Civil Code

- **Article 44** of the **Directive Principles of the State Policy (DPSP)** states that it is the duty of the State to secure **Uniform Civil Code (UCC)** for the citizens throughout the country.
- It mainly aims to replace **Personal Laws** based on the scriptures and customs of each major religious community in India with a common set of rules governing every citizen.
- **“Uniform”** in UCC signifies:
  - Uniformity of laws **between communities**.
  - Uniformity of laws **within communities** ensuring equalities between the rights of men and women.

### Efforts Towards UCC in India

- **Special Marriage Act, 1954:** The **Special Marriage Act of 1954** provides for **civil marriage for any citizen irrespective of religion**, thus, permitting any Indian to have their marriage outside the boundaries of any religious personal law.
- **Shah Bano Case 1985:** In this case, **Shah Banow** was refused her claim for maintenance. The **Supreme Court** ruled in her favour under **Section 125 of Code of Criminal Procedure (CrPC)**, which applied to all citizens the order for maintenance of wives, children and parents.
  - The Supreme Court further **recommended that the long pending Uniform Civil Code should be finally enacted**.
- The **Supreme Court** also called on the government to implement the UCC in the **1995 Sarla Mudgal judgement** as well as in the **Paulo Coutinho vs Maria Luiza Valentina Pereira case (2019)**.

### YES UCC

- **Accommodating the Aspirations of the Youth:**As the world transitions into the digital age, the social attitude and aspiration of the young population is shaping by universal and global principles of equality, humanity and modernity.
  - Thus, the **enactment of Uniform Civil Code will help in utilising their full potential**towards nation building.
- **Support National Integration: The Constitution guarantees all citizens equal treatment in courts**of law whether it is criminal laws or other civil laws (except Personal Laws).
  - Thus, the implementation of Uniform Civil Code will grant equal set of personal laws to all, resulting in the**end of politicization of issues of the discrimination or concessions** or on the **other hand exceptional benefits appreciated by a specific community on the basis of their specific religious personal laws.**
- **The Rise Above the Patriarchal Mindset:**The existing personal laws of most religions are based upon the **upper-class patriarchal notions of the society.** Thus, the codification and implementation of the Uniform Civil Code will **destroy the sanctity of the patriarchal orthodox.**
  - Thus, the Uniform Civil Code will **promote gender equality**and will bring both **men and women at par.**
- **Convenient for Judicial Process:**There exist many personal laws, including **Hindu Code, Sharia Law, etc.** The presence of so many laws leads to **confusion, complexity, and inconsistencies** in the adjudication of personal matters, sometimes resulting in **delayed or incomplete justice.**
  - UCC will help the judiciary deliver justice efficiently and within a **reasonable timeframe.**

### NO UCC

- **21stLaw Commission Report:** The **Law Commission of India** has opined that a Uniform Civil Code (UCC) is neither necessary nor desirable to reconcile conflicts in personal/family laws.
  - It stated that **many countries are now moving towards recognition of difference**,and the mere existence of difference does not imply discrimination, **but is indicative of a robust democracy.**
  - Therefore, the**Commission has suggested amendments to existing family laws** to tackle discrimination and inequality in personal laws, rather than do away with differences between them altogether.

- **Against Cultural Diversity India:** Practical difficulties due to **diversity in India**, it is difficult to come up with a uniform set of rules for personal issues like marriage due to the tremendous diverse culture in India across the **religions, sects, castes, states, etc.**
- **Encroachment on Religious Freedom: Articles 25 to 28 of Indian Constitution** provide the **Right to Freedom of religion**. The Uniform Civil Code is viewed as a **threat to religious freedom ( Article 25)** by many communities, especially the minority communities.
  - According to them, the **Uniform Civil Code will neglect their traditions and impose rules** which will be mainly influenced by the **majority religious communities.**
- **Against the Indigenous Rights of Tribes:** The **Naga Community** has claimed that the implementation of UCC would bring about clear trouble for their **culture and dignity.**
  - It can potentially cause **social disorder**, as the **personal and social life of the tribes are quite distinct from the rest of the people in the country.**

#### Looking ahead

- The **goal of a UCC should ideally be reached in a piecemeal manner through a brick-by-brick approach** rather than an omnibus approach. **A just code is far more important than a uniform code.**
- There is a need to consider **social adaptability of UCC** while forming a **blueprint for a uniform civil code**. Whether a single law is framed for all religions or reforms are made to our personal laws, **they should be based on gender justice and ensure that the principle of equality enshrined in our Constitution remains intact.**
- The bottom line is that the government and society need to build trust in order to proceed towards a **Uniform Civil Society that respects human rights and promotes gender equality**, that holds more importance than a Uniform Civil Code.

## **Minimalism in India-Pakistan relations**

- In the past, India-Pakistan relations are characterized by intense engagement, high-value terror attacks, Indian responses, a breakdown of talks, and eventual resumption of talks.
- Today, India-Pakistan relations have entered an age of minimalism as there is very **little bilateral contact**, and there is **no political will for any grand relationship**.
  - However, there is a certain **cold peace** on the **Line of Control, inside Kashmir, and in the verbal exchanges between the two sides**.

### **Past Events between India and Pakistan**

- In 2014, the government began engaging with Pakistan.
  - There was the **invitation extended to the then Pakistan Prime Minister** for PM's inaugural function in India, which the Pakistani PM attended.
- Then in 2015, Indian **prime Minister's visited Lahore surprisly**, and there were discreet meetings between the two National Security Advisers (NSA).
- In 2016, even when the **Pathankot airbase** was attacked by a Pakistan-based terrorist organization, India hoped that things would get better.
- The September **2016 terror attack in Uri**, which led to the 'Surgical Strikes' by India, practically froze the relationship.
- February **2019 terror attack in Pulwama** and the government's decisions made in August 2019 on Kashmir put the relationship in a deep freeze.
- Such **historical** learning about the **futility of pursuing a normal relationship** with Pakistan has led to this current phase of minimalism.
- As a result, India-Pakistan relations today have been **reduced to a backchannel conversation between the Indian NSA and the Pakistan Army establishment**.

### **Reasons for the current position between the two countries**



- The relationship is a history of **missed opportunities, failed attempts at conflict resolution, political inability** to resolve conflicts due to the dual power center in Pakistan, and the lack of political will on either side.
  - These disappointments have led to a recognition in India, that making comprehensive peace with Pakistan is a fool's errand.
- There is a **recognition on both sides** bilateral conflict resolution may get harder due to rising populism fuelled by online hate.
- India also realizes that the traditional logic in India is that it should **first settle its conflicts with Pakistan** and then move on to addressing the bigger challenges.
  - It may take India nowhere for none of the key bilateral conflicts between them has been resolved since the Indus Waters Treaty of 1960.
- There is also a certain confidence in India today that it **does not need to talk to Pakistan to ensure peace inside Kashmir.**
- Both sides today are **preoccupied with other geopolitical challenges** — Pakistan with the Taliban-led Afghanistan, and India with an aggressive China on its borders — thereby keeping them busy elsewhere than with each other.

### **Age of minimalism in India-Pakistan relations**

It is characterized by several noticeable features.

- The interlocutors on either side have **adopted a clinical approach to dealing with the other side**: discuss and deal with only those issues that need urgent attention.
- The unmissable focus is on **conflict management, with little focus on conflict resolution.**
  - **Kashmir**, for instance, is discussed in the context of the modalities for sustaining the ceasefire agreement, and not the historical political conflict over Kashmir.
  - But given that the current engagement is **decidedly for tactical purposes, larger political issues are kept outside of its purview.**
- It has so far served as a **useful platform for clarifying red lines, expectation management, and achieving limited** but clear outcomes.
  - The 2021 **February ceasefire agreement** is one such outcome, and the **relative reduction in violence in Kashmir** is another.
- India has traditionally been of the view that **it would only engage with the political establishment in Islamabad** (or whoever runs the show in Islamabad).

- This had a structural issue — attempts at conflict resolution by India with Pakistan did not always have the blessings of Rawalpindi, which occasionally torpedoed such attempts.

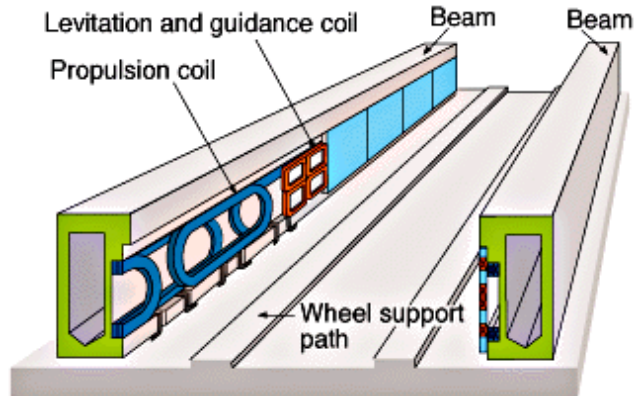
The current arrangement, wherein there is **little contact between India and Islamabad but between Rawalpindi and India**, has not only corrected the **structural problem in India-Pakistan relations**, it also appears that the Pakistan Army takes this direct approach more seriously. To that extent, this is a win-win strategy.

### **Maglev trains**

- Magnetic levitation, maglev, or magnetic suspension is a method by which an object is suspended with no support other than magnetic fields. Magnetic force is used to counteract the effects of the gravitational acceleration and any other accelerations.
- The two primary issues involved in magnetic levitation are lifting forces: providing an upward force sufficient to counteract gravity, and stability: ensuring that the system does not spontaneously slide or flip into a configuration where the lift is neutralized.

Magnetic levitation is used for maglev trains, contactless melting, magnetic bearings and for product display purposes

- Maglev, the name derived from magnetic levitation, is a transport method that uses magnetic levitation to move vehicles without touching the ground
- It hovers 10 centimeters above the tracks and is propelled by electrically charged magnets. The use of a magnetic charge helps the train to lift and move it above a guide way
- The technology used in the train provides a smooth, quiet ride in almost twice as a traditional high-speed rail



**Central Japan Railway** has planned to bring the train into service in **2027** by plying it on the **286 kilometer route between Tokyo and the central city of Nagoya**. It is expected that the maglev trains will link Tokyo and Osaka by slashing the journey time to its half by 2045. Japan is well-established as the world leader in high-speed trains. It developed the first bullet train in 1964.

- The main difference between both the trains is that conventional trains need steel wheels and a steel track for their movement and MAGLEV does not need wheels. They travel under the principle of electromagnetic suspension.
- Another difference is in the engine used. MAGLEV trains do not need engines like conventional trains. The engine used for conventional trains provide power to pull a chain of compartments along steel tracks. In MAGLEV trains, the power to propel the train is provided by the magnetic fields created by the electric coils kept in the guidance tracks which are added together to provide huge power.
- The track along which the train moves is called the guide way. Both the guide way as well as the train's undercarriage also have magnets which repel each other. Thus the train is said to levitate about 0.39 inches on top of the guide way. After the levitation is complete, enough power has to be produced so as to move the train through the guide way. This power is given to the coils within the guide way, which in turn produces magnetic fields, which pulls and pushes the train through the guide way.
- The current that is given to the electric coils of the guide way will be alternating in nature. Thus the polarity of the coils will be changing in period. Thus the change causes a pull force for the train in the front and to add to this force, the magnetic field behind the train adds more forward thrust.

### **Advantages of MAGLEV**

- The main advantage is maintenance. There is no contact between the guide way and the train which lessens the number of moving parts. Thus the components that wear out is little.

- Another advantage is the reduction in noise. As there are no wheels running along there is no wheel noise. However noise due to air disturbance will still be there.
- The next advantage is high speed. As there are no frictional contacts, the train is prone to have more speed.
- Another advantage is that the guide way can be made a lot thicker in uphill places, after stations and so on. This will help in increasing the speed of the train further.
- MAGLEV trains are more environmentally friendly than other types of trains. In terms of energy consumption maglev trains are slightly better off than conventional trains. As there is no wheel friction with the ground, the resistive force gradually increases in the air friction. Thus, the energy efficiency difference between a MAGLEV train and a conventional train is of very small margin.

### **Disadvantages of MAGLEV**

The initial cost of MAGLEV trains are highly costly. The guide paths are also supposed to be more costly than conventional steel railways.

### **‘Viral spillover risk’ could lead to new pandemics**

- The effects of climate change range are being witnessed across a range of environments – from **changes in crop yields** due to unreliable weather conditions to the extinction of species. According to new research, yet another effect could be the **increased risk of “viral spillover”** in some regions that could cause new pandemics over the next few years.
- Climate change could shift the species range of certain viral vectors and reservoirs northwards, and the High Arctic zone could become fertile ground for emerging pandemics.
- This result was drawn from a research article titled, **‘Viral spillover risk increases with climate change in High Arctic Lake sediments’**, which was published Wednesday (October 19) in Proceedings of the Royal Society B, the biological research journal of the UK’s The Royal Society.

## **Viral spillover**

- Viruses are some of the most abundant entities on earth, but they need to **infect a host's cell in order to replicate**. According to the research, these virus/host relationships seem relatively stable within super kingdoms, the major groupings of organisms. However, below this rank, viruses may infect a new host from a reservoir host (in which it usually resides) by being able to transmit sustainably in a novel host – **a process defined as 'viral spillover'**.

## **The study**

- To study the possibility of a viral spillover, researchers from the University of Ottawa collected sediment and soil samples from Lake Hazen in Canada – the **largest High Arctic lake** by volume in the world, and the region's largest freshwater ecosystem.
- Then they undertook DNA and RNA sequencing to reconstruct the lake area's virus composition. They estimated the spillover risk and found that the **chances of a virus moving to a new host increases** with runoff from glacier melt, treated by them as a proxy for climate change. As temperatures increase, the melting of glaciers increases as well, and there is a greater possibility for previously ice-trapped viruses and bacteria to find new hosts.
- This is because there is another important link in the process. As long as viruses and their 'bridge vectors' – that act as hosts and lead to their spread – are not simultaneously present in the environment, the likelihood of dramatic events probably remains low. However, that does not by itself signal relief.
- The authors said, "Climate change leads to shifts in species ranges and distributions, new associations can emerge, bringing in vectors that can mediate viral spillovers, as simulations recently highlight."

## **With more weather extremes in future**

- From extreme heat waves in Japan to devastating floods in Pakistan, the environmental challenges of today's globalised world frequently include extreme weather conditions. Most countries of the world are suffering from extreme weather patterns. India's condition is also not so different. From the heavy rainfall in northeastern regions (Assam, Meghalaya, Arunachal Pradesh, Tripura) to heat waves and simultaneous droughts in Central India, we can observe the changing weather conditions. These all-natural disasters are directly associated with the climate. Avalanches, cyclones, droughts, floods, and landslides are the greatest threats to human life and belongings. Continual dust storms in the summer season and hailing are also the major causes of damaging the crops and the property.
- Climate change is considered by the World Health Organization (WHO) as the biggest threat to world health in the twenty-first century. Even if efforts are effective in reducing rising temperatures, some consequences will last for generations. Increased Sea levels and temperature, making oceans more acidic, are two examples of this. Desserts are expanding due to climate change, and heat waves and wildfires are also occurring more frequently. Arctic ice melting, glacier retreat, and a reduction in sea ice have all been impacted by increased heat in the Arctic. Storms, droughts, and other extreme climates are becoming more intense as a result of rising temperatures. Numerous species are being forced to move or go extinct due to the rapid environmental change occurring in the Arctic, coral reefs, and mountains.

### **Major Causes of Weather Change**

- According to studies, the weather is now changing more rapidly compared to previous geologic records. These weather changes are happening due to climate change. Current climate change involves both the effects of global warming on the planet's weather patterns. The recent rise in the average global temperature is more pronounced and is primarily due to human activities. Carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) are the two main greenhouse gases that are released into the atmosphere when fossil fuels are burned. Agriculture, industrial operations, and forest loss have smaller impacts. Greenhouse gases heat the air by absorbing the heat that the Earth radiates and keeping it close to the

surface. This impact is increased by greenhouse gas emissions, which result in the Earth absorbing more solar energy than it can emit back into space.

- Vegetation patterns and climate are strongly related on a global scale. As CO<sub>2</sub> is absorbed by vegetation, some of the impacts of global warming can be masked. Conversely, the loss of vegetation causes desertification, which increases global warming by releasing CO<sub>2</sub>. Deforestation, for instance, tends to enhance *local albedo* (reflectivity) and causes surface cooling by reducing vegetation cover. Albedo is the amount of light a surface reflects instead of absorbs. Light surfaces generally have a high albedo, while dark surfaces often have a low albedo. Snow-covered ice has a high albedo and reflects about 90% of solar light.
- As a result of these practices and natural phenomena, India is facing a shift in its general weather pattern. Some of these changes have been discussed below.

### **Changing Rainfall Patterns**

- On the closing day of the 2022 monsoon season, the India Meteorological Department (IMD) reported that rainfall was 6% above average from June 1 to September 30, 2022. As a result, this season's rainfall was 6.49 percent higher. Jharkhand, Bihar, Uttar Pradesh, Uttarakhand, Assam, Haryana, Delhi, and Punjab are among the states that had relatively little precipitation. Insufficient rainfall was recorded in many districts of Jharkhand, Bihar, Uttar Pradesh, and Punjab. Heavy rains in the states other than Jharkhand and Bihar during the final week of September caused the figures to fluctuate dramatically. According to Lok Sabha data, 1,098 fatalities related to hydro-meteorological disasters, including landslides, flash floods, and cloudbursts, were reported by the states and union territories up until July 17, 2022.
- Nearly the entire country of India is susceptible to flooding. In the past few decades, events of extreme precipitation like flash floods and torrential rains have frequented Central India at the same time that global temperatures have risen.
- As a result of a decreased monsoon circulation brought on by the rapid warming of the Indian Ocean and a smaller land-sea temperature differential, the yearly precipitation totals have been steadily declining. This indicates that over central India, more extreme rainfall events have been occurring recently, interspersed with longer dry spells.
- The Indian Meteorological Department has predicted that the water cycle will be more intense, with future years witnessing both drought and higher annual average rainfall. Over most states, a 20% increase in monsoon is also a forecast. The Indian monsoon will become highly unpredictable with a 2°C

increase in the global average temperature. By 2100, an exceptionally wet monsoon, which now has the possibility of occurring once every 100 years at 4°C, will happen once every ten years. The temperature and precipitation extremes will rise along the coastal belt and central and northeast India. Due to climate change, it is anticipated that dry years will be hotter and wet years will be wetter.

### **Droughts and Extreme Heat Waves**

- In India, the summers have already become hotter, with some parts routinely recording temperatures around 47°C. According to data released by the Ministry of Earth Sciences, Government of India, over 4,620 deaths in India in the previous four years have been attributed to heat waves. According to the India Meteorological Department, the strong storm that struck northern India in May 2018 was caused by global warming, and its frequency may rise. This is brought on by an increase in wind speed and soil dryness, both of which heighten the severity of dust storms.
- India saw its hottest March in 122 years, this year, as a result of the extended heat wave. With 71% less rain in India, the month was likewise unusually dry. By the end of April 2022, 70% of India had been affected by the hot, dry weather that had persisted all month. May also didn't offer any relief. Up until September 21, there was 18% less rainfall than usual. Punjab had a 21% reduction in rainfall compared to the average.
- In the northern region of India, the increase in ground surface temperature would be more noticeable. According to a recent study, if the global temperature rises by more than 2°C, summers could persist for up to 8 months in the Gangetic Plain by 2070. Heat waves that are more intense and frequent have the potential to significantly raise mortality and death rates. Drought effects are made worse by warmer circumstances, water scarcity, and other factors.

### **Impacts of Weather Change**

- India's economy and growth are badly impacted by a poor monsoon season. India's \$3 trillion economy, which is reliant on agriculture, depends on the monsoon, which provides nearly 75% of the nation's annual rainfall.
- Since the unpredictable monsoon is likely to reduce the output of summer crops, food prices, particularly for rice, pulses, and vegetables, are likely to increase. This is acknowledged by trade, industry, and government officials.



- The risk of heavy rainfall and flash floods is substantially rising across the nation. Numerous risks result from it, including flooding, which puts human lives in danger, topples buildings and infrastructure, and also results in the loss of crops and livestock. Landslides endanger human lives, interfere with travel and communications, and harm buildings and infrastructure.
- Important summer crops like rice, soybeans, cotton, pulses, and vegetables have been destroyed by heavy rain in India just before harvest, which might fuel food inflation in Asia's third-largest economy.
- On the other hand, India's agriculture was also severely harmed by the heatwave. Unfavorable monsoon conditions decrease demand for FMCG products, tractors, and rural housing. Additionally, it forces the implementation of programs like the waiver of farm loan payments and spending on food imports by the government.
- Meanwhile, early rainfall in India was 71% below average. In certain areas, up to 30% of the harvest was lost in Punjab, the state that produces most of India's crops. Due to the heat wave's increased demand, India has experienced its biggest electricity shortage. High temperatures cause early school dismissals and keep people inside. Due to an increase in the amount of power used for cooling, Rajasthan, Gujarat, and Andhra Pradesh have all decreased the amount of power allocated to the industry.
- India's primary source of electricity generation, coal, is now more in demand due to the country's increasing power consumption. Coal India, a government-run company, increased its output by 27%. To prioritize transporting coal to coal power plants and prevent blackouts, Indian Railways had to cancel hundreds of passenger trains. Additionally, the state asked for 19 million tonnes of coal to be imported by electrical suppliers before the end of June.

### **Solutions**

*“The climate crisis is both the easiest and the hardest issue we have ever faced.*

*The easiest because we know what we must do.*

*We must stop the emissions of greenhouse gases.*

*The hardest because our current economics are still totally dependent on burning fossil fuels,*

*and thereby destroying ecosystems in order to create everlasting economic growth.”*

— Greta Thunberg

- The reduction of greenhouse gas emissions, which must reach zero as soon as possible, is the foundation of all climate change solutions. Eliminating the usage of coal, oil, and, eventually, natural gas is the first task. The second largest contributor to greenhouse gas emissions is transportation. Taking public transportation, or switching to a mode of transportation that only uses human energy, like walking or cycling, are all effective ways to significantly reduce the need for transportation fuel. A large portion of emissions might be easily eliminated through improved agricultural practices, paper recycling, and forest management, which balances the amount of wood harvested with the number of new trees growing. Increasing the natural capacity of trees to absorb carbon dioxide can help stop global warming because both play crucial roles in controlling our climate.

### Conclusion

- Nearly every element of our lives is impacted by the climate, including our food supplies, transportation systems, clothing choices, and vacation destinations. It significantly affects our future, our health, and our means of subsistence. Undoubtedly, climate change is one of the biggest challenges that humanity is facing today, and changing weather patterns is one of the major effects of climate change, but it's never too late. Even if we work together at individual, community, and organizational levels, we can reduce or reverse the phenomenon of frequent extreme weather.
- Now our collective focus should not be just limited to creating awareness campaigns but to converting these campaigns into actions.

### **India Would Need a Solar Revolution**

- The world is on the cusp of a **Solar Revolution**. Not only is solar the world's **most abundant and clean energy source**, with its widespread acceptance, it has become the common energy imperative to drive **international climate action**.
- Many countries are in line to solar acceptance, with India leading the way, **giving it the scale and affordability that global climate action asks for**. Solar energy is playing a key role not **only in the developing world to**

**tackle energy access and energy security**, but also in developed countries to **facilitate energy transition**.

- Despite technological superiority over other energy technologies, solar energy is facing an important challenge as the **global photovoltaic (PV) manufacturing supply chain is concentrated in a handful of countries**, which resulted in **recent price surges** because of the choking of **existing limited supply chains**.

### Solar Energy Facilitate Development in India

- **Job Generation:**The Solar Sector has immense potential to create new jobs, **1 GW of Solar manufacturing facility generates approximately 4000 direct and indirect jobs**.
  - In addition solar deployment, operation and maintenance can create additional recurring jobs in the sector.
- **Environmental Development:**India's energy demands are largely fulfilled by **non-renewable sources of energy**.
  - The **scarcity of these fossil resources** stresses the need for renewable energy sources. Abundance of solar energy can fulfil India's **clean energy demands**.
- **Energy Security:**India being a **developing economy** needs proper electricity for industrial growth and agriculture.
  - For achieving **self-sufficiency and minimal cost in power generation**, assured regular supply, solar energy can play a vital role.
- **Social development:**The problem of power cuts and unavailability of electricity, especially in rural areas, leads to **improper human development**.
  - The use of **solar energy can enable social development** in even the most remote areas of India.

### Challenges Related to Solar Energy in India

- **High Dependency on Imports:**India still is largely dependent on foreign countries like China for **solar modules**.
  - **Backward integration in the solar value chain is absent** as India has no capacity for manufacturing solar wafers and polysilicon.
  - In 2021-22, India imported nearly **USD 76.62 billion worth of solar cells and modules from China alone**, accounting for **6% of India's total imports that year**.

- **Land Scarcity:** Solar projects that are **ground-mounted require** a vast area for installation. **Per capita land availability in India is very low**, and land is a scarce resource.
  - Installing solar cells near substations may have to compete with other land-based necessities for a small area of land.
- **Losses in Cost and T&D (Transmission and Distribution):** Solar energy is also having problems with **cost competitiveness** and competing against other energy generation technologies.
  - The cost of **T&D losses is approximately 40%**, making generation through solar energy sources highly
- **No Solar Waste Management Policy:** Despite ambitious solar installation targets, India does not have a policy for managing its **solar waste**. Solar waste consists of discarded solar panels. It is predicted to grow by **4 to 5 times** within the next ten years.
- **Acceptability Concern:** Despite the fact that solar energy production techniques have been improvised in India, **it has not yet been commercialised**.
  - Topographically and climatically, **sun rays are not uniformly available at any particular place throughout the year**, and people (particularly farmers), have not yet been educated about its advantages and benefits.
- **Low Cost to Benefit Ratio:** Despite significant growth in the installed solar capacity, the **contribution of solar energy to the country's power generation has not grown at the same pace**.
  - In 2019-20, for instance, solar power contributed **only 3.6% (50 billion units)** of India's total power generation of 1390 BU.

#### Government Schemes to Enhance Solar Energy Production in India

- **International Solar Alliance**
- **National Solar Mission**
- **Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)**
- **One Sun, One World, One Grid (OSOWOG)**

#### Looking ahead

- **Solar Self Reliance:** India needs to **cultivate a strong domestic solar energy market supporting the vision of Atmanirbhar Bharat**.

- The best way to support the development of solar PV manufacturing projects is direct support to **upstream actors**, for instance through **Design and Production Linked Incentives**.
- **Bio Solar Cells:** India can also explore the use of **bio solar cells** by generating electricity from **microbial photosynthetic and respiration processes**.
- **Towards Global Solar Manufacturing Hub:** Given its **geographical location and abundance of resources**, India is nicely positioned to become a global hub of solar manufacturing.
  - **India's solar story** will continue to provide important lessons for other developing countries that are looking to **transition to clean energy**.
    - With 110 members and signatory countries, the India led **International Solar Alliance is making efforts to bring about this change**.
  - **Technology sharing and finance** could also become important aspects of ISA in the future, allowing for meaningful cooperation between countries in the solar energy sector.
- **Catalysing Net Zero Target: Solar Mini Grids and community rooftop solar installations** can enable the solar shift in India. **Localised Solar energy** is the one which could become the cornerstone of the **net-zero India that we are aiming to see in 2070**.
- **Reducing T&D Loss:** India can encourage **R&D activities to find more innovative solutions to cut down T&D loss** by establishing research centres and funding gives some relief to solar energy players.
  - In addition, India can collaborate with world-renowned universities for the upgradation of substations and T&D lines to **reduce T&D losses**.

## **What why and How of BIMSTEC?.**

### **BIMSTEC**

- The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a multilateral regional organization established with the aim of accelerating shared growth and cooperation between littoral and adjacent countries in the Bay of Bengal region.
- It has a total of seven member countries- five from South Asia, including Bangladesh, Bhutan, India, Nepal, and Sri Lanka, and two from Southeast Asia, including Myanmar and Thailand.

- It was founded as BIST-EC, in June 1997, with the adoption of the Bangkok Declaration, with Bangladesh, India, Sri Lanka and Thailand as members. It became BIMST-EC (Bangladesh, India, Myanmar, Sri Lanka and Thailand Economic Cooperation) with the entry of Myanmar in late 1997, And eventually, it was named in its current form, when Nepal and Bhutan became members in 2004.
- The Bay of Bengal region, was one of the world's most integrated regions until the early twentieth century, according to a 2020 research paper by Constantino Xavier and Riya Sinha for the Vivekananda International Foundation. But after the 1940s, when members of the region became independent and pursued separate goals and alliance systems, "the region's sense of community has almost completely eroded."
- So, the aim of setting up the regional grouping was not to create a new region for cooperation but to revive the connectivity and common interests of the members of the Bay of Bengal region. BIMSTEC's first Secretary General, Sumith Nakandala, echoed this when he had said, "we are not reinventing the wheel" but just "rediscovering the common heritage around the Bay of Bengal."
- According to the official website of BIMSTEC, "the regional group constitutes a bridge between South and South East Asia and represents a reinforcement of relations among these countries."
- What makes BIMSTEC different from other regional groupings such as SAARC or ASEAN is that it is a sector-driven organisation. This means the goals or areas of cooperation are divided between members, for instance, out of the multiple sectors like trade, energy, transport, fishery, security, culture, tourism and so on, India was made responsible for areas like transportation, tourism and Counter-Terrorism earlier.
- However, the Ministry of External said that during the current summit, members decided on a complete reorganisation of cooperation activities to streamline them into seven pillars, as opposed to the earlier bifurcation of 14 sectors. It further stated that India will be BIMSTEC's pillar for security; this will include areas of counter Terrorism and Transnational Crime (CTTCC) Disaster Management and Energy.

### **Working mechanism of BIMSTEC**

- Until the current summit, BIMSTEC did not have a formal document or organisational architecture, which was adopted this time in the form of the BIMSTEC Charter.

- However, it did have a working mechanism for policy making and operational goals. Policy making would be done through two types of meetings: Summits, which are supposed to be held every two years; and ministerial meetings of Foreign and Commerce Ministers of member countries for deciding on trade and economic affairs, to be held once every year. An operational meeting of senior officials to monitor the activities of the grouping is also supposed to be held twice a year.
- Since its inception, BIMSTEC's policy making meetings have not been held as per plan. Just five summits, including the current one, have been held in 25 years. Meanwhile, 18 ministerial meets have taken place so far; and between 2014 and 2017, the Senior Officials meet was postponed seven times.
- BIMSTEC didn't have an official headquarters or secretariat until 2011 and 2014 respectively when the headquarters were established in Dhaka and its first Secretary General — Sri Lankan diplomat Sumith Nakandala was appointed.
- BIMSTEC has a coordinating body called the BIMSTEC Working Group, which has a rotating chairman based on which member country chairs the organisation (the current Chair of BIMSTEC is Sri Lanka). Under this, meetings are to be held monthly at the Dhaka secretariat to review the progress of the regional grouping.

### **Significance of BIMSTEC**

- The BIMSTEC region hosts 22% of the world population or 1.68 billion people; and the member states have a combined GDP of US\$3.697 trillion/per year.
- For India, BIMSTEC aligns with its 'Act East' policy for greater regional cooperation in southeast Asia. It could also be seen as aligning with India's larger goal to gain trade and security prominence in the Indian Ocean region and to cater to the concept of the 'Indo-Pacific' region, a major focus of Quad countries.
- A 2021 research series of the Observer Research Foundation indicates what's in it for other member countries to be a part of a grouping focused in the Bay of Bengal. It says that for Bangladesh, BIMSTEC might be a platform to strengthen its much-needed economic development, while Sri Lanka sees the goal of becoming a hub for shipment in the Indo-Pacific region. For smaller members Nepal and Bhutan — the two landlocked, mountainous states — the grouping serves as a pass to the sea. Lastly, for

Myanmar and Thailand, it could be seen as a way to reduce over-dependence on China and as an opening to a huge consumer market for its commodities.

- Another important factor for India in becoming a prominent leader in the Bay and maintaining peace and security, is China making inroads in the Indian Ocean Region over the years. Besides, China today is involved in a widespread drive to build infrastructure in South and Southeast Asian countries, it has projects under its Belt and Road Initiative (BRI) in all BIMSTEC members except India and Bhutan.
- The idea of BIMSTEC also gained prominence after the 2016 Uri attack when India was able to get SAARC (South Asian Association for Regional Cooperation) nations on its side to boycott the organisations' summit, which was to be held in Islamabad, Pakistan. The progress of SAARC has stalled over the years due to Indo-Pak relations and what experts call Pakistan's obstructionist approach to the organisation. BIMSTEC emerged as an alternative platform for cooperation. In the 2014 SAARC summit, Prime Minister Modi called for more shared infrastructure and connectivity in South Asia, and said in an indirect reference to Pakistan: "Those who want to come with us, welcome and those who do not, the rest of us will continue." India had also invited BIMSTEC heads of state for Mr. Modi's swearing-in ceremony in 2019.
- In this context, India also made efforts to enhance the pace of BIMSTEC's progress in recent years. The BIMSTEC Energy Centre was set up in Bengaluru, along with the BIMSTEC Business Council, a forum for business organisations to promote regional trade. It aims to create free-trade and power grid interconnectivity agreements, and a masterplan for transport connectivity in the Bay of Bengal region (adopted at the current summit).
- And lastly, BIMSTEC is important owing to the land and maritime trade potential of the member countries.

### **Challenges and setbacks**

- The first and major challenge, according to foreign policy researchers is a lack of efficiency and "sluggish" pace of BIMSTEC's progress. The inconsistency in holding policy making and operational meetings was mentioned earlier. BIMSTEC secretariat also suffers from inadequate financial and manpower assistance for its operational activities. Another criticism is India's selective interest in BIMSTEC each time SAARC is hamstrung due to Pakistan.



- Besides, BIMSTEC members have a lot of ground to cover in terms of transborder trade and connectivity. For Instance, according to a 2020 research paper, “the 1,600 km long India-Myanmar border remains Asia’s least open”. India’s percentage of annual trade with BIMSTEC countries as a percentage of its total foreign trade was in the double digits in the 1950s, but was just 4% as of 2020. Inter-regional trade within BIMSTEC countries also varies significantly; research shows that member countries trade with each other in terms of the proximity, availability of trade routes and the size of the country’s economy. Notably, it was also seen that a lot of the time, BIMSTEC member countries don’t import goods that are manufactured and exported by other members, instead importing from other non-member countries.
- While BIMSTEC members have not adopted a Free Trade Agreement yet, they are involved in multiple bilateral and multilateral free trade, preferential trade and economic cooperation agreements with other countries.
- As for maritime trade and tourism, the Bay of Bengal has 15,792 square kilometres, coral reefs of around 8,471 sq.km, and is an important source of natural resources for a coastal population of approximately 185 million people. The fishermen population in the Bay alone is estimated to be around 3.7 million, with an annual fish catch of around six million tonnes, constituting 7% of the world’s catch and valued at around U.S.\$4 billion, according to presentations made at the recent Bay of Bengal Maritime Dialogue organised by the Centre for Humanitarian Dialogue. Despite this, BIMSTEC members are yet to build a shared and lucrative coastal shipment ecosystem and also grapple with frequent detention of fishermen who cross territorial borders.
- In recent years, the progress of BIMSTEC has also been underscored by Bangladesh-Myanmar relations over the Rohingya refugee crisis, the India-Nepal border issue, and most recently, the political situation in Myanmar after the military junta took over in February last year. This year’s Summit also drew attention due to the participation of Myanmar’s Foreign Minister as the country under military rule is seen as a leading violator of human rights in the world.

## **Eklavya Model Residential School**

### **Eklavya Model Residential School (EMRS)**

- Eklavya Model Residential School (EMRS) is an welfare scheme of the Ministry of Tribals, **Government of India aims to establish model residential schools for tribals (Scheduled Tribes) across India.**
- An initiative called Eklavya Model Residential School (EMRS) aims to build model residential schools for Indian tribal students (Scheduled Tribes) for their overall development all over the country.
- It was initiated in 1997–1998 and is one of the Ministry of Tribal Affairs'' flagship initiatives to guarantee that tribal students have access to high-quality education, Vocational training and skills in remote tribal areas.
- Every block having more than 50% ST population and at least 20,000 tribal members would have Eklavya Model Residential Schools.
- Eklavya Model Residential Schools are being built, focusing on the holistic development of tribal pupils and high-quality education.
- The schools cater to students from class VI to class XII, there are 480 students allowed in each school.
- Additionally, EMRSs offer free education, including free boarding and accommodation, and are equipped with amenities that cater to the students'' on-campus needs for holistic development.
- **Financing:** Grants under Article 275 (1) of the Constitution were awarded to the State Governments for school construction and ongoing expenses.
- **Criteria:**
- By the end of 2022, an EMRS will be installed in every block with more than 50% ST population and at least 20,000 tribal members.
- It is suggested to establish Eklavya Model Day Boarding School (EMDBS) on an experimental basis in areas where the density of ST population is higher in selected Sub-Districts (90% or more) in order to give ST students who want to attend school without residential facilities more options.
- In addition to offering instruction in sports and skill development, Eklavya schools will be on par with Navodaya Vidyalaya and have particular facilities for maintaining local art and culture.

### **Observations of the Parliamentary Standing Committee**

- Some areas are having problems **procuring the land** required to build EMRS despite the softening measures.

- It is "impractical" and "makes land identification more difficult" to combine the population criterion with the 15-acre requirement.

### **Scheme was revamped**

- In 2018-19, the Cabinet approved the revamping of the EMRS scheme.
- The new guidelines gave the Union government more power to sanction schools and manage them.
- A National Education Society for Tribal Students (NESTS) was set up and entrusted with the management of the State Education Society for Tribal Students (SESTS), which would implement the EMRS on the ground.
- The new guidelines set a target of setting up an EMRS in every tribal sub-district and introduced a "population criteria" for setting them up.
- The new guidelines also reduced the minimum land requirement from 20 acres to 15 acres.
- Since the new revamped scheme was implemented, the Ministry of Tribal Affairs has approved 332 of the 452 targeted schools through 2021–2022.

### **Observations of the Parliamentary Standing Committee**

- However, the Standing Committee observed in its report that a significant number of schools were being delayed because the population requirements and the acreage requirement (15 acres) were making the discovery and acquisition of land "more difficult," particularly in hilly areas, regions afflicted by left-wing extremism, and the northeast.
- It was highlighted that other issues with land acquisition persisted despite the fact that the revised criteria allowed for relaxations in these circumstances.
- The Standing Committee stated that the population criteria carried the risk of denying the advantage of EMRS, "which are a means towards their educational empowerment," to a "scattered indigenous community".
- The Committee advised modifying these standards, but cautioned against doing so at the expense of EMRS/infrastructure EMDBS requirements.
- The Committee desires that the benefits of EMRSs/EMDBS, which are a way of empowering them via education, should not be denied to these tribal territories with a widely distributed tribal population.

### Situation at present

- The Tribal Affairs Ministry is adamant about keeping the new standards. According to ministry representatives, a total of 688 schools have received approval as of November, 392 of which are operational.
- 32 schools are still in the construction holding pattern out of the 688, with 230 having finished their projects and 234 continuing ongoing.
- Minister of Tribal Affairs Arjun Munda stated that after the targeted 740 schools under this criteria are established, the government will take care of serving less dense tribal groups.

### Issues with the EMRS

- **Land acquisition:** According to the government, there is not enough land available for the construction of schools, and even when there is, the legal process to do so is difficult. This is true even in areas where the demographic requirements are met.
- **Location of the land:** Additionally, it was noted that "several anomalies have also been identified" in a number of the areas where the land was located and that it is taking time to fix them.
- **State government:** The Ministry informed the Committee that these were the problems raised by the corresponding State administrations.
  - Finding a contiguous plot of land measuring 15 acres, as indicated, in locations where the demographic requirements are satisfied is turning out to be one of the most difficult issues, particularly in hilly areas, areas plagued by Left-Wing Extremism, and North-East India.

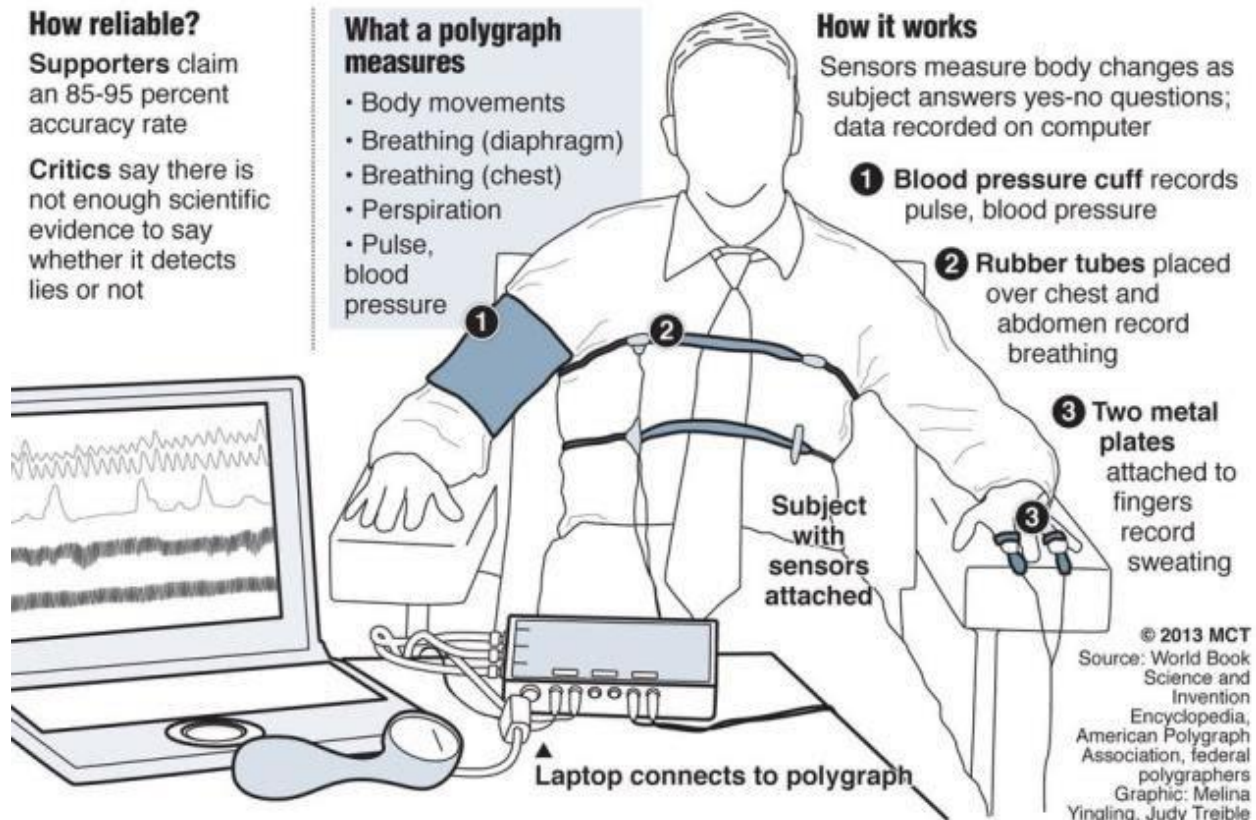
## **What are narco-analysis, polygraph test and brain-mapping?**

**Polygraph or Lie Detector Test:** It is a procedure that **measures and records several physiological indicators** such as blood pressure, pulse, respiration, and skin conductivity while a person is asked and answers a series of questions.

- This test is **based on the assumption** that physiological responses that are triggered when a person is lying are different from what they would be otherwise.
- A **numerical value is assigned** to each response to conclude whether the person is telling the truth, is deceiving, or is uncertain.
- A test similar to Polygraph was first done in the 19th century by the Italian criminologist Cesare Lombroso, who used a machine to measure changes in the blood pressure of criminal suspects during interrogation.

## Do polygraphs detect lies?

*Polygraph or "lie detector" exams continue to be used by law enforcement and government agencies for various screenings even though most criminal courts ban polygraph evidence.*



**Narcoanalysis Test:** It involves the **injection of a drug, sodium pentothal**, which induces a hypnotic or sedated state in which the subject's imagination is neutralized,

and they are expected to divulge information that is true. A few of the best-known drugs that are used in the narco analysis test are as follows:

1. Seconal
  2. Hyoscine (scopolamine)
  3. Sodium Pentothal
  4. Sodium Amytal
  5. Phenobarbital
- The most commonly used drug for truth serum tests is an anaesthetic and sedative drug, Sodium Pentothal, which when administered intravenously can make a person talkative and confessional.
  - When these drugs are injected in continuous small dosages, it might have a hypnotizing effect on a person, who responds loquaciously when questioned.
  - The narcoanalysis test is conducted by mixing 3 grams of Sodium Pentothal or Sodium Amytal dissolved in 3000 ml of distilled water.
  - Depending on the person's sex, age, health and physical condition, this mixture is administered intravenously along with 10% of dextrose over a period of 3 hours with the help of an anaesthetist.
  - The wrong dose can send the person into a coma or even cause death.
  - Effects of the drugs on the persons can be any one of these or all of these.
  - After administering a truth drug, a person's body turns into cozy, his or her features slacken and full of exhilaration and few grow to be silly and giggly.
  - The drug blocks the impulses that commonly pass through positive nerves and maximum body parts fall asleep, which emerge later in disoriented semi-wakefulness.
  - Under the effect of drugs, he/she turns incapable of telling a lie, and he/she will always share any records that are asked of them.

**INSIDE CRIMINAL MIND**

**HOW IT'S DONE**

- A narco test is usually conducted when a suspect is continuously changing his/her statements
- The dose depends on a person's sex, age, health and physical condition
- Doctors use different instruments like cardio cuffs and sensitive electrodes for the analysis
- These instruments are attached to the suspect and variables like blood pressure, pulse, respiration and change in sweat gland activity are monitored
- A numerical value is assigned to each response to conclude whether the suspect is telling the truth or lying

**A drug, sodium pentothal, is administered by an anaesthetist**

**A numerical value is assigned to each response to conclude whether the suspect is telling the truth or lying**

**Some high-profile cases where it was used**

**Aarushi murder case** | Dr Rajesh Talwar and Dr Nupur Talwar underwent the tests. They were accused of killing their daughter, Aarushi, and help Hemraj

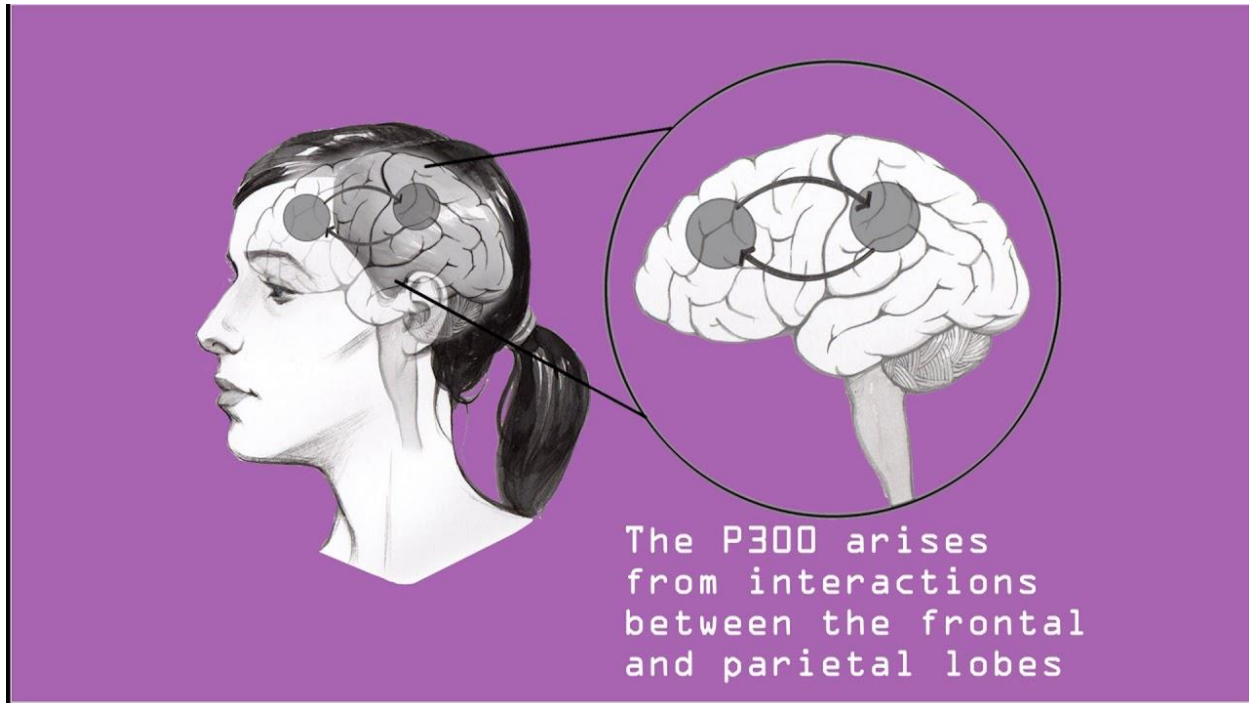
**Hyderabad twin blasts** | In 2007, one of the suspects were subjected to narco analysis

**Nithari killings** | In 2006, cops had carried out forensic analysis tests on the suspects

**Stamp paper scam** | In 2003, Abdul Karim Telgi, the prime accused, had undergone a narco test

**Brain Mapping Test or P-300 test:** In this test, the activity of the brain of a suspect is measured during interrogation to find out whether he is concealing any information.

- Brain-mapping is a comprehensive analysis of brainwave frequency bandwidths. In this test, forensic experts apply unique neuroscience techniques to find out if a suspect's brain recognises things from a crime scene which an innocent person's brain will have no knowledge of.
- In brain-mapping, sensors are attached to the suspect's head and he or she is made to sit in front of a computer screen. The suspect is then made to see images or hear sounds.
- The sensors monitor electrical activity in the brain and register certain waves which are generated only if the suspect has any connection with the stimulus (image or sound).



**Limitations:**

- None of these methods **has been proven scientifically to have a 100% success rate**, and remain contentious in the medical field as well.
- The **consequences of such tests on individuals from weaker sections of society** who are unaware of their fundamental rights and unable to afford legal advice can be adverse.
- It may involve **future abuse, harassment, and surveillance**, even leakage of the video material to the Press for a trial by the media.

**Legal and Constitutional Aspects:**

- In the ***Selvi vs State of Karnataka & Anr case (2010)***, the Supreme Court ruled that no lie detector tests should be administered without the consent of the accused.
  - Also, those who volunteer must have access to a lawyer and have the physical, emotional, and legal implications of the test explained to them by police and the lawyer.
  - The results of the tests **cannot be considered to be "confessions"**, but any information or material **subsequently discovered** with the help of such a voluntarily-taken test can be admitted as evidence



- The SC cited **Article 20 (3) or Right against self-incrimination** which states that no accused can be compelled to be a witness against himself.
  - In the **K. Basu vs. State of West Bengal case, 1997**, the SC ruled that involuntary administration of the polygraph and narcos test will amount to cruel, inhuman, and degrading treatment in the context of **Article 21 or the Right to Life and Liberty**.
  - It may also be violative of the **Right to Privacy** which is a part of the Right to Life.
  - The **Indian Evidence Act, 1871** does not admit the results of these tests as evidence.

The **National Human Rights Commission** in 1999 adopted a set of **guidelines** relating to the administration of the Polygraph Test which included consent, recording of the test, etc.

### Looking ahead

- These methods cannot be used as incriminating evidence or confessions due to their limited reliability and scientific proofs. However, they can be used as useful tools to solve complicated cases as investigative tools. The government should encourage the use of scientific techniques in the otherwise long investigative procedures and trials but should also come up with strict rules for their use in a decent, and consensual manner.

## **Combating terrorist financing in India**

- **Terrorism** looms large over the world today. **Amorphous terror groups, newer cyber linked terrorism, increasing lone wolf attacks** are all adding to the ominous threats of violence. India has borne the **brunt of terrorism** and has witnessed serious **loss of life and property** in senseless violent explosions in large cities in the past few decades.
- As the world shrinks with technological and communication changes, **terrorists, weapons and funds** are also able to move across national boundaries easily. **International co-operation between law enforcement**

**authorities** in this area is a sine qua non for combating such cross-border challenges.

### India towards combatting the Threat of Terrorism

- In the wake of the **26/11 terrorist attack**. In January 2009, the **National Investigation Agency** was established to deal with terrorist crimes.
- In India, the **Unlawful Activities (Prevention) Amendment Act** is the primary anti-terrorism law.
- To gather information related to security, the **National Intelligence Grid (NATGRID)** has been established.
- An operational hub has been created for the **National Security Guard** to ensure a rapid response to terrorist attacks.

### **International Initiatives to Counter Terrorism**

- United Nations Office of Counter-Terrorism (UNOCT)
- Terrorism Prevention Branch (TPB) of United Nations Office on Drugs and Crime (UNODC)
- Financial Action Task Force (FATF)
- India's Annual Resolution on Counter-Terror

### Challenges associated with Terrorism in India

- **No Global Definition of Terrorism:** There are no universally accepted definitions for what constitutes terrorism, so it is **hard to classify a particular activity as a terrorist activity**, which provides terrorists with an edge and allows some countries to remain silent and veto any action at global institutions.
- **Expanding Web of Terrorism:** The **Internet** provides a relatively **unregulated and unrestricted place** where terrorists can craft and disseminate propaganda through seemingly limitless numbers of **websites and social media platforms**, tailoring their pitch so as to **target thousands of potential new recruits** to join their organization and **further their cause**.

- **Terror Financing:** According to the **International Monetary Fund (IMF) and World Bank**, criminals launder an estimated two to nearly four trillion dollars each year. Fund movements by terrorists have also been concealed through **charities and alternative remittance systems**.
  - It **taints the international financial system** and **erodes public trust** in the integrity of the system.
  - Furthermore, the **lack of regulation of crypto currency** could make it a breeding ground for terrorists.
- **Bio-Terrorism: Biotechnology** is boon for mankind but it is also a **substantial threat** because **small amounts of biotic agents can be effortlessly hidden, transported and discharged into vulnerable populations**.
  - Tropical agricultural pathogens or pests can also be used as **anticrop agents** to **hamper food security**
- **Cyber Attack:** The world is moving towards a **digital village** where **data is the new oil**, terrorists use unlawful attacks in a country's cyberspace, networks and **use the information to intimidate or coerce a government** or its people in furtherance of **political or social objectives**.

#### Looking ahead

- **Developing Cyber-Defence Mechanism:** A holistic approach for dealing with cyber terrorism is necessary, whether it's **conducting cyber search operations** or **extending the scope of countermeasures against cyber attacks**.
  - A clear public posture on **cyber defence** will boost citizen confidence in the government thus enabling a more **engaging, stable and secure cyber ecosystem**.
- **Global Counter Terrorism Measures:** Terrorism in all its forms and manifestations should be condemned. The international community should **rise above political differences** and defeat the challenge of terrorism.
  - **Accepting a universal definition of terrorism** and **global sanctions against nations** that are state sponsors of terrorism can pave a way for peaceful world order.
- **Capacity Building:** India should move in the direction of **specialisation of military to fight cross-border terrorism ensuring** co-ordination among the **intelligence and security agencies** to check infiltration of terror activity.
  - Also in order to have speedy trials, India also needs to enhance its **National Criminal Justice system** and **implement strict legal protocol against terrorism**
- **Curbing Terror Financing:** There is a need to strengthen laws that require banks to perform **due diligence on their customers** and to **report suspicious**

**transactions** to prevent terrorism. Also, India can move towards regulating cryptocurrency.

- India to host **“No Money for Terror” Conference** in Delhi would be a step in this direction.
- **Reducing Youth's Exposure to Terrorism:** Given the important role of educational establishments in promoting the values of **non-violence**, peaceful coexistence and tolerance, **education must feature prominently in counter radicalization programs.**
  - Also, undertaking policies to tackle economic and social inequalities will help in **detering disgruntled youth from being lured towards terrorism.**

## **Socio-Legal nuances of Live-In-Relationships in India**

### **Live-in relationships in India**

- A live-in relationship also called cohabitation in some countries is an arrangement when two people involved in a romantic and sexual relationship as partners for a long term or permanently, decide to live together without marriage. Ever since the live-in relationship in India has been legalised, it is essential to know the obligations and responsibilities that come along with it.
- Indeed India has witnessed a drastic change in the way the present generation discern their relationships. With the society gradually accepting live-in relationships, the taboo that used to haunt people before moving into on has started fading away. This has happened over the years with a right to freedom, privacy, professionalism, globalisation and education. Furthermore, it is not an escape from the responsibilities; in fact, it is an attempt to know your partner better and to see the compatibility, so that divorce can be prevented.

### **Live-in relationship under Indian law**

In the case Indra Sarma vs VKV Sarma, 2013, Honourable Supreme Court stated that live-in relationships have five distinct ways:

- A domestic cohabitation between a major unmarried female and a major unmarried male. It is considered as the simplest kind of relationship between all.
- A domestic cohabitation between that was entered mutually by a major unmarried woman and a married man. A domestic cohabitation between that was entered mutually by a major unmarried man and a married woman.
- These two are the most acknowledged type of live-in relationship in India. Moreover, adultery is a type of relationship, and it is punishable under the Indian Penal Code, 1860.
- A domestic cohabitation between that was entered unknowingly by a major unmarried woman, and a married man is also punishable under Indian Penal Code, 1860.
- A domestic cohabitation between partners who are homosexual, cannot lead to a marital relationship. As in India, any matrimonial law for homosexuality is not defined yet.

### **The legal status of live-in relationship in India**

- In western countries, there is a broader acceptance of a couple in a relationship. This can be understood by their civil and union agreements, legal recognition, prenuptial between couples. However, it is not similar in India. In most of the western Apex Courts, it was ruled that if a man and a woman has lived in a live-in relationship for a long term and even has children, same marital laws as a husband and a wife will be applicable on them.
- In India, the Apex Court even stated that a woman and a man living together is a choice and lies under the right to life. Hence, it is not a criminal offence. So, live-in relationships in India are legal.

### **Marriage vs. live-in relationship**

- Marriage is a more legal and socially-accepted form of relationship between couples. There is a social validation that has its own appeal and satisfaction. However, live-in relationships are the new and on-going trends among the youth that gives them the freedom to live with their partners

without any pressure of arranged marriages. Both of these socially-constructed institutions of love and relationships have their pros and cons.

- In context of the Indian society, living with someone before marriage is still treated as a taboo, especially in a man-woman relationship. It corresponds to the idea of virginity, especially of women, which is considered violated, if and when she engages in a physical relationship with a man before her marriage. She is then seen as someone impure or unholy, which is a traditional thought but widely accepted. This is why a live-in relationship is highly criticised by the society.
- In contrast to this, a section of the youth may not agree with what the conservative side of the society has to say. They feel that live-in relationship gives them the sense of freedom as well as the feeling of a conjugal life without the restrictions posed by the institution of marriage. In a live-in relationship, one can leave or stay whenever he or she feels things aren't working out. But marriages can take a toll, as they meant to be together for a lifetime, or in the Indian context, for seven lifetimes! Also, the legality involving a marriage makes it a difficult and time-consuming process to dissolve it or seek a divorce.
- Marriages are said to be made in heaven and this is what the majority of the people believe. Subconsciously, this idea is fixed in the minds of the people and knowingly or unknowingly, the couples in a marital relationship work hard to make their relationship last for a long time and sometimes until death does them apart. Therefore, marriages are a more stable form of a relationship. In contradiction, a live-in can be too liberating at times. With no restrictions, there are more possibilities of instability and insecurity. If you have not committed in a marital and a legal bond, you cannot be sure of it.
- Not every marriage is bliss. In order to deal with the disputes arises in marriages between the partners, marriage laws have been created in different religions.
- Along with the laws related to maintenance under personal laws, the Code of Criminal Procedure, 1973, section 125, also shields the wife with maintenance if she cannot maintain herself.
- Also, there are provisions for women seeking extra maintenance other than maintenance received under other laws, Protection of Women from Domestic Violence act, 2005, section 20(1) (d).

### **Live-in relationship in India**

- Live-in relationship in India has been in talks since years, but there is no law that binds the partners with each other if any of the partners wants to walk out of a relationship.
- The legal definition of a live-in relationship is still unconfirmed, as there is no legal definition of the same. As mentioned, the right of a wife to get maintenance is decided by the court under the Protection of Women under Domestic Violence Act, 2005 and the individual facts.
- Though the concept of live-in relationship is still a taboo in India, and not openly accepted by the society, the Protection of Women from Domestic Violence Act, 2005 offers maintenance and protection by providing alimony for an aggrieved live-in partner.

### Article 21 of the Indian Constitution

Article 21 of the Indian Constitution safeguards the basic right to life and personal liberty, and it has been decided by various Supreme Court judgements like *S. Khushboo v. Kanniammal and Anr* (2010) that the right to life and personal liberty includes the right to cohabit without interruption.

### **Protection of children and women of a live-in relationship from exploitation Maintenance of the female partner**

- All the personal laws in India protect their women by offering the right to maintenance to them. But, unfortunately, none of the religions accepts and recognises a live-in relationship. Hence it is the Indian courts that worked on a remedy to this problem by widening up the scope of maintenance under the Code of Criminal Procedure, 1973. Section 125 of the act offers a legal right to maintenance to the female partner both in and out of marriage.

### **Domestic violence with the female partner or children born out of a live-in relationship**

- The Protection of Women from Domestic Violence Act, 2005 was enforced to protect the women in India from abusive (mental, verbal, economic and physical) marital relationships. Shielding the female partner in a live-in

relationship, section 2(f) of the act is applicable for protection to not only married women but women living in a 'relationship in nature of marriage.'

- Considering all these factors, the Honourable Supreme Court of India has allowed live-in relationships, covered within the ambit of law specified, in a couple of cases.

### **Children born out of marriages**

- In a live-in relationship, child/children can be born if it sustains for a long time. It is noteworthy that as per the Guidelines Governing the Adoption of Children as notified by the Central Adoption Resource Authority, live-in couples cannot adopt a child in India. But in case any dispute arises regarding custody of a child, the partners can consult a child custody lawyer.

### **Legitimacy and inheritance rights of children born out of a live-in relationship**

- The Hindu Marriage Act, 1955, section 16 talks about inheritance rights of children and provides the legal status of legitimacy to an illegitimate child (born out of marriage or live in) for the sole purpose of inheritance. Hence, the children born out of a live-in relationship are also granted inheritance rights. These rights are applicable to both ancestral and self-bought properties.

### **Custody and maintenance rights of children born out of a live-in relationship**

- It is the personal marriage laws that deal with the maintenance rights of children born out of regular marriages, which is applicable to children born out of a live-in relationship as well. It varies from one personal law to another. Like, under Muslim rule, a father is not liable for maintenance for a child born out of marriage, whereas in the Hindu law, the father has to maintain such child.
- Furthermore, section 125, the Code of Criminal Procedure, 1973, is there for children who cannot claim maintenance under personal laws, as it offers a legal right of maintenance to both the wife, female partner and children.



### Merits OF A LIVE-IN RELATIONSHIP

1. You can be just yourself.
2. People get to know each other's nature and temperament and check their emotional and physical compatibility.
3. Free of legal obligations of any kind. There will be no legal harassment like divorce filing etc.
4. People in live in relationships are not dependent on each other financially, emotionally or legally.

### Demerits OF A LIVE-IN RELATIONSHIP

1. Lack of a loyalty factor.
2. Lack the stability and comfort that marriages can offer.
3. Women could be more vulnerable to exploitation as they have lesser legal rights as compared to married women.
4. Societal Stigma
5. Legitimacy and inheritance rights of children born

### **Summing up**

- By all means, we can conclude that the concept and legal status of a live-in relationship in India have only evolved with time, and various judgements by Honourable Supreme Court and the Apex courts play the most crucial part in it.
- However, there is no legality to the subject, as there is no separate legislation for the provisions of a live-in in India. Although the concept of a live-in relationship is a subject of morality in India, it's not illegal according to the laws.
- The pros and cons of both arrangements have always been before us. For those who believe live-in is a cultural violation, it would never gain respect and for those who are moving with the times, it is the perfect arrangement. Either way the choice is ours. Like it's said, nothing is right or wrong: Thinking makes it so? if you feel you can't handle the responsibility, the apparent monotonous tone of married life and you need space, freedom, live-in is the answer. And the debate of which is a better deal, still continues, though a live-in relationship can never be a threat to an age-old institution like marriage. In the end, whatever relationship one chooses, it

should be an arrangement where interests of both the partners are kept in mind and there is an understanding and commitment between the two. It is just a matter of perception, one can take a marriage as a live-in arrangement or have a live-in like marriage.

- In India, there is no specific law for live-in relationships. A live-in relationship, although recognised by the judicial system, lacks cultural approval and remains stigmatised. Proper legal enactment is essential to safeguard the rights and interests of such parties.

### **Seeking transparency in FTA negotiations**

- India has been talking about **Free Trade Agreements (FTAs)** with several partners – **both bilateral and regional** – over the past two years in a **bid to boost export-oriented domestic manufacturing** with an ambitious export shipment target of **USD 450-500 billion by FY23**.
- Exports from India reached **USD 418 billion in FY 2021-22**, surpassing their **pre-pandemic level of USD 331 billion in FY 2018-19**. Though achievements in trade are laudable, India still has much potential.
- If we go by **India's Trade Portalestimates**, there is a huge difference in **India's exports potential and actual exports** in many sectors, especially **pharmaceuticals, gems and jewelry and chemicals**. Therefore, it is time to address sector-specific and market-specific problems so that we fully capitalize on exports across sectors

#### Free Trade Agreement (FTA)

- FTA is an agreement between the **countries or regional blocks to reduce or eliminate trade barriers**, through mutual negotiations with a view to enhancing trade.
  - It includes **goods, services, investment, intellectual property, competition, government procurement** and other areas.
- This concept of free trade is the **opposite of trade protectionism or economic isolationism**.

- FTAs can be categorized as **Preferential Trade Agreement, Comprehensive Economic Cooperation Agreement (CECA), and Comprehensive Economic Partnership Agreement (CEPA).**

### Impact of FTA on the Global Economy

- By blending **local production with foreign trade**, FTAs help boost growth in economies.
  - As **selected goods are produced by every country** at lower costs due to FTAs, international trade increases **production and consumption.**
- In addition to facilitating borderless trade, FTAs help diversify supply chains by making it easier for more businesses to **conduct business across borders.**

### India's Free Trade Agreements

- India currently has **12 FTAs** and **India-UAE CEPA is the latest one.**
- After India opted out of the **Regional Comprehensive Economic Partnership (RCEP)** in November 2019, the **15-member FTA** grouping that includes **Japan, China and Australia**, FTAs went into cold storage for India.
- But now the **bilateral free trade agreements of India** are being negotiated with the **United Arab Emirates, the United Kingdom, Australia and Canada.**
- **Important Trade Agreements of India?**
  - **Comprehensive Economic Cooperation and Partnership Agreement (CECPA)**
  - **South Asian Free Trade Area (SAFTA)**
  - **Asia Pacific Trade Agreement (APTA)**
  - **South Asia Preferential Trading Agreement (SAPTA)**

### India's Foreign Trade Policy - Concerns

- **Lack of Transparency and Scrutiny:** India negotiates most FTAs **behind closed doors** with very little information about the objectives and processes followed and negligible scrutiny.
  - Furthermore, **no institutional mechanisms exist that enable the scrutiny of the actions** of the executive, **during and after the signing of the FTA.**

- **Negative Balance of Trade:**In the past decade, India signed FTAs with the **Association of Southeast Asian Nations (ASEAN), the Republic of Korea, Japan, and Malaysia**. But India remains in the **negative balance of trade** with countries **such as ASEAN and Japan despite the increase in exports**.
  - India has accounted for a trade deficit of **USD 15.95 billion in 2020-21 with ASEAN countries**.At the same time, the trade deficit with Japan **remained USD 6.49 billion in 20-21**.
- **High Dependence on Imports:**While India is **85% dependent on imports to meet its oil needs**, a domestic coal crisis is also forcing to tap the **overseas supplies of the dry fuel** for meeting the power demand.
  - Further, several developments in geopolitics that include the ongoing **Russia-Ukraine war**caused a **huge spike in global oil and commodity prices**, and **has disrupted the global supply chain**.
- **Misunderstanding Self-Reliance as Protectionism:**The **Atma Nirbhar Bharat Campaign** has exacerbated the view that India is increasingly becoming a protectionist **closed market economy**.

### Looking Ahead

- **Towards Open and Competitive Economy:**The **trade policy framework** of India must be accompanied by economic reforms that result in an **open, competitive, and technologically advanced economy**.
  - Therefore, India must focus on **inclusion of entrepreneurs in global economic networks**that will also allow them to pursue **greater financial security**.
- **Strengthening MSME Sector:**With a contribution of about **29% to the GDP and 40% to international trade**, MSMEs are the key players in achieving the ambitious export targets.
  - It is important for India to link **Special Economic Zones**with the **MSME sector** and incentivize small businesses.
- **Enhancing Domestic Base:**India needs to strengthen its domestic manufacturing base in **value-added products** like **engineering goods, electronic products, drugs and pharmaceuticals, textiles, and agriculture machinery**, that could be used to **boost exports**.
- **Infrastructural Evolution:**A robust infrastructure network - **warehouses, ports, testing labs, certification centers**, will help Indian exporters compete in the global market.
  - It also needs to adopt modern trade practices that can be implemented through the **digitisation of export processes**.This will save **both time and cost**.

- **Scrutiny of FTAs:**The **Committee on Commerce** should be tasked with scrutinizing FTAs, discussing different aspects of agreements and negotiations, **thus ensuring executive accountability to the legislature.**

### **China's Dominance of electric vehicle supply chain**

- Electric vehicles (EVs) are key for the **decarbonisation.**
- In India, which faces serious air pollution issues, the transition to EVs is critical.
- However, there is a risk in the supply chain risk for India as **most of the EV manufacturing parts are concentrated in China** and India doesn't have good relations with China.

#### **Need of electric vehicle**

**COP27 in Egypt** has renewed the world's focus on climate change due to below reasons:

- **No tailpipe emission-** EVs do not leave any carbon footprints.
- **Low cost of maintenance-** EV does not required any engine oil change or any filter change with very little to no maintenance for electronic motor and batteries and batteries of any EV last for years.
- **Low operating cost -** EVs run at less cost per kilometre than a fuel-powered vehicle.
- Electric Vehicles are easy to **drive** and **quiet**
- Convenience of charging at home

#### *Environmental advantages over traditional vehicles-*

- **Lower emission** compared to petrol or diesel vehicles.
  - Fully electric vehicles have zero tailpipe emissions, but even when electricity production is taken into account, petrol or diesel vehicles emit **3 times more carbon dioxide** than the average EV.
- EVs can convert **60%** of the electrical energy from the grid to power the wheels, compared to **17%-21%** in petrol or diesel cars

- EVs have the silent functioning capability as there is no engine. No engine means no noise.

#### *Key benefits of FAME-II in EVs*

- Vehicles from different segments will receive **subsidy**.
- Citizens can avail **eco-friendly public transportation**.
- This scheme will allow individuals to reap the benefits of **renewable energy** sources through **charging systems**.
- The establishment of charging stations in close proximity further encourages individuals to opt for electric vehicles.

#### Stages of EVs and their sources

- According to a recent report by the International Energy Association, every part of the EV supply chain is **highly concentrated, mostly in China**.
- The **first stage** of the supply chain is the **key minerals** required for batteries, namely lithium, **nickel, cobalt and graphite**.
  - In **graphite**, **China** has an 80 % share of global mining output.
  - In **cobalt**, **Democratic Republic of Congo** mines two-thirds of the global supply and Chinese companies control a big share of that country's mining.
  - **Lithium** and **nickel** are concentrated in **Australia and Indonesia**.
    - **Australia** mines over 50 % of the world's lithium and **Indonesia** mines 35 % of global nickel.
- The **next stage** of the supply chain is the **processing** of ore/mineral concentrate into metal.
  - Over 60 % of **lithium** processing, over 70 % of **cobalt** processing, 80 % of **graphite** processing and about 40 % of **nickel** processing takes place in **China**.
- The next stage is **cell components**.
  - **China** produces two-thirds of global anodes and three-fourths of cathodes.
  - The other producing countries are **South Korea** and **Japan**.
- The next stage is **battery cell** where China has a 70 % share.
- Final stage in **EVs**:
  - **China** has a share of around 50 % in global production.
  - **Europe** is second with 25 %.
  - **US** producing only 10 % of vehicles and containing just 7 % of battery production capacity.

- India's share in the global EV production is very less (not in top 10).

### **Concerns for India in lagging behind of EVs supply chain**

- According to a report by **Bloomberg's New Energy Fund (NEF) 2021**:
  - **China** is the biggest spender (\$750 billion) on climate/energy transition.
    - 90 % of this invest went into renewable energy and **electric transport**.
    - India was in **7<sup>th</sup> place** with \$14 billion invested.
  - One of the reasons why India is behind in EV production is that **most of the climate investment went to renewable energy projects** instead of EV manufacturing.
    - 40 % of Chinese and US spending was on EVs while more than 95 % of India's spending is on renewable energy.
- In **India**, EVs have **not received sufficient investment**.
- India has been **slow** at acquiring overseas mines of critical minerals.

### **Initiatives taken by Indian government**

- **KABIL** – (Khanij Bidesh India Ltd.), a Joint venture between three minerals and metals PSUs, is tasked with the job of identifying and acquiring overseas mines.
- Income tax benefits, interest subventions, scrapping incentives.
- **PLI (production linked incentive) scheme to enhance manufacturing sector of RVs in india.**
- **FAME-II (Faster Adoption and Manufacturing of Electric and Hybrid Vehicles in India)** scheme- Demand for technology, Pilot Projects, Technology development, Infrastructure for Charging.

### **Shortcomings in government initiatives**

- Adverse **economic constraints** in which PSUs operate as compared with their Chinese counterparts
- **Red tapism from policy-making to policy implementation.**
- **Policy design stage**: faultiness in design.
  - Most of the time there would be a gap in the vision and implementation of the scheme.
- Lack of taking into consideration of ground realities results in partial success.

### Looking ahead

- **Liberalise exploration** policies domestically and Benchmark them with global best practices.
- Invite **global investors** to find and mine in India.
- Make new supply alliances similar to Supply Chain Resilience Initiative with other countries to strengthen EV supply chain
- There is a need to invest much more in **R&D** with **public private partnership**.
- The **start-up ecosystem** must be leveraged because it is more likely to be innovative than legacy firms.

At any rate, it is too risky and expensive for India to be dependent on imports across the energy transition board, particularly EVs after our experience in oil. India should focus on developing **required ecosystem** for EVs manufacture and supply chain and enhance its already existing schemes.

### **IP challenges in India in Special 301 report**

The U.S. Trade Representative highlighted IP challenges in India in its annual **Special 301 report**.

- The report highlighted a range of issues in domains ranging from **copyright and piracy to trademark counterfeiting and trade secrets**, saying that India remained one of the world's most challenging major economies with respect to protection and enforcement of IP.
- It has decided to retain India on its **Priority Watch List** along with six other countries- **Argentina, Chile, China, Indonesia, Russia and Venezuela**.
- S. trade law ("Special 301") requires an annual review of intellectual property protection and market access practices in foreign countries.
- Trading partners that currently present the most significant concerns regarding IP rights are placed either on the Priority Watch List or Watch List.

Indian patent regime



- A patent is **an exclusive set of rights granted for an invention**, which may be a product or process that provides a new way of doing something or offers a new technical solution to a problem.
- **Indian patents** are governed by the **Indian Patent Act of 1970**. Under the act, patents are granted if the invention fulfils the following criteria:
  - It should be novel
  - It should have inventive step/s or it must be non-obvious
  - It should be capable of Industrial application
  - It should not attract the provisions of sections 3 and 4 of the Patents Act 1970.
- India has gradually aligned itself with international regimes pertaining to intellectual property rights.
- It became a party to the **Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement** following its membership to the **World Trade Organization** on 1st January, 1995.
  - Following this, it amended its internal patent laws to comply with TRIPS, most notably in 2005, when it introduced **pharmaceutical product patents** into the legislation.
- **Other IPR related conventions**
  - India is also a signatory to several **Intellectual Property Rights (PR)** related conventions, including the **Berne Convention**, which governs copyright, the **Budapest Treaty, the Paris Convention for the Protection of Industrial Property, and the Patent Cooperation Treaty (PCT)**, all of which govern various patent-related matters.
- The **original Indian Patents Act did not grant patent protection to pharmaceutical products** to ensure that medicines were available to the masses at a low price.
  - This was based on the recommendations of a 1959 commission chaired by the jurist **Rajagopala Ayyangar**.
- Patent protection of pharmaceuticals was re-introduced after the 2005 amendment to comply with TRIPS.

#### Indian Issues Highlighted by USTR

- Patent issues continued “to be of particular concern in India,” highlighting the **threat of patent revocations, lack of presumption of patent validity and narrow patentability criteria as issues** which “impact companies across different sectors”.
- The issue of narrow patentability criteria was again raised in relation to Section 3(d) of the Indian Patent Act, with the report saying that in the pharmaceutical

sector, the United States “continued to monitor the restriction on patent-eligible subject matter in Section 3(d) of the Indian Patents Act and its impacts.

### Section 3 and section 3 (d) of Indian Patent deal with

- **Section 3** deals with **what does not qualify as an invention under the Act.**
- **Section 3(d)** in particular excludes “the mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance
  - or the mere discovery of any new property or new use for a known substance
  - or of the mere use of a known process, machine or apparatus unless such known process results in a new product
  - or employs at least one new reactant” from being eligible for protection under patent law.
  - Section 3(d) prevents what is known as “**evergreening**” of patents.
    - It is a corporate, legal, business, and technological strategy for extending/elongating the term of a granted patent in a jurisdiction that is about to expire, in order to retain royalties from them, by taking out new patents.
  - According to the Committee’s report, Section 3(d) allows for **generic competition by patenting only novel and genuine inventions.**
  - The seminal judgment in the case **Novartis vs. Union of India (2013)**, upheld the validity of section 3(d).

### Novartis vs. Union of India - Judgement

- In this case, pharmaceutical company Novartis filed a patent for the final form of cancer drug **Gleevec**, which was challenged in the Supreme Court.
- The Supreme Court held that **Gleevec was merely a beta crystalline form of a known drug, namely, imatinib mesylate**, and did not differ significantly in properties with regard to efficacy. **Hence, it could not be patented in India.**
- The judgment also says that the section 3 complies with the TRIPS agreement and the Doha Declaration.
  - The **Doha Declaration on the TRIPS Agreement and Public Health** was adopted on in November 2001, by the WTO member states.
    - This declaration recognises the “**gravity of public health problems affecting developing and least developed nations**”

and stresses the need for TRIPS to be part of the wider national and international action to address these problems.

- The declaration points out that the agreement “can and should be interpreted and implemented in a manner supportive of WTO members’ right to protect public health and, in particular, to promote access to medicines for all.”
- These flexibilities include the right to grant **compulsory licenses** and the grounds for such licenses,
  - the right to determine what “constitutes a national emergency or other circumstances of extreme urgency, including public health crises”
  - and the right to establish its own regime for the exhaustion of intellectual property rights.
- **Compulsory licenses can be invoked by a state in public interest**, allowing companies apart from the patent owner to produce a patented product without consent.

#### Looking ahead

- India must **not compromise on the patentability criteria under Section 3(d)** since as a sovereign country it has the flexibility to stipulate limitations on grants of patents in consistence with its prevailing socio-economic conditions.
  - This ensures the growth of generic drug makers and the public’s access to affordable medicines.
- India should resolve its differences with the U.S. regarding the disqualification of incremental inventions through bilateral dialogue.
- The member countries of WTO make full use of the policy space available in the TRIPS agreement by adopting and applying rigorous definitions of invention and patentability that curtail ‘evergreening’ and ensure that patents are only awarded when genuine innovation has occurred.
- Through Section 3(d), India strives to balance the international patent obligations and its commitments to protect and promote socio-economic welfare and public health.

### **Genetically modified crops: hope for India?**

- GM crop proponents are jubilant over the **approval** given to genetically modified **herbicide-tolerant** mustard (GM HT mustard).
- However, some activists approached the Supreme Court to ban it for various reasons.
- The Supreme Court has ordered the **status quo to be maintained** till the next hearing on the matter.
- Genetically modified crops are **created by inserting genes from different organisms into the DNA sequence of specific crop varieties**
- This produces traits that would not occur naturally, such as resistance to pests or environmental conditions like drought.

### **GM crops and World**

- GM crops have spread around the **world since 1996**.
- **By 2019**, roughly 190 million hectares were under GM crops, led by corn and **soyabean in the US, Brazil, Argentina, and canola (rapeseed/mustard) in Canada**, with no harmful impact on human or animal health or the environment per se.
- Even **Bangladesh** has marched ahead with Bt brinjal.
- More than 70 countries have accepted the use of GM crops.
- In India, the **first GM crop, Bt cotton**, was released in 2002 by the government.
  - Since then, Cotton production increased remarkably in India.
  - The government envisioned that science could transform agriculture.

### **Concerns with Bt Cotton**

- Several concerns have been expressed from time to time to emphasise the risks associated with GM crops.
- Some of these include:
  - Enhanced sucking pest damage in Bt cotton
  - Increase in secondary pests such as mired bugs and Spodoptera
  - The emergence of pest resistance
  - Environmental and health implications in terms of toxicity and allergenicity that can cause hematotoxin reactions in the human body.

- Based on largely unproven fears, **the commercial release of Ht Bt cotton, Bt brinjal and now GM mustard** has been held under moratorium.
  - This is despite the official clearance from the Genetic Engineering Appraisal Committee (GEAC).

### **Use of GMOs in India**

- GMOs have been in the Indian food systems for years.
- India heavily depends on **imported edible oils (55-60 percent of India's domestic requirement is imported)**.
- A large portion of this — about three-four million tonnes every year — comes from Argentina, Brazil, Canada, the US, etc, which is all from GM technology (in soybean and canola).
- Plenty of India's demand for **cotton seed (binola) oil, and 95 % of cotton is now GM.**
- **Cotton seed** is also fed to cattle which gives the **milk its fat content**.
  - Even poultry feed, such as soya and corn, is being imported.
- So, it is clear that **GM food is already in the food chain**, and has been there for quite some time.

### **Concerns**

#### **Policy paralysis on GM technologies**

- It was expected that India would be at the **forefront of the gene revolution** and emerge as a major export hub to other Asian and African countries.
- Like the IT revolution, the **Bt revolution could have been done the same in agriculture.**
- Unfortunately, the policy paralysis on GM technologies from 2003 to 2021, under pressure from activists and ideologues, has cost the farmers a lot.

#### **Denial of GM-Mustard**

- By not allowing GM mustard or for that matter even Bt brinjal for so long means denying the basic rights of farmers who want to increase their incomes.
- The best way to do so is by **raising productivity in a sustainable manner.**

- The field trials of **GM mustard at different locations showed 25-28 percent** higher yield and better disease resistance compared to indigenous varieties.
- This can go a long way in **augmenting domestic mustard oil supplies and farmers' incomes.**

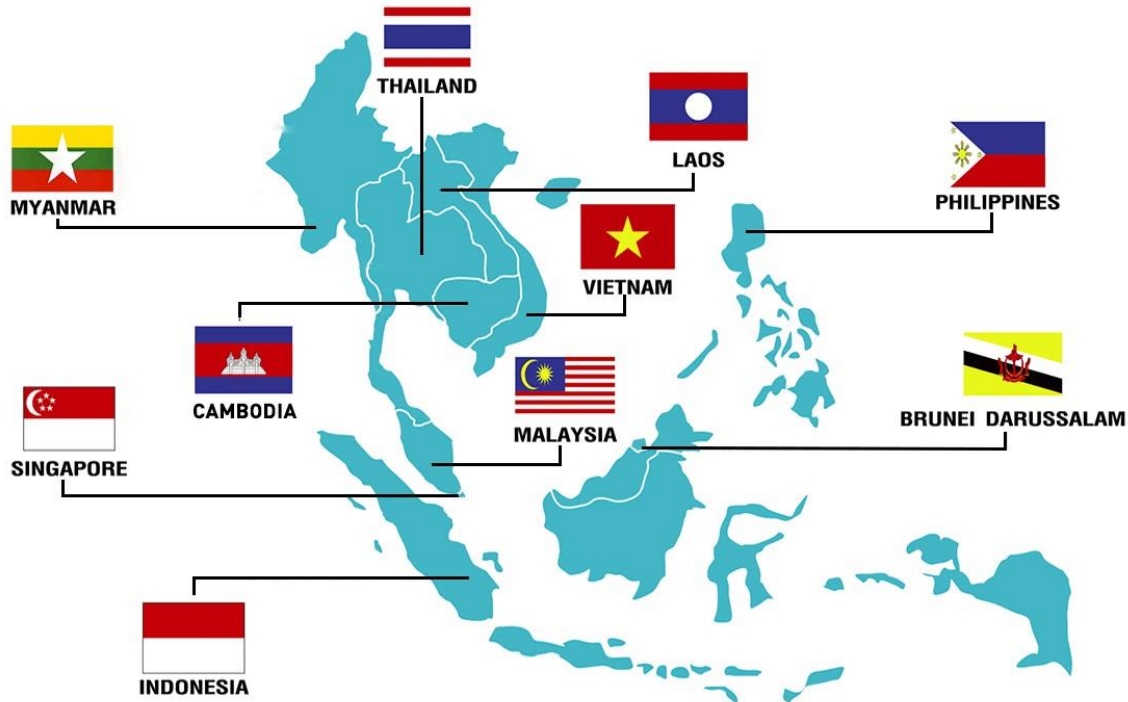
The agriculture of tomorrow is going to be **science-based**, and the winners will be those who adopt it and develop it further today. Innovation is the name of the game, and “Jai Anusandhan” is a good slogan given by PM. But it will have meaning only when the **government goes ahead with not just GM mustard but also fast-tracks Ht Bt cotton, Bt brinjal, and even GM soya and corn.** We political leadership to keep the decision-making science-based when it comes to gene revolution.

### **Prospects and challenges in India-ASEAN relations**

Against the backdrop of **multi-dimensional developments and interventions in the Indo-Pacific region**, India's foreign policy underwent substantial changes in the past few decades. Starting with the **Look East Policy in the 1990s**, India advanced its policy in 2014 as **Act East Policy** taking up its partnership with the **Association of Southeast Asian Nations (ASEAN)** to a step further which provided an **opportunity for India to explore Southeast Asia.**

As there are several **geopolitical challenges that hinder smooth India-ASEAN transit**, it is critical to demonstrate how **India's Act East Policy fits into ASEAN's prospects and overcoming the challenges of India-ASEAN ties.**

- ASEAN, a **10-nation grouping**, is considered one of the most **influential groupings in Southeast Asia.**
  - It includes **Indonesia, Thailand, Vietnam, Laos, Brunei, the Philippines, Singapore, Cambodia, Malaysia and Myanmar.**
- ASEAN states are located at a **strategically important junction of the Indo-Pacific** which makes ASEAN a **focal point for both regional and global powers.**



### Areas of Cooperation Between India and ASEAN

- **Economic Cooperation:** ASEAN is India's **4th largest trading partner**. India signed an **FTA (Free Trade Agreement)** in goods in 2009 and an FTA in services and investments in 2014 with ASEAN.
  - ASEAN and India have also adopted a joint statement announcing the elevation of the existing **Strategic Partnership to Comprehensive Strategic Partnership**.
- **Peace and Security:** The two sides reaffirmed the importance of maintaining and promoting **peace, stability, maritime safety, and overflight freedom** in the Indo Pacific.
- **Financial Assistance:** India provides **financial assistance to the ASEAN nation** through various mechanisms like **ASEAN-India Cooperation Fund** and **ASEAN-India Green Fund**.
- **Connectivity:** India has been undertaking several connectivity projects like **India-Myanmar-Thailand Trilateral (IMT) Highway** and the **Kaladan Multimodal Project**.
- **India and ASEAN** countries recently gave a new vigour to their ties by establishing a comprehensive strategic partnership at the **19th ASEAN-India Summit** in

### Challenges w.r.t. ASEAN

- **Territorial Disputes:** ASEAN member states are enmeshed in territorial disputes with interested powers for a long time. For example, **China's claim to territories in the South China Sea** overlaps with competing claims by **Brunei Darussalam, Malaysia, the Philippines and Vietnam.**
- **Indo-Pacific Rivalry:** For a long time, the **assumption of China as the primary economic partner** and the **US as the primary security guarantor** has been at the heart of the ASEAN balance.
  - Today, that **balance is falling apart** and the **Russia-Ukraine war has further aggravated this tension.** This sharpening of major power rivalry in the Indo-Pacific region is threatening the **underlying stability on which rested the regional growth** and prosperity.
- **Unstable Goeconomics:** The geopolitical tension in the Indo-Pacific is **producing geoeconomic consequences** where issues of **trade and technology** cooperation as well as **supply chain resilience** is at peak.
  - And this is happening at a time when **ASEAN remains a divided organisation internally** on how to manage these challenges.
- **India-ASEAN Challenge:** Many bilateral deals with these nations are **yet to be finalised**, leading to the halting of various aspects of economic ties.
  - In spite of India's commitment to many connectivity projects, such as the **India-Myanmar-Thailand trilateral highway**, they have not been completed. By contrast, **China's Belt and Road Initiative** is gaining the trust of some ASEAN countries.

### Looking ahead

- **Building Resilient Supply Chain:** Current engagement in value chains between ASEAN and India is not substantial. **ASEAN and India can leverage the emerging scenario** and support each other to build new and **resilient supply chains.**
  - However, to explore this opportunity, ASEAN and India must **upgrade their logistics services** and strengthen the **transportation infrastructure.**
- **Maritime Security in Indo-Pacific:** The **maritime security** of the **Indo-Pacific region** is crucial for the protection of India's interests as well as those of ASEAN.
  - Both sides need to work towards ensuring **maximum utilisation of resources without harming the marine environment.** They need to adopt strong and responsible initiatives to harness the **potential of the ocean in a sustainable manner.**
  - Also **ASEAN should emphasise the principles of the UN Convention for the Law of the Sea (UNCLOS)** to solve the disputes in the **South China Sea region.**



- **Regional Tourism:** India and ASEAN should also enhance **regional tourism** and **people-to-people connectivity** as they already have **civilisational and cultural influences** on each other.
- **Unfolding Act-East Policy:** Reciprocity and mutual understanding on common concerns will help both ASEAN and India to overcome some of the challenges.
  - Through coordination in the fields of **Digitalisation, Pharmaceuticals, Agriculture Education and Green Growth** will **unfold the potential of India's Act East Policy**.
  -

### **What is Environmental Ethics?**

- Ethics is a branch of philosophy that defines what is right and what is wrong. We follow ethics everywhere, we follow moral values and code of conduct, and we are guided since birth by these to decide what is right and what is wrong. It is the desired behaviour that is expected from us. Now, when it comes to the environment and when it comes to environmental ethics, there should also be certain moral values and certain code of conduct with regard to our relationship with nature.

#### **What is meant by 'Environmental Ethics'?**

- Environmental ethics is a branch of applied philosophy that studies the moral and ethical relationship of human beings to the environment. Environmental ethics helps to define man's moral and ethical obligations toward the environment.

#### **Why is it important to study?**

- With the deterioration of ecological systems and the worsening of environmental issues, humans have realised that they cannot fix environmental pollution and ecological imbalances just by economical, technological, and judicial means. Only after adopting a proper attitude toward nature and forming a new ethical relationship between humans and nature, we will be able to automatically love

and appreciate nature, as well as cope with challenges like pollution and ecological imbalances. In this context, environmental ethics and practices can play a critical role in ensuring that our lives function smoothly and that humans and other beings in our environment are treated equally.

**Discuss any one environmental issue from the viewpoint of environmental ethics.**

- Excessive global warming has come out to be major problem and in 2022 Global warming and Climate Change has immensely impacted everyone across the globe including India. the recent prolonged Heatwave in North India or the Devastating floods along with unprecedented landslides in Assam are the severe outcome of climate change in India.
- The Unmindful development and ignorance towards environment have now raised ethical issues for human race: The upcoming and younger generation are the least responsible for climate change, yet they will bear the greatest burden of its impact.

**Environmental Ethics vs Development:**

- The world's population was said to be around 2.5 billion during 1950's. By the year 2050 it is expected to have grown to between nine and 10 billion. As the population is increasing, infrastructural development is essential to accommodate the growing demand, a major burden of which will fall on the environment. Mostly, development takes place at the cost of environment. For instance, developmental Project like Ken Betwa River linking project, ever since it was proposed by National Water Development Agency in 1995, has been considered unviable by several experts for its immense environmental cost. In 2011, then Environment Minister rejected the project. In August 2016, an Environment Ministry panel cautioned that the Ken Betwa Linking project "may not be the best possible option for addressing livelihood and development of the region" — and "it would be best to avoid such project, when it runs the risk of providing justification or unhealthy precedence for more such developmental projects within the protected areas. It will not be in the interest of wildlife and the overall well-being of the society in the long term."

**Policy Challenges Infront of Policy Makers with respect to Environment Ethics**

- The environment is no longer to be considered as a sector to be managed exclusively by the environmental authorities, but rather a theme to be incorporated into different policy areas – whether energy, transport, agriculture, industry, or trade. For instance in India, to balance the development and environment, the policymakers have established institutions like NGT, Central Pollution board, National Ganga River Basin Authority, National Biodiversity Authority, and many others. Also, Environmental Impact Assessment (EIA) is made mandatory for various projects such as mining, thermal power plants, river valley, infrastructure (road, highway, ports, harbors, and airports), and industries including very small electroplating or foundry units to get environment clearance. For policymakers the major challenge is that the clearances through these institutions are very time-consuming, this leads to some bottlenecks, which hampers the whole execution process. Sometimes the projects have to be stopped in between due to these clearance issues, which leads to financial loss to the government exchequer also. The major challenge in front of the policymakers is to reduce the time in taking environmental-related clearance and reducing the litigation arising out of it.

### **Environmental Ethics and Sustainable Development:**

- Creating a healthy balance between development and environment is the major factor for obtaining the sustainable development goal. Sustainable development implies harmony on human-environment interactions and inter- generation responsibility, with emphasis on a harmonious relationship among population, resources, environment and development. The role of environmental ethics toward sustainable development is that it not only harmonises the relationship of population, resource, environment and economic development, but also guide behaviour selection, push social and political system transformation, strengthen the legal system, and raise environmental awareness of the public.
- Sustainable Development recognises that all development decisions must simultaneously consider aspects of Economy, Environment, and Equity. If future generations are to enjoy a high quality of life, then this generation's plans must guarantee the integrity of our natural resources.
- Viewing sustainable development from an environmental ethics perspective, extends the emphasis of sustainable development from the traditional understanding, to take into account ethical issues relating to a wide range of economic, social and cultural factors which helps achieve the ethical values of equity, justice, temperance and wisdom in the choices we make concerning the environment.

## **Infrastructure investment as a G20 priority for India**

- Infrastructure sector is a key driver for the Indian economy. The sector is highly responsible for propelling India's overall development and enjoys intense focus from the Government. Numerous initiatives have been taken to facilitate infrastructure projects across the country at centre as well as at state level.
- But there are still several roadblocks to building class, state-of-the-art infrastructure across the sectors. India's road to sustainably higher growth and a competitive manufacturing sector will go through robust and reliable national infrastructure.

### Status of Infrastructure in India

- **Infra-Deficit India:** India has the **second largest infrastructure deficit in the world (after Brazil)** as it has grown at a rapid pace of over 6% since the early 1990s without commensurate increase in supply.
  - As per the **World Bank's Financing India's Urban Infrastructure Needs** report, by 2036, 600 million people will be living in urban cities in India, representing 40% of the population.
    - This is likely to put additional pressure on the already stretched urban infrastructure and services of Indian cities.
  - **Only 5% of the infrastructure needs of Indian cities are currently being financed through private sources.**
- **Significance of the Sector:**
  - Infrastructure sector acts as a **catalyst for India's economic growth as it drives the growth of the allied sectors** like townships, housing, built-up infrastructure and construction development projects.
  - Global investors have started to view **India as one of their top destinations for infrastructure projects**. India offers a **higher rate of return** on infrastructure projects, given its youth bulge, rise of the middle class, and a huge domestic market.
- **Related Initiatives:**
  - The government has launched the **National Infrastructure Pipeline (NIP)** for the period FY 2020-25 for **supporting development of infrastructure, urban infrastructure** being one of the key focus areas.

- The Government also launched the ambitious **Gati Shakti scheme** with the aim of coordinated **planning and execution of infrastructure projects to bring down logistics costs.**
- The **National Investment and Infrastructure Fund (NIIF)** is a government-backed entity established to provide long-term capital to the country's infrastructure sector. It was set up in December 2015 as a **Category-II Alternate Investment Fund.**
- In November 2021, **India, Israel, the US, and the UAE (I2U2)** established a **new quadrilateral economic forum** to focus on **infrastructure development projects** in the region and strengthen bilateral cooperation.
- In March 2021, the Parliament passed a bill to set up the **National Bank for Financing Infrastructure and Development (NaBFID)** to **fund infrastructure projects in India.**

### Challenges

- India's **biggest challenge is the huge infrastructure financing gap**, which is estimated to be more than 5% of GDP.
- **Land acquisition, aggressive bidding and non-performing assets** are key challenges to infrastructure **PPPs (public-private partnerships).**
- India is dealing with a **high level of stressed assets**, and there is a **need to restore credit growth for public sector banks** as fundamental to the future growth of the economy.
  - Stressed assets in banks combined with **little bank capital** could lead to additional and potentially crippling losses on these assets.
- Also, the **lack of stability of credit interest rates** poses a significant risk for investments in the sector.
  - The fact that **infrastructure investments in India are generally based on the expected return on USD and not on user charges** creates an imbalance and affects the total inflow of foreign infrastructure investments in the country.

# Roadblocks in key sectors



## HIGHWAYS

- Delays in land acquisition; lenders stop lending midway
- Tendering of projects to low-traffic entity
- Unclear exit policy for road developer; NHA is a developer as well as the regulator which causes a conflict of interest in case of arbitration so there is a need for a clear distinction of roles for NHA

## PORTS

- Multiple changes in tariffs setup by the Tariff Authority for Major Ports make it difficult to evaluate the cost of projects
- Delays in tariff fixation

## AIRPORTS

- Lack of consistency in tariff methodology and concession tariff framework
- Switching from single till tariff method to hybrid till creates difficulty in assessing the cost of projects
- Delays in the passage of tariff orders cause problems in the timely execution of projects

## WIND

- Inconsistent policy at Central and State govt level
- Accelerated depreciation leads to non-viability
- State regulators do not honour renewable purchase obligation

## TELECOM

- Lack of predictability
- Inconsistent policy and regulatory framework; govt refuses to honour PPAs signed earlier
- Aggressive bidding to some extent

## POWER

- Coal block deallocation causing execution delays and losses to project developers
- New auction-based coal linkage approved by government in 2017, uncertainty remains regarding the validity of old contracts
- Inconsistency in the interpretation of PPA
- Inconsistency in Central & State regulation, for instance, the Central electricity Act allows open access, but State governments do not adhere to it causing the problem in execution
- Unstable financial health of State utility causes a delay in the payment cycle

## GREENFIELD PROJECTS

- Land acquisition delay
- Nature of developers have been contractors which leads to low-cost bidding making the project unviable
- Bank loans are given out for **10/15/18 years** but the interest reset clause poses a high risk on overall investment return evaluation, sometimes **8%** interest rates are increased up to **14-15%** rendering the project unviable

## BROWNFIELD PROJECTS

- Government questions the validity of existing projects (eg, with rates of solar energy slashing, will the contracts entered on higher tariffs remain valid or not?)
- There is a strong need for the ability to have more credible infrastructure developers and partners

**UNIFIED LOGISTICS INTERFACE PLATFORM (ULIP) IS DESIGNED TO ENHANCE EFFICIENCY AND REDUCE THE COST OF LOGISTICS BY CREATING A TRANSPARENT, ONE-WINDOW PLATFORM**

## Strengthening the Infrastructure Sector

- **Ensuring Consistency in Policy/Regulatory Framework:** There is a need for a better regulatory environment and consistency in the tendering process. **Lack of consistency and policy coherence** across different government departments should be **addressed as a priority**.

- Between the government and the RBI, there needs to be a **holistic way to deal with the issue of stressed assets**. A dedicated policy needs to be formed across sectors for non-performing assets, **revamp of PSUs**.
- **Reasonable User Charges:** It is **necessary for augmenting infrastructure financing**, financial viability of infrastructure service providers, and for environmental and resource use sustainability.
  - User charges are crucial because in many areas across the country, partly **because of zero or very low user charges, there is over-use and wastage of the precious resources** (for instance, groundwater).
  - Besides the environmental sustainability and resource use efficiency that would emanate from reasonable user prices, this policy priority has **immense resource generation potential**.
- **Autonomous Regulation of Infrastructure:** As India and the world opens up more sectors to private participation, the private sector would essentially demand autonomous infrastructure regulation.
  - The world-wide trend is towards **multi-sectoral regulators** as the regulatory role is common across infrastructure sectors, and **such institutions build regulatory capacity, conserve resources and prevent regulatory capture**.
- **Asset Recycling (AR) and BAM:** The basic idea of **BAM (Brownfield Asset Monetisation)** is to **augment infrastructure resources through brownfield AR for accelerated greenfield investment** by freeing up funds tied up in de-risked brownfield public sector assets.
  - These **assets can be transferred to a trust (InvITs)** or a corporate structure (**TOT model**), which receive investment from institutional investors against a capital consideration (which captures value of future cash flows from these underlying assets).
  - India has **large stock of brownfield assets across infrastructure sectors**.
- **Utilising Domestic Funds:** Domestic sources such as India Pension Funds which have been **lying dormant could give a big boost to the sector** if utilised efficiently.
  - India can emulate the practices in Canada, the Netherlands, Australia and the likes on **efficient usage of domestic funds to push infrastructure development**.
- **Leveraging Global Leadership:** India will assume the **G20** presidency beginning December 2022. G20 countries, in their presidencies, have set the agenda for infrastructure, such as Roadmap to Infrastructure as an Asset class (**Argentina, 2018**), Principles of Quality Infrastructure Investment (**Japan, 2019**), InfraTech (**Saudi Arabia, 2020**), and Financing Sustainable Infrastructure for Recovery (**Italy, 2021**).
  - **The Indian G20 presidency is an occasion for India to set the infrastructure agenda for itself and the world.**

## **Water as a lever for climate action: The investment opportunity**

- One of the agenda in the 27th Conference of the Parties of the UNFCCC was to discuss on the critical question on **climate finance**.
- The COP negotiations can mark an important year for the **Global South**, given that these countries are **the most vulnerable to climate change**.
- According to the **World Bank**:
  - India **losses** \$9.8 billion each year as a result of extreme events.
  - **Floods** cost 50 % of all damages.
  - In 2020, **floods** led to damages of 0.15 % of India's GDP.
- One of the solutions to address such adverse impact of climate change is to take a collective approach such as the **usage of water credits**.

### **Water credit**

- Water credits represents a fixed quantum of water that is conserved or generated and can be transacted between water deficit and water surplus entities within a sub-basin.
- Its concept is similar to **carbon credits**.
  - However, the main difference is that for **water credit** the spatial limit of transaction should be within the **same hydrological unit**, that is, a river basin or watershed.

### **Example of usage of water credit**

- Multiple industries can **buy** water credits from fund crunched municipalities.
- Finance large-scale **floodwater harvesting** or **wastewater treatment projects**
- **Conserve** freshwater resources at a city level
- **Promote** wastewater reuse.
- **Innovation** in adaptation finance to achieve water resilience.



### **Data on water scarcity**

- The **World Economic Forum** ranked water crises amongst the top-5 **risks** in terms of impact in its **global risk report 2020**.
- As per **UNICEF report**-India is on a track of 50 percent shortfall in its water supply by 2030.
- According to **NITI Aayog**, 21 major Indian cities are in immediate danger of running out of groundwater. **Three-quarters** of Indian districts, home to 638 million people, are hotspots for water related diseases.
- **One-third** of the world's largest **groundwater basins** have been depleted.
- Water shortages affect **40 percent** of the **global population**.
- There is a gap between the supply and demand of the finance necessary to rectify this problem.

### **Government schemes for water conservation**

- **Jal Shakti Abhiyan**-to promote water conservation and water resource management by focusing on implementation of five target interventions - water conservation and **rainwater harvesting, renovation** of traditional and other water bodies/ tanks, reuse and recharge of **bore wells, watershed development, intensive afforestation**.
- **Atal Bhujal Yojana**- focuses on sustainable ground water management by **strengthening capacity** of States to manage their ground water, improving **ground water management** with community participation, preparing village level water security plans, **converging** various other on-going schemes.
- **National Water Mission – Sahi Fasal** – encouraging farmers to use fewer intensive crops, **Water Talk**- monthly seminar a platform wherein best water conservation practices are discussed.

### **Current challenges in climate funding (Need for water credit)**

The current efforts for climate finance have many challenges which necessitate to act collectively for 'net water positive' outcomes through efforts like the usage of water credit.

**Challenge in Mobilising finances from both domestic and international source:**

- Most of the international support is towards climate mitigation efforts rather than on adaption front. International support towards mitigation projects is weak and the modalities of financing mechanisms shifted from grants to loans.
- Use **local financing opportunities** for financing climate mitigation and adaption efforts.
  - Adaptation finance help communities reduce the risks they face and harm they might suffer from **climate hazards** like storms or droughts.
  - It provides for things like **stronger housing, drought-tolerant crops, social safety nets**, or improved **decision-making** related to **climate-related risks**.
  - From the private sector, **CSR allocations** can be taken as **adaptation finance**.
  - In a study by **KPMG**, in 2018-19, the top 100 companies in India spent around \$1.06 billion towards **CSR initiatives**.
  - In 2020, 20 % of the total funds were used in **adaptation activities**.

### **Challenge in CSR Funds:**

- CSR funds is focused on **developmental goals** rather than **climate adaptation**.
- CSR funds, that represent 3rd **largest pool of climate finance** after government spending and multilateral financing, shows fragmented and ineffective.
- **Example:** Industrial sector is the **second highest user of freshwater** in India. To address the risk of decreasing water availability, the sector is investing CSR funds in watershed programmes.
- But most of the benefits of these initiatives **remains local at the cost of other regions**.
  - For example, an increase in the local water table can encourage farmers in the region to take up intensive farming at the **cost of downstream flows**.

### **Looking ahead**

- The adoption of water credits would require a **multiplayer approach** including regulatory players and local governance institutions as well as sustainability advocacy groups and industry leaders.
- There is **need for innovation** in adaptation finance to achieve water resilience.

- There is need to fundamentally re-evaluate our priorities towards climate change by striking a better balance between mitigation and adaptation efforts.

**Water credit** is important for national-level adaptation goals and will help meeting country's target against goal of **1.5° C** when evaluated at **Global Stocktake at COP28** in 2023. Also, this was an objective of the **Glasgow-Sharm el-Sheikh work programme** on the **Global Goal on Adaptation**. Channelling CSR funds effectively towards climate adaptation may provide a new source of climate finance.

### **Skyrocketing Air Pollution Levels during Winter**

- Protecting public health while giving protection to environment is given importance in India's constitution.
  - **Article 21 – Right to health** is a part of **right to life** guaranteed under this article and right to health is thus a fundamental right.
  - **Article 48-A-** under **Directive principles of state policy**, the state shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country.
  - **Article 51 A-** Aims to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.
- **Health** is one of the **United Nations' sustainable development goals**.
- The effects of exposure to bad air are experienced most by the **vulnerable section** of society — **children**, the **elderly**, **pregnant women** and those with **pre-existing health conditions**.
- According to **The Lancet** - In India, in 2019, 17.8% of all deaths and 11.5% of respiratory, cardiovascular and other related diseases were due to high exposure to pollution.
- During winters the air quality reaches toxic levels. Crop residue burning and vehicular pollution are among the major reasons behind such high levels of air pollution.

### **Temperature inversion in winter**

- In winter, a confluence of natural phenomena exacerbates air pollution. Overcast weather, in particular, tends to trap the pollution beneath the cloud. In this kind of temperature inversion, the warm air acts as a lid, covering air pollutants.

- Air temperature usually falls along with increased elevation. But sometimes during the night, and more often during cold nights, there is a warm layer of air between the layers of cooler air. This is called temperature inversion. Here we will explain the origin of the following 3 types of temperature inversion connected to air pollution. They are as follows:
  1. Surface inversion
  2. Subsidence inversion
  3. Frontal inversion
- 1. Surface inversion usually occurs during cold and windless nights. During cold winter nights, the earth surface loses temperature very fast. The air close to the surface gets cooler faster than the air above it. This is how the warmer layer of air, above the colder one, comes to be formed.
- 2. Subsidence inversion occurs around high-pressure centres when a large air mass moves downward. And if it continues further down near the ground then this air close to the surface becomes colder than the air above it. Subsidence inversion is more often seen near subtropical oceans and the Nordic continents because they are located in high-pressure centres.
- 3. Frontal inversion happens on the borders of hot and cold fronts. The cold air mass is denser and pushes the hot air above it. Thus the lighter hot air stays above the cold and denser one and this is how this phenomenon occurs.
- So what is the correlation between temperature inversion and air quality? Warm layers prevent the air below it passing through. Thus, pollutants from household heating, vehicle exhausts, and other industrial pollutants circulate near the surface. The concentration of toxins in the air we breathe increases and we get stuck in a “Large Dome”.
- A city located in a valley and close to a mountain is more liable to experience temperature inversion than other cities. The cold air is denser and heavier; therefore it often slides down the mountain slope and ends up in a valley, leaving the warmer air above.
- So, in reality, winter air is actually worse. If you suffer from asthma or congestive problems then you should pray for storms – rain or snow – popularly known as ‘scrubbers’, to clear the air. Otherwise, especially in Asia, excessive quantities of harmful components – lead, zinc and polycyclic aromatic hydrocarbons – contaminate the air. So winter air pollution definitely aggravates breathing problems.

### Risks associated to stubble burning

- **Crop residue** burning releases
  - 149.24 million tonnes of **carbon dioxide** (CO<sub>2</sub>)
  - 9 million tonnes of **carbon monoxide** (CO)
  - 0.25 million tonnes of **oxides of sulphur** (SOX)
  - 1.28 million tonnes of **particulate matter**
  - 0.07 million tonnes of **black carbon**.
- Burning of crop residue contributes to environmental pollution and are responsible for the **haze** in **Delhi** and melting of **Himalayan glaciers**.
- The heat from burning paddy straw penetrates 1 centimetre into the soil
  - This increases the temperature to 33.8 to 42.2 degree Celsius.
  - Heat kills the bacteria and fungus important for a fertile soil.
- It damages other micro-organisms present in the upper layer of the soil as well as its **organic quality**.
  - This makes crops more **prone to disease**.
  - The **solubility capacity** of the upper layers of soil reduces.

### Solution of stubble burning

- **Haryana** - Farmers are being given a 50 percent subsidy on equipment of **crop residue management** and an 80 percent subsidy on **custom hiring centres**.
- **Chhattisgarh** – Stubbles are collected from the farmers inside **Gothan** and then converted into **vermin-compost**.
- Mix stubble with green grass in **cattle feed** and use dung for fertilizer.
- Farmers can be trained in making **fertilizer** from **stubble**.
- Labourers should be hired under **NREGA** to collect stubble and work towards conversion into **vermin-compost** and **organic fertilizer**.
- Employing agricultural machines like:
  - **Happy Seeder** (used for sowing of crop in standing stubble)
  - **Rotavator** (used for land preparation and incorporation of crop stubble in the soil)
  - **Zero till seed drill** (used for land preparations directly sowing of seeds in the previous crop stubble)
  - **Baler** (used for collection of straw and making bales of the paddy stubble)
  - **Paddy Straw Chopper** (cutting of paddy stubble for easily mixing with the soil)

- **Reaper Binder** (used for harvesting paddy stubble and making into bundles)

### Government initiatives

- Union government released the **National Policy for Management of Crop Residue**.
- Formation of **commission of air quality management**
  - it was set up for Air Quality Management in **National Capital Region** and **Adjoining Areas** for better co-ordination, research, identification and resolution of problems related to air quality index and other such matters connected with it.
- **Steering committee on air pollution and health related issues** formed by health minister.
- **National ambient air quality standards (NAAQs)** was formed to protect public health and environment from air pollution.
- **Steering committee on air pollution and health related issues** formed by health minister.
  - **Aim**-to develop a prescription that would primarily focus on health benefits.
  - It **prioritised** interventions that contributed most in **reducing exposure** and thus providing health benefits.
  - It brought to light local and global **epidemiological evidence** of harmful effects of air pollution.
  - It suggested policy measures that aligns itself with science (for example- focusing on household cook stove smoke).

### Drawbacks in government initiatives

- **Commission for Air Quality Management** lacks representation of health.
- The **National Ambient Air Quality Standards (NAAQs)** review is opaque process as it does not determine local conditions and impact of pollution on vulnerable group.
- **“Polluters pay”** principle has been transformed into **“pay and pollute”** principle.
- Isolated nature of policymaking and an insufficient understanding of health among policymakers.
- According to **Centre for Policy Research** health sector representatives forms less than 5% of the membership of **State Pollution Control Boards**.
- Many policy level decisions related to pollution are made without any consideration of their potential second and third order effects, especially on health.

### Suggestions

- Bringing changes in **policy design**
- Need to formulate policy to stop **stubble burning**.
- Proper implementation of policy for thermal power plants.

- Approach like Health ministry's **steering committee on air pollution and health related issues** should be promoted
- Indian air pollution policies must include 'Health' impacts in air pollution policy

The approach to tackle air pollution has been tried and many has proven effective yet a lot has to be done in this area. The choice lies before us whether today we want to focus on **science and health** which is a long road of fixing this problem or continue on the same path that has led us to this **smoggy status quo**.

### **What does liberal nationalism stand for?.**

- In this modern world comprising 8 billion people, there are a large number of groups and communities having their own unique language, culture, way of life, and even religious practices. However, as human beings, certain basic rights are to be provided to us, which can't be taken away from us under any circumstances. Yet, in several nations, these rights are taken away from people belonging to minority communities. Such disparities between the different communities call for a need to stand together. This leads us to the concept of liberal nationalism, which plays a very important role in upholding this feeling of unity and oneness among the people. Yet, in recent times, certain restrictions are being imposed upon free speech, which is an integral part of liberal nationalism, of such deprived people when they aim to assert their rights.
- Nationalism is the feeling of oneness among the people living within a particular territory of a nation. The spirit of nationalism spreads to the people when they start believing that they are all a part of the same union and when they discover some unity among them that would bind them together. In India, the spirit of nationalism developed among the people when they developed a sense of collective belonging among them at the time of the freedom struggle.
- There are different theories of nationalism that are prevalent all over the world. Some of these examples are:
  1. Ethnic nationalism
  2. Language nationalism
  3. Religious nationalism
  4. Expansionist nationalism
  5. Civic or liberal nationalism



- All forms of nationalism aim to ignite patriotic feelings among the people and develop a sense of belongingness towards the nation, yet the means of achieving it are different. For example, expansionist nationalism aims to develop patriotism through the expansion of their territory by militaristic means.

### What is liberal nationalism?

- Liberal nationalism is a concept that aims to develop a feeling of national identity by providing equal rights to all people regardless of their caste, creed, gender, religion, etc. It primarily focuses on equality in all respects for all the people in the country. It encourages the active participation of the citizens in the decision-making process, thereby providing legitimacy (public acceptance) to the state authorities. The underlying notion behind this theory is that all the people in this world are equal and, hence, must be provided with equal liberty, basic human rights, and equality before the law.
- This theory of nationalism had been suggested by Jean Jacques Rousseau in his book '*The Social Contract*'. He suggested that it is the responsibility of the government to protect and promote the rights of the people. His theory suggested the relationship that should be there between the citizens and the state, with the state protecting people's rights.
- Hence, liberal nationalism is a theory that is built upon shared citizenship among the people within the state. A nation would be called 'civic' only when the political institutions or liberal principles are respected and upheld by the people of the nation. This theory is not affected by the ethnic diversity of any country, as equal rights are to be provided to all citizens regardless of their ethnicity.

### Liberal nationalism .vs. Ethnic nationalism

- People are allowed to practice their fundamental rights in India without any discrimination and can lead an autonomous life as per their own will. Liberal nationalism, to a large extent, lays down the responsibility of the state to respect the rights of all communities and ensure that there are no ethnocentric decisions or approaches on their part. Ethnic or ethnocentric nationalism is the exact opposite of liberal nationalism.
- While liberalism focuses on empowering all the people from the various communities together, ethnocentrism focuses on the majority's rights or preference for only one of the communities. It hampers the development of any nation. On the other hand, liberal nationalism helps in unifying the people

across the country in a much better manner, whereas ethnic nationalism can create a division or a rift among the population by favoring the majority community over the minority.

- Yet in several situations, liberal nationalism can be combined with ethnic nationalism to constitute state nationalism. As per state nationalism, a country comprises a community of people who contribute to the maintenance and strength of the state. This is the basic objective of every human being who lives in a given country.
- Hence, liberal nationalism is a more inclusive theory than other forms of nationalism as it is very inclusive and accepting in nature. This is the primary reason that liberal nationalism still holds a lot of relevance in India and other countries.

### Genesis of liberal nationalism

- The concept of liberal nationalism had developed for the first time in Europe, after which it became a pervasive ideology in several countries. As discussed in the previous section, the concept of national unity has been developed to ensure equality and freedom for all people. The concept of liberal nationalism came up around the 18th century when Jean Jacques Rousseau introduced the Social Contract Theory. From thereon, a lot of events happened that led to the growth of this theory in Europe.

### *The Social Contract Theory*

- The Social Contract Theory has been developed by Jean-Jacques Rousseau and aims to establish a relationship between the people and the state. It aimed to address the questions on the origins of society, i.e., how does society gradually develop? Apart from this, it also aims to focus on the legitimacy of the state's authority over any given individual. In addition, his theory mentioned the abolition of the monarchy and despotism, which became the basis of the French Revolution in 1789. His theory laid the foundation stone for the growth of liberal nationalism all over the world. The people of France obtained a sense of collective belonging that eventually led to the abolition of the Monarchy. This further inspired people all over the world to raise their collective voices.

### *French Revolution*

- In 1789, the French Revolution took place, which laid down the idea of nationalism for the first time. There was a transfer of sovereignty from the monarchs to the French citizens, thereby making it a republic. This further led to the introduction of such practices which would help in creating a sense of collective identity (united community) among the people and equal rights for all as guaranteed by the law. This was a major development that took place with respect to liberal nationalism in the 18th century.

### *Industrialization in the 19th Century*

- Coming to the mid-19th century, there was rapid industrialization taking place across France that led to the development of commercial classes. This increase in industrial production created new social groups such as the working class and the middle class, which were composed of industrialists who had good educational levels. They fought to abolish the privileges of the aristocrats and to develop national unity. This ideology gained a lot of prominence, which further contributed to the theory of liberal nationalism.

### *German Revolution of 1848*

- In 1848, a serious attempt was made by the liberals to unify all the German-speaking states. The main cause of this revolt was the growing discontent among the people after the order imposed by the Vienna government. Though the liberals weren't able to succeed in the German Revolution, the idea of individual freedom and civil equality was conveyed to the major sections of society as a result. Later, in 1871, Otto von Bismarck, the Prime Minister of Prussia, acknowledged that liberalism was everywhere in Germany. There is a need to mold it to shift its focus to realism, or 'Realpolitik'. Similar revolutions also took place in other European countries, but none of those revolutions succeeded in 1848.

### *Further developments*

- After the Revolution, Germany disintegrated, whereas countries like Italy and Great Britain were unified. However, this unification brought with it several

adverse consequences. The distinctive cultures of Scotland and Ireland were highly suppressed, thereby violating the principles laid down under liberal nationalism. This was because the English nation had steadily grown in power and wealth and hence aimed to impose their influence. In Italy, the rate of illiteracy was so high that many people were not even aware of the liberal-nationalist ideology.

- Yet all these events played a significant role in the development of the concept of liberal nationalism, which was conveyed to countries outside Europe as well. For example, this theory played a vital role in unifying the people at the time of the freedom struggle. This theory, as a result, permeated from Europe to several other countries and inspired various nationalist movements.

### **Liberal nationalism at a global level in current times**

- At this given point in time, liberal nationalism is enjoying one of its best phases all over the world. More and more people are joining together, and the theory is transcending international boundaries. They are fighting for basic human rights, global environmental rights, promoting sustainable development, and combating climate change.
- The 'Black Lives Matter' campaign, launched initially in the USA, was to restore the basic human rights of black citizens in the USA. This movement was launched after the murder of George Floyd by the police while he was in police custody. This is a form of liberal nationalism in which not only the aggrieved community but all the communities in that country join together to fight for equality and freedom. Finally, mass protests took place in support of the black community worldwide, and finally, their rights were also restored.
- The Indian Freedom Struggle was the prime example of liberal nationalism in India, which paved the way for a large number of measures and initiatives to be introduced in the future. The initiatives to protect women from facing any domestic violence, focusing on the reduction of infant mortality, and reservation for representation of disadvantaged sections of society in Government jobs are all examples of liberal nationalism in India. These aim at ensuring equal opportunities for all, thereby promoting their right to livelihood.
- The battle against climate change has brought the world together since it is a common problem faced by the entire world. It was a form of liberal nationalism that was not restricted to merely a given country or region but across the entire world. It aims at providing the basic right to the environment, which further includes a right to safe and clean living conditions. Every individual is entitled to such rights. Furthermore, there is a need to preserve the environment and natural resources for future generations so that they do not suffer. Hence, the

term 'nationalism' nowadays is not only restricted to any given nation but applies to the whole world at once.

- Certain countries in the world have flexible and generous citizenship rules, such as France, whereas Germany still gives a lot more importance to the person's ethnicity. This clearly reflects the difference between liberal nationalism and ethnic nationalism. On the other hand, France still has certain provisions which exclude Muslims from any form of social participation and which provide a subordinate role for Muslims in society.
- As a result, liberal nationalism nowadays has become a vital factor in bringing together people all over the world to combat global challenges. It can eventually help create awareness of global issues by helping them transcend all borders.

### Causes for the growth of liberal nationalism in India

The growth of liberal nationalism in India dates back to the freedom struggle that took place at the beginning of the 20th century. There were several factors that led to the growth of liberal nationalism in India, which will be explained.

#### *Rise of a new middle class*

- Like in Europe in the 19th Century, there was a new educated middle class that was growing in India at the beginning of the 20th Century. They were demanding equal rights for all in the country and eventually played a vital role in helping India achieve independence from British rule. This middle class comprised a significant portion of the Indian population, which was concerned with putting British rule to an end.

#### *Growth of press*

- The growth of the press and print media played a vital role in conveying the idea of liberal nationalism among the people. It eventually became a tool to criticize British rule and spread the word of unity among the Indians. The British used strict measures for censorship of the content published by Indians to suppress the freedom struggle, but by the 20th century, there were so many Indian periodicals that it became very tough to restrict all. Some of the prominent periodicals at that point were Hindustan Dainik (started by Madan Mohan Malviya), Young India (MK Gandhi), etc.

*Growth in vernacular literature*

- Mahatma Gandhi was very much in favor of mother tongues or vernacular languages becoming the medium of instruction in schools and the language for communication. He believed that this would help in bringing the people together and would create a sense of belonging among them for their nation. There was a huge amount of literature being written in vernacular or regional languages at that point, which at first helped in making all people understand the idea of liberal nationalism and, secondly, gave respect to the cultures and languages of different communities. Even today, there is abundant vernacular literature that is published across the country, such as Bartaman (Bengali), Dhanam (Malayalam), and several others.

*National movements outside India*

- At the time of the freedom struggle, there were several other movements that were taking place outside of India. The prime example of this was the Ghadar Movement in the United States of America. The Sikh ex-pats had formed the Ghadar party to gather support for the Indian National Movements at the global level. This further encouraged the people within the country to fight for their independence. Hence, it was one of the very important factors that led to a growth in liberal nationalism among Indians.

*Western education*

- Though western education was imparted to only a few Indians by the British, they learned about the democratic ideals and principles laid down by the learned thinkers. They further communicated these principles to their fellow Indians for strengthening their support for the freedom struggle. They came to know that they, as human beings, had certain rights which they were being deprived of by the British. Hence, they realized the need to gain independence and live their lives with complete freedom.

*Development of new means of transportation and communication*

- There was a massive development in the means of transportation along with communication, such as postage, during British rule. After independence, the

use of telephones became very common. All these facilities helped in spreading the word of liberal nationalism among the people easily and within a very short period of time, which was the need of the hour. People could easily travel from one place to another to participate in the demonstrations and rallies that took place to make themselves aware of the developments taking place. Its current contribution to the growth of liberal nationalism in India hence can't be underestimated.

### *Socio-religious reforms*

- There was a unification of the people in the country with the help of the introduction of socio-religious reforms by Raja Rammohan Roy, Vivekananda, and Sir Sayyid Ahmed Khan towards ensuring equality, the abolition of Sati, and providing individual liberty to all. These helped in developing the idea of liberal nationalism among the people and evoked a newfound spirit of belongingness among them.
- These have been the major reasons for the growth of liberal nationalism in India and also increased awareness among the people. Most of these factors came up during British rule, as this theory was put to use for the first time by the literate middle class during that time.

### Constitutional provisions promoting liberal nationalism

The Constitution of India promotes liberal nationalism among the people by providing them with freedom in all aspects and ensuring their equality in society. The people of India also have the right to freely voice their opinions and to express their grievances. There are a large number of constitutional provisions which promote liberal nationalism.

#### *Article 14*

- Article 14 of the Indian Constitution talks about the Rule of Law. It essentially means each and every individual is to be treated equally in the eyes of the law. This is the very purpose of liberal nationalism, in which all people, irrespective of their ethnicity, must be respected.
- *Article 15*
- Article 15 states that there shall be no discrimination against any person on the grounds of caste, gender, sex, religion, etc. It further aims to promote equality among all and heal the wounds created by the caste system in the past.

*Article 19(1)(a)*

- Article 19(1)(a) is one of the most important articles for promoting liberal nationalism in the country. It states that each and every person has the right to freely express their opinion, within some reasonable restrictions such as national security, sovereignty, or foreign relations. The people, by voicing their opinions, can hold the government accountable for its actions. This is an essential element for any democracy to survive.
- In the case of *Disha A Ravi v State of NCT of Delhi (2021)*, the Court clearly held that the right to Freedom of Speech and Expression also constitutes the Right to Disagree, Dissent, and also to gather International Support for any given cause. The Right to Speech has to be on the highest pedestal in any democracy. The government can't misuse its powers and charge any person for sedition or any other offense to just administer its wounded vanity. Unless the criticism made by the individual doesn't incite any violence or hatred towards the government, regardless of the speech, it can't be suppressed by the government.

*Article 21*

- Article 21 of the Constitution mentions the right to life and personal liberty, which are provided to all the people in the country. Every individual has the right to lead a life with dignity and also has the very important right to privacy.
- In the case of *Justice KS Puttaswamy v Union of India (2017)*, the Right to Privacy was held to be a fundamental right that can't be violated under any given circumstances. Further, the fundamental rights under Articles 14, 19, and 21 of the Constitution of India are known as the "golden triangle." It means that violation of any one of these rights would automatically violate the other two rights as well.
- These are some of the constitutional provisions that aim to directly support liberal nationalism in India. The aim is to create a sense of belongingness among the people by providing them with basic human rights and preventing them from exploitation.

Limitations of liberal nationalism

Liberal nationalism has several benefits and has proven to be vital in the nation-building process, especially in India. Yet, at the same time, it has certain drawbacks which can't certainly be ignored. These limitations act as hindrances to its universal use.

*Complicated unification*



- The unification of all communities in a country is a fairly complicated task. Equality and freedom for the disadvantaged sections of society might not be acceptable to the upper class as it would mean sacrificing the privileges they have. This might further lead to conflicts between the upper class and the poor, thereby directly hampering the process of unification and nation-building.

#### *Problem of Regionalism*

- There was significant use of vernacular languages to promote liberal nationalism and shun the use of English in all its forms. However, its ill effect could be growing 'regionalism'. The people having the language might discriminate against those who have another native language by developing the belief that their language is much superior to all the other languages. It would lead to increased unification among the people who have the same mother tongue, but in the long run, it is the overall unification among the people belonging to different castes, regions, etc. that is necessary to promote liberal nationalism.

#### *Lack of social solidarity*

- Liberal nationalism has a major focus on protecting the rights of refugees by allowing them to immigrate to their countries. However, the increase in immigration could further worsen the process of social solidarity as different communities might develop. Conflicts between them might rise as the migrant community might not be easily accepted by the others in society.

#### *No limits on personal freedom*

- Liberal nationalism calls for personal freedom for all. However, it doesn't lay down the extent to which it should be practiced. This might create some problems because the freedom of one might cause distress to the other. Uncontrolled freedom and autonomy are also not good for any nation. This could also lead to conflicts. Hence, this non-fixation of the limit to which a person should exercise his/her freedom could be extremely harmful for any nation.

*Lack of state control*

- Liberal nationalism focuses to a large extent on the abolition of all trade barriers and state control. This is also one of the key features of 'liberalism'. However, completely preventing the state from controlling the market could defeat the welfare purpose of liberal nationalism itself. The resources would be allocated according to the market forces, and the poorer sections wouldn't be able to improve their conditions. Secondly, if the market crashes, all the people would have to suffer its adverse consequences, and they might be deprived of their basic rights.

These are some of the major limitations of liberal nationalism that have led to a reduction in its usage among countries in current times.

Critical analysis of liberal nationalism

Liberal nationalism is a theory that has had negative as well as positive impacts on several countries.

*Case for liberal nationalism*

- On the one hand, it focuses on the vision of equality for all, but on the other hand, it might lead to conflicts between the different communities as the rights are provided to the minority at the cost of the privileges of the majority community. Though it is justified, the majority community can certainly be offended.
- In India, this form of nationalism played a vital role at the time of the freedom struggle. There were several causes that led to the growth of liberal nationalism, which helped in bringing together the people from all over the country and unifying them.

*Case against liberal nationalism*

- More often than not, this theory has been criticized by the native ethnic groups as it focuses on the inclusion of migrant communities, which would imply giving up certain privileges. Further, this theory doesn't provide any mechanism through which these conflicts could be addressed.
- Even in India, where Liberal Nationalism has had a positive impact, it has sometimes also led to increased instances of regionalism. This might lead to the demand for separate statehood, as in the case of the division of Andhra Pradesh from Tamil Nadu in 1956, or regional autonomy for several areas, leading to a rise in the regional parties.

- Hence, the objective of liberal nationalism is certainly very positive as it aims to ensure equality for all, but at the same time, it's easier said than done. In the process, conflicts might arise, and instead of unification among the people, the region or the country might even break apart. Hence, this theory has both its pros and cons, both of which should be considered.

### Summing up

The ideals of democracy, liberty, equality, and freedom/ autonomy as proposed under liberal nationalism are still as important to people as they were in previous times. The aspect that has changed so far is that now it's no longer only restricted to Europe, where it had come into existence. On the other hand, it can also have certain negative impacts, which should also be considered. Hence, it can be concluded that there is a need to bring about some changes in this theory so that the state can fulfill its objective of ensuring the inclusion of all the people in society. This would further ensure equal rights for all to achieve an amicable environment for all in the region. Liberal nationalism will only then achieve its purpose.

### **A court of the future**

- The Supreme Court **sits in final judgment over decisions** not only of the high courts in the states but also over a hundred tribunals, central and state, functioning throughout India.
- As per Article 141, the law declared by the Supreme Court, its pronouncements on the **constitutional validity of enacted law are binding** on all other courts and authorities in the country
- There is **virtually no area of legislative or executive activity** which is beyond the Supreme Court's scrutiny.
- However, empowering itself with the trappings of modern technology, India's Supreme Court has been striving to perform its arduous task.

### **Challenges of Indian Judiciary**

- **Law commission** has submitted more than 200 reports on Judicial governance.
- A bench of three justices of the Supreme Court had drawn up a fine blueprint:
  - On case management
  - On how to make recent amendments in the procedural laws work on the ground.
- In the **Salem Advocate Bar Association case**, the justices had requested the high courts to implement the detailed blueprint. But most of them have not.
- However, they **could not direct the high courts to do** so because under the Indian constitution, the **High courts are autonomous constitutional bodies** not subject to administrative directions of the Supreme Court.
- It is in the high courts that there are now **left the largest number of roadblocks and delays**.
  - In their administrative functioning, the high courts are answerable to no one but themselves.

### **Example of the United States**

- In the United States, under the Judicial Councils Act, of 1980, **judicial independence has been undertaken by the judges**.
  - The Act confers powers on bodies comprised of judges to take such action against a federal judge “as is appropriate, short of removal.”
- Judicial independence, protected by **Article III of the US Constitution**, was meant “to insulate judges from interference from other branches of government — not from oversight by other judges”.
- However, in India, **citizens need the reassurance of a system** of judicial accountability.
  - Judicial accountability is a remedial mechanism which will protect the higher judiciary from some of its own members who have gone astray.

### **Suggestions for Indian Judiciary**

- The judiciary as an institution **needs to preserve its independence**.
  - To do this, it must strive to **maintain the confidence of the public** in the established courts.
  - The independence of **judges is best safeguarded by the judges themselves** through institutions that the law empowers them to set up to preserve the image of a higher judiciary.

- It is time that the Supreme Court be **entrusted with direct responsibility for the functioning of the high courts:**
  - Only then can the **highest court be an effective apex court,**
  - Only then can the **Supreme Court be made answerable** for judicial governance for the entire country.
    - **Judicial governance** means that all judges who are constitutionally entrusted with the responsibility of protecting the rights of citizens must also be seen to be persons of rectitude.
- Judges must make **annual financial disclosure statements**, not privately to their respective chief justices, but publicly.
  - It is done by justices of the Supreme Court in the world's oldest democracy, the US.
  - All such disclosure statements of its judges be made and then also published in India.

An independent judiciary is necessary for a free society and a constitutional democracy. It ensures the rule of law and realization of human rights and also the prosperity and stability of a society. Judges are at the forefront of judicial independence and thus judges must set an example for ministers, central and state, for members of Parliament and of state legislatures, and for all high officials of government, to follow.

### **Role of private sector and International cooperation**

- India has to travel much before it catches up with rest of the world in **private sector participation in space programmes.**
- India's private sector has the **talent** and **experience** to shorten that distance if Government creates appropriate **policy environment.**
- There is growing range of use of space possibilities –
  - For delivering **broadband internet.**
  - **Mining** of the Moon.
  - **Space manufacturing.**
  - Deep space **exploration.**
- However, currently India's share in global space market is **2 percent.**
  - Government wants India to **increase** its share to **8 percent** in coming years.

### **World's history of space before Private companies' entry**

- During emergence of space in **second half of 20th century**, Governments were leading the programme.
  - It was due to use of space for **military purposes**.
- Space programmes became **Government monopoly** because of **cost, complexity and research-intensity** of space effort.

### **Private Companies involvement in space around the world**

- In **21st century**, role of the private sector in space has expanded.
- The private sector's involvement is **complemented** with growing **international cooperation** to increase **commercial possibilities** in space.

Today private companies own **satellite business** such as:

- **Space X:** A private spaceflight company that sends satellites and people to space.
  - Was first private spacecraft to carry astronauts to orbit.
- **Amazon's Blue Origin** rocket will soon develop its launching vehicle.
- **Starlink satellite system** has more than 2,300 satellites in low earth orbit-
  - It delivers various space services.
  - Example-It provided **military information** to **Ukraine's** armed forces in their war against **Russia**.
- **Amazon's Project Kuiper** plans to launch more than **3,000 satellites** in the coming years.
  - It will offer services like **broadband internet**.
  - This will involve making three satellites a day.
- **NASA's Artemis project**
  - Many private companies and countries are helping USA for this project.
  - Aerospace companies like Boeing, Lockheed, Northrop Grumman, Airbus and Space X are helping.
  - Countries like **France, Canada, and Japan** are involved.
  - **Artemis 1 rocket** was launched on **16th November 2022**.
  - Under **Artemis mission**, NASA will land **first woman** and first person of **different race** on **Moon** using technologies to **explore lunar surface**.

### International cooperation and competition of space programmes

- Idea of **international cooperation** in outer space was developed in **multilateral treaties**.
- It was **geopolitical competition** that shaped space programmes of the major countries during **Cold War era**.
- Competition between **U.S.** and **Soviet Union** made them cooperate with other countries' **space programme**.
  - It was part of the **Cold War strategy** of **winning friends** and **influencing nations**.
  - They had developed **bilateral cooperation** in space to **demonstrate** their **desire for peace**.
- European countries together developed **European Space Agency**.
- Many countries like **India** began its own **national space programmes**.
- India offered **space cooperation** with other **friendly developing** countries.
- **Russia** and **China** are collaborating in space programmes like **building joint base** on the **Moon**.
  - This programme will establish **long term human presence** on moon.
- Cooperation in space is also discussed by **Quad countries** — **Australia, India, Japan, and the United States**.

### Space programmes in India

- India's aim was to support outer space to accelerate **national development**.
  - Later, space programmes were used for military and commercial purposes.
- India's space programme began with **cooperation** with **Western countries** and later with the **Soviet Union**.
- In 1974, **Non-proliferation sanctions** on India after its **first nuclear test** led to withdrawal of space cooperation by other countries.
- After **civil nuclear initiative** sanctions were relaxed.
- India in **2016** became part of **Missile Technology Control Regime (MTCR)**.
  - MTCR **regulates commerce** in space related commodities and technologies.
  - MTCR limits the proliferation of **missiles** and **missile technology** (**nuclear** capable specifically).
- India in **2017** became part of **Wassenaar Arrangement**
  - It controls **trade** in dual use technologies- **civilian** and **military** purposes.
  - It **exchanges information** on transfer of **conventional weapons**.

- For India, outer space until now was about “**development**” and “**national prestige**”.

### **Private sector in space programmes of India**

- **Airtel** in India is a partner of **OneWeb corporation** that offers connectivity through its **500 satellites**.
- **Godrej & Boyce, Larsen & Toubro, and Walchandnagar Industries** are some of private companies that have contributed to Indian space programme.
- India is drawing on **foreign capital** to support its **start-ups**.

### **Vikram S launcher**

- It is **first private** Indian rocket in space built by company **Skyroot Aerospace**.
- It was launched recently in a mission called **Prarambh**.
- It was launched as a result of **Government's** push to open up the Indian space programme for participation by **Indian start-ups**.
- **Singapore's sovereign wealth fund** was a major investor in **Skyroot Aerospace**.

### **Suggestions for India's space programme**

- It must expand its purpose to increase **business** and enhance **economy**.
- To raise India's share in global space market, it must draw in the **private sector companies** to play a larger role.
- **Foreign Direct Investment** should be allowed in all section of **India's space programme** as many **Western aerospace companies** wants to invest.
  - Currently FDI is allowed under government route only for **satellite establishment** and **operations**.

India has just started to enhance the contribution of its private sector in outer space which must grow **exponentially** in the near future. India is now able to understand that



**international cooperation** is not just an “**add-on**” to the **national space programme** but it must be an **integral part** of India’s space strategy.

### **Natural farming**

- To feed the growing population, it is estimated that **food production will need to increase by 60% by 2050**. This increasing food demand is promoting farmers worldwide to **increase crop production**, which builds **pressure on the environment** and exceeds its carrying capacity to repair or replace itself, leading to its **serious degradation**.
- ‘**Natural Farming**’ is suggested as a **neoteric approach to improve both traditional and modern agricultural practices**, which aims to **safeguard the environment, public health, and communities**. It has the potential to enable food production **without compromising the needs of future generations**.

#### Significance of Natural Farming

- **Ensures Better Health:**As **Natural Farming does not use any synthetic chemicals**; health risks and hazards are eliminated. The **food has higher nutrition density and therefore offers better health benefits**.
- **Increased Farmers’ Income:**Natural Farming aims to make farming viable and **aspirational by increasing net incomes of farmers** on account of cost reduction, reduced risks, similar yields, incomes from
- **Rejuvenates Soil Health:**The most immediate impact of Natural Farming is on the **biology of soil—on microbes** and other living organisms such as earthworms. It improves soil health and in turn increase productivity.
- **Minimized Cost of Production:**Natural Farming aims to **drastically cut down production costs** by encouraging farmers to prepare essential biological inputs using **on-farm, natural and home-grown resources**.

### Zero Budget Natural Farming

§ It is a unique model that relies on **Agro-ecology**, it calls for chemical-free farming based on **sustainable agricultural practices**.

o In the mid-1990s, **Subhash Palekar** developed it as an **alternative to the Green Revolution's** chemical **fertilisers and pesticides** and intensive irrigation methods.

§ This model aims to **lower production costs** and **return to pre-green revolution farming practices** which **do not require expensive inputs such as fertilisers, pesticides, and irrigation**.

### Major Challenges Related to Farming in India

- **Per Drop More Crop:** Only 52 % of India's **Gross Cropped Area (GCA)** is irrigated at the national level. Even though **India has made significant strides since independence, many farms still rely on the monsoon for irrigation**, limiting their ability to plant more crops.
- **Lack of Readily Availability of Natural Inputs:** Farmers often cite the lack of readily available natural inputs as a barrier to converting to chemical-free agriculture. **Not every farmer has the time, patience, or labour to develop their own natural inputs.**
- **Lack of Crop Diversification:** In spite of the rapid **commercialization of agriculture** in India, most farmers assume cereals will always be their main crop (due to skewed **Minimum Support Prices** in favour of cereals) and **ignore crop diversification.**
- **Decline in Yields:** **Sikkim**, the first **organic state in India** has seen some **yield declines following conversion to organic farming**. Many farmers have switched back to conventional farming after seeing their **ZBNF ( Zero-Budget Natural Farming) returns drop.**

### Recent Government Initiatives Related to Sustainable Agriculture

§ **National Mission on Sustainable Agriculture**

§ **Paramparagat Krishi Vikas Yojana (PKVY)**

§ **Sub-mission on AgroForestry (SMAF)**

§ **Rashtriya Krishi Vikas Yojana**

§ **Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)**

Looking ahead

- **Women's Participation in Natural Farming:** Studies have indicated that there is a **direct correlation between women's control over agricultural resources as a primary producer** and the **socio-economic characteristics of their household**.
  - Since women mostly cook for their families, **they understand the importance of natural products to nurture and nourish their children.** As a result, **women are likely to adopt natural farming sooner than men.**
    - **Women's Participation in Natural Farming** will increase their involvement in decision-making. It would also **positively impact the health and nutritional status of the family.**
  - **Integrating Traditional and Frontier Technologies: Rainwater harvesting and recycling of organic waste for plant nutrient, pest management,** etc., are examples of traditional technologies that can be used to complement frontier technologies like **tissue culture, genetic engineering, to achieve higher productivity.**
  - **Knowledge-Intensive Agriculture:** India is known for its **diversity of farming practices,** making it important to **involve diverse perspectives in a national agricultural dialogue to find suitable solutions.**
    - **A smart and precise move towards high-tech farming balanced with a naturalistic approach** will increase farmers' incomes and **many other issues of scale will be addressed.**
  - **Enterprising Natural Inputs for Farming:** **Microenterprises that produce inputs for chemical-free agriculture** shall be provided support from the government to address the challenge of **unavailability of readily available natural inputs.**
    - The promotion of natural farming needs to be combined with the setting up of **village-level input preparation and sales shops.**
  - **Towards Mimic Natural Ecosystem:** Developing **mutually reinforcing relationships** between agricultural productivity and conservation of nature is necessary.
    - There can be modifications made to farming systems in order to **make it a mimic natural ecosystem. Ecological and**

**economically useful trees, shrubs and perennial grasses can be integrated into farms in ways that mimic the natural vegetative structure.**

## **Reform and Revitalize India's judicial system**

- The **Judiciary** is the body responsible for interpreting the law and imparting meaning to it. It is the **defender of the constitution** and the **guardian of democracy**. Under the Indian constitution, the **judiciary is a single integrated system of courts for the Union and the states with the Supreme Court at the apex**.
- However, the **Indian judiciary is currently experiencing a number of problems** that are **eroding its legitimacy**. As a result, the **public is losing faith in the judicial system** and is hesitant to turn to this institution for assistance in resolving their issues.
- Since **“justice delayed is justice denied,”** it is crucial that the **judiciary solves these obstacles as soon as possible** to ensure that Indian citizens do not hesitate to approach it.

### Major Norms w.r.t. Judiciary in India

- **Security of Tenure:** A judge can **remain in office till he has attained the age of 65 years**. He can be removed by the **President** on the grounds of **“proved misbehaviour or incapacity.”**
- **Security of Salaries and Service Conditions:** Judges' salaries, allowances, etc., **shall not be changed to their disadvantage during their term of office**. The salaries of the Judges cannot be reduced except during periods of **financial emergency**.
  - Their salaries allowances are charged on the **Consolidated Fund of India** and so are **not subject to vote of Parliament**.
- **No Discussion in the Legislature on the Conduct of Judges:** No discussion can take place in the parliament regarding the conduct of any judge or about the **discharge of his duties except when there is a motion for his removal**.

- **Full Control Over its Procedure of Work and Establishment:** The **Supreme Court** is free to decide its own procedures of work and its establishment as well as the conditions of service of its employees. Thus, it is **free from influence of any outside agency**.
- **Punishment for Contempt of Court:** The Supreme Court can punish for the **contempt of court** if a person or authority makes an attempt to lower its authority.

### Challenges w.r.t. Indian Judicial System

- **Huge Pendency of Cases:** As many as **30 million cases** are still backlogged in India's court system.
  - Over **4 million of them involve the High Court**, and **60,000 involve the Supreme Court**. The fact that **this figure keeps rising demonstrates the inadequacies of the justice system**.
- **Undertrial Prisoners:** The majority of Indian prison inmates are still awaiting the verdict on their cases, and they are being held there until that time.
  - A majority of people **end up serving a longer sentence in prison than they would have otherwise incurred**, and the **costs, suffering, and anguish associated with defending themselves in court are more costly and painful** than serving the actual sentence.
- **Recruitment Delays:** Judicial posts are not filled as quickly as necessary. For a country of **135 million**, there are **only about 25000 judges**.
  - There are almost **400 vacancies in the high courts**. And around **35% of the posts are lying vacant in the lower judiciary**.
- **Favouritism and Nepotism in CJI Appointment:** Because there are no specific criteria for **evaluating candidates for the post of Chief Justice of India**, nepotism and favouritism is common.
  - Consequently, there is **no transparency in the judicial appointment**, which **negatively impacts the country's ability to regulate law and order**.
  - Also, **they are not accountable to any administrative body** that may lead to the wrong choice of the candidate while overlooking the right candidate.
- **Inequality of Representation:** Another area of concern is the composition of the **higher judiciary**, where **women are fairly underrepresented**. **Out of 1.7 million advocates registered, only 15% are women**.
  - In high courts, the **percentage of women judges is a mere 11.5%**, while in the Supreme Court there are **four sitting women judges out of 33 in office**.

Looking ahead

- **Transforming the Appointment System:** Vacancies must be filled immediately, and it is **necessary to establish an appropriate timeline** for the **appointment of judges** and to **provide the suggestions in advance**.
  - Another significant element that can **unquestionably aid India** in developing a **better judicial system** is the **All India Judicial Services (AIJS)**.
- **Reforming Investigation:** India lacks an **active investigation policy**, which leads to **many innocent people being wrongfully charged and punished**.
  - Therefore, the Indian government needs to frame an investigation policy that is **effective, proactive and comprehensive**, taking into **account all the stakeholders in the justice system**.
- **Innovative Solutions to Justice:** The solution to clearing the massive backlog of cases requires more than just appointing more judges, it also requires innovative solutions.
  - For example, **solving basic civil cases through Metaverse techniques, using blockchain technology to store data, researching IT solutions that simplify workflow, and improving courtroom facilities** are some ways to move past the current backlog.
- **Better District Courts:** The **district courts are the primary area of concern** in India's need for judicial reform, which requires a **bottom-up strategy**.
  - In order to improve judicial effectiveness at the lowest level, **judicial audits of lower courts should be taken into account**.
- **Ensuring Gender Parity:** There is a **need to maintain and promote Gender Diversity in Higher Judiciary with a fixed percentage of its members as women judges** that will lead to the evolution of a **gender-neutral judicial system of India**.

**Rare 'beaver blood moon' marks last total lunar eclipse until 2025**

- Nighttime skywatchers from **East Asia to North America** will be treated to the rare spectacle of a "**Beaver blood moon**" on 8 November 2022, weather permitting, as the **Earth, moon and sun align** to produce a **total lunar eclipse** for the last time **until 2025**.

### What's happening?

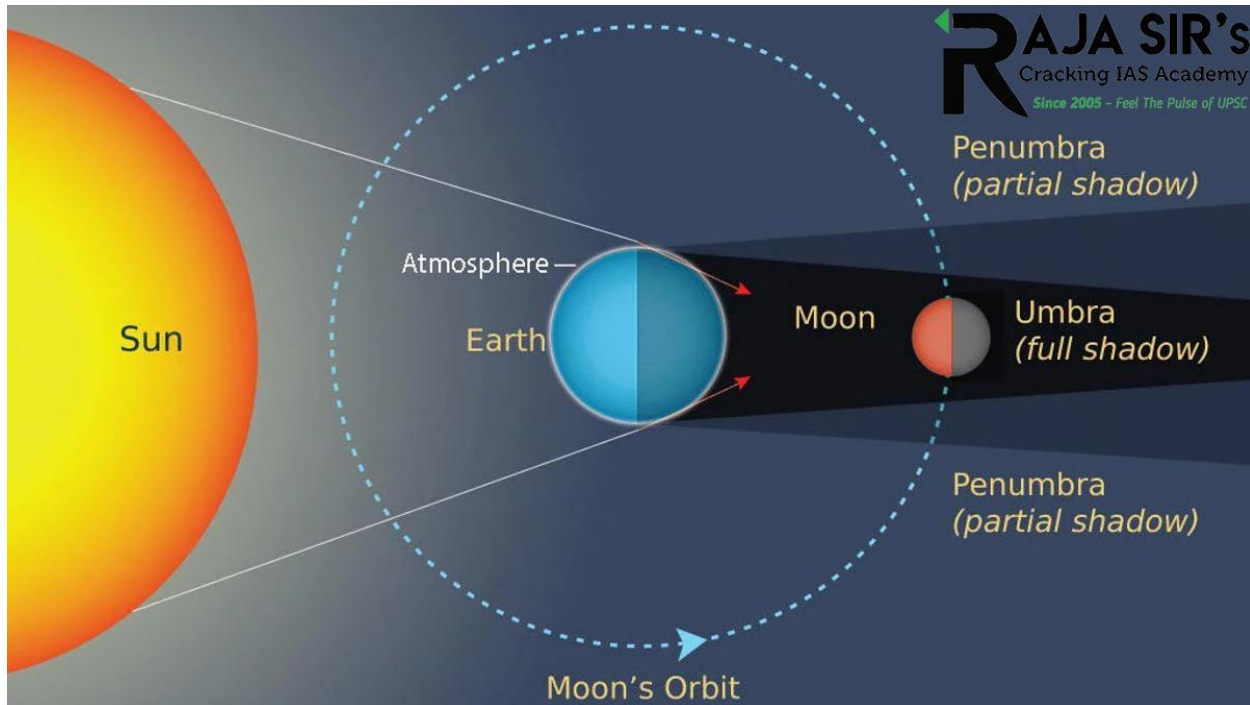
- A **total lunar eclipse** occurs **when the Earth casts its shadow completely over a full moon**, blocking reflection of all direct sunlight from the lunar orb and **dimming the color of the moon** to a reddish hue, hence the term “**blood moon.**”
- This is only possible **when the orbits of the Earth, moon and sun align** so that the moon is directly behind Earth relative to the sun. Otherwise, the moon passes above or below Earth's shadow because its orbit around Earth is usually **tilted relative to Earth's orbit about the sun.**

### Why red?

- The **reddish appearance** of the lunar surface — the moon does not entirely disappear from view — is caused by **rays of sunlight around the outer edge of the eclipse shadow**, or **umbra**, being filtered and refracted as it passes through **Earth's atmosphere**, bathing the moon indirectly in a dim copper glow.
- The **degree of redness depends on atmospheric conditions** that vary with levels of **air pollution, dust storms, wildfire smoke** and even **volcanic ash.**

### How rare

- **Total lunar eclipses** occur, on average, about **once every year and a half**, according to NASA. But the interval varies. On 8 November 2022 event will mark the **second blood moon** this year, following one in mid-May. The next one is not expected until 14 March 2025.



### Where is it visible

- On 8 November 2022 the eclipse **will be visible across eastern Asia, Australia, the Pacific and North America**. Skywatchers in Asia and Australia will see it with their evening moonrise, while the spectacle will play out for observers in North America in the early morning hours before the moon sets. It will be **visible to the naked eye** whenever skies are clear in those regions.

### How long it lasts

- The **entire eclipse will unfold over a period of nearly six hours** as the moon gradually edges into the Earth's paler, **outer shadow**, its "**penumbra**," then enters the Earth's darker, inner shadow, or "**umbra**," before reaching totality and eventually emerging from the other side.
- On the **West Coast of the United States**, the whole display will run from 12:01 a.m. PST until just before 6 a.m., with the total eclipse phase lasting about 90 minutes, peaking at 3 a.m.

### Why the Beaver moon?

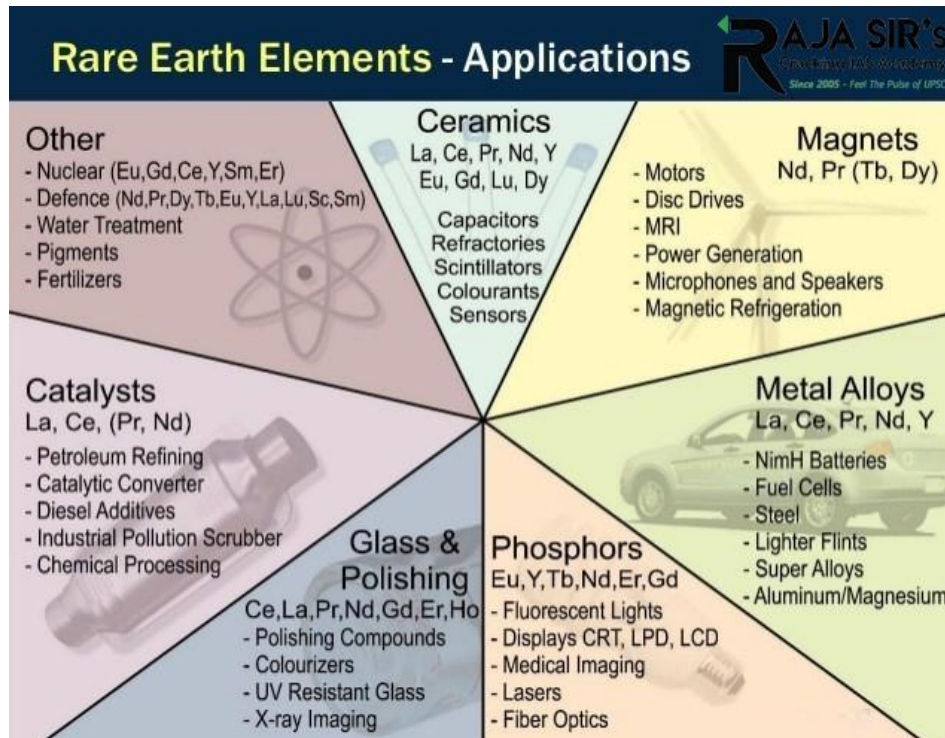


- On 8 November 2022 event will **coincide with the “Beaver moon,”** a moniker for November’s full moon adopted by the **Old Farmer’s Almanac** supposedly from **Algonquian languages** once spoken by Native Americans in the **New England territory**. When combined with the phenomena of a total lunar eclipse, it is widely referred to as a **“Beaver blood moon”** in the United States.

## **A rare earths roadmap for India**

### Rare Earth Metals

- They are a **set of seventeen metallic elements**. These include the fifteen lanthanides on the **periodic table** in addition to scandium and yttrium that show similar physical and chemical properties to the lanthanides.
  - The 17 Rare Earths are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).
- These minerals have **unique magnetic, luminescent, and electrochemical properties** and thus are used in many modern technologies, including consumer electronics, computers and networks, communications, health care, national defense, clean energy technologies etc.
- Even futuristic technologies need these REEs.
  - For example, high-temperature superconductivity, safe storage and transport of hydrogen for a post-hydrocarbon economy etc.
- They are called "**rare earth**" because **earlier it was difficult to extract them from their oxides forms technologically**.
- They occur in **many minerals** but typically in low concentrations to be refined in an economical manner.



**WHICH PRODUCTS REQUIRE RARE EARTH ELEMENTS AS RAW MATERIAL?**

Superconductors, refining catalysts, cellphones, wind mills, hybrid car components, electronic polishers and high-flux rare-earth magnets.

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**WHICH RARE EARTH ELEMENTS ARE FOUND IN INDIA?**

Monazite is the main rare earth mineral found in India. However, it contains radioactive thorium which cannot be stored and so monazite is not mined. The ministry of mines believes that rare earth elements found in Rajasthan, Chhattisgarh and Jharkhand have low thorium content and can be extracted.

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**WHERE ELSE IN THE WORLD RARE EARTH ELEMENTS ARE MINED?**

China is the largest producer of world's rare earth elements with 95% share in 150,000 tonnes of global production. Some sites under development are Nolans and Mt. Weld projects in Australia and Hoidas Lake project in Canada.

GLOBAL PRODUCTION: 150,000 tonnes

### Strategic significance of Rare Earth Elements

**Multiple Uses:** They are used in multiple hi-tech applications and processes like EVs, Medicinal appliances, LEDs etc. that domestic production of such elements becomes inevitable.

**Rising Demand:** The multifarious uses of rare earth elements in new age technologies shows that their demand is going to rise in future. For instance, the current demand of neodymium in India is small, at around 900 tonnes per annum, because domestic manufacturing of EVs and wind turbines is still limited. However, as manufacturing of

EVs and wind turbines picks up, the demand for neodymium is estimated to rise sharply by 6-7 times by 2025 (6,000 tonnes) and by 18-20 times by 2030 (20,000 tonnes).

**Reducing Import Bill:** India is almost 100% import dependent for most rare earths which creates a huge pressure on foreign exchange. Further, prices of rare elements are consistently rising due to the rising demand. For instance, the global price of neodymium has risen sharply from under US\$ 100 per kg in 2018 to over US\$ 200 per kg at present.

**Highly Concentrated Supply Chain:** The global supply scenario for rare earths is highly concentrated, much more than oil and hydrocarbons, which poses a strategic challenge. Until a few years ago, China controlled 90% of the supply of rare earths. Now, after aggressive production by the US, Australia and Canada, China's share is down to 60% but still dominant. In 2010, following dispute with Japan over Senkaku Islands in the East China Sea; **China shut down exports of Rare Earth Elements to Japan.** Given India's border dispute, China might resort to similar tactics in future.

**Huge potential:** India has greater reserves than the US and Australia, only behind China, Vietnam, Russia, and Brazil. With Russia embroiled in conflict, the onus is on India to emerge as a supplier not just for domestic use but for international consumption.

#### China's Monopoly

- China has over time acquired global domination of rare earths, even at one point, it produced 90% of the rare earths the world needs.
- Today, however, it has come down to 60% and the remaining is produced by other countries, including the **Quad(Australia, India, Japan and United States).**
- Since 2010, when China curbed shipments of Rare Earths to Japan, the US, and Europe, production units have come up in Australia, and the US along with smaller units in Asia, Africa, and Latin America.
- Even so, the dominant share of processed Rare Earths lies with China.

#### Reasons behind the limited production of Rare Earth Elements in India

**First**, rare earth materials are not concentrated enough in many geographical locations with respect to **commercial viability**. It is expensive to commercially produce them.

**Second**, at present they are classified as atomic minerals. The **mining for rare earths is reserved exclusively for government companies**. Currently, there are only two companies – Indian Rare Earths Ltd (IREL, owned by GoI) and Kerala Minerals and Metals Ltd (owned by Kerala government) that can mine them. Further, their production capacities and technological capabilities are limited which is why India is import dependent.

**Third, IREL's primary source of revenues is not rare earths.** Most of its income comes from the production and marketing of other minerals contained in beach sands. Since its revenue does not depend upon rare earth elements, **IREL has little need to produce and research.** IREL has poor incentives to refocus itself as a globally competitive rare earth extraction and processing firm. This has restricted India to be a low-cost exporter of rare earth oxides instead of higher value-added products.

**Fourth,** the present system (clubbing rare earth elements with atomic minerals) ends up **separating the rare earths ecosystem from other R&D ecosystems** like electronics or metallurgy. This severely impacts the overall umbrella of strategic research, undercutting the interdisciplinary nature of modern research work. R&D is dominated by DAE and the Bhabha Atomic Research Centre (BARC), with negligible participation by the Academia and private sector. The situation is similarly disintegrated with regards to exploration. The Geological Survey of India (GSI), Mineral Exploration Corporation Limited (MECL) and Atomic Minerals Directorate for Exploration and Research (AMD) operate in overlapping spheres while working in siloes.

**Fifth, Beach sand mining** was permitted until a few years ago but was **banned in 2016** in an attempt to conserve strategic minerals including rare earths and thorium.

#### India's Current Policy on Rare Earths

- Exploration in India has been **conducted by the Bureau of Mines and the Department of Atomic Energy.** Mining and processing has been performed by **some minor private players in the past, but is today concentrated in the hands of IREL (India) Limited (formerly Indian Rare Earths Limited),** a Public Sector Undertaking under the Department of Atomic Energy.
- India has **granted government corporations such as IREL a monopoly** over the primary mineral that contains REEs: monazite beach sand, found in many coastal states.
- IREL produces rare earth oxides (low-cost, low-reward “upstream processes”), selling these to foreign firms that extract the metals and manufacture end products (high-cost, high-reward “downstream processes”) elsewhere.
- IREL's focus is to provide thorium — extracted from monazite — to the Department of Atomic Energy.

#### *Related Steps taken*

- **Globally:**
  - The **Multilateral Minerals Security Partnership (MSP)** was announced in June 2022, with the goal of bringing together countries to build robust critical minerals supply chains needed for climate objectives.
  - Involved in this partnership are the United States (US), Canada, Australia, Republic of Korea, Japan, and various European countries.

- India is not included in the partnership.
- **By India:**
  - Ministry of Mines has amended Mines and Minerals (Development and Regulation) (MMDR) Act, 1957 through the **Mines and Minerals (Development and Regulation) Amendment Act, 2021** for giving boost to mineral production, improving ease of doing business in the country and increasing contribution of mineral production to Gross Domestic Product (GDP).
  - The amendment act provides that no mine will be reserved for particular end-use.

### Suggestions of CII

- Amid India's reliance on China for rare earth minerals imports, the **Confederation of Indian Industry (CII) has urged the government to encourage private mining in the sector and diversify supply sources.**
- Though India has **6% of the world's rare earth reserves**, it only produces 1% of global output, and meets most of its requirements of such minerals from China.
- In 2018-19, **for instance, 92% of rare earth metal imports by value and 97% by quantity were sourced from China.**
- CII suggested that an "**India Rare Earths Mission**" be set up manned by professionals, similar to the **India Semiconductor Mission**, as a critical component of the **Deep Ocean Mission.**
- The industry group has also mooted **making rare earth minerals a part of the 'Make In India' campaign**, citing China's 'Made in China 2025' initiative that focuses on new materials, including permanent magnets that are made using rare earth minerals.

### Looking ahead

- **India must take lessons from other advanced economies on how they are planning to secure their mineral needs** and attempt to join multinational fora on assuring critical mineral supply chains – or use existing partnerships, such as Quad and **BIMSTEC**, to foster such dialogues.
  - There must also be **top-level decision making within the government to strategize on how to create vertically integrated supply chains** of

green technologies manufacturing, or we may be in serious danger of missing out on our climate change mitigation targets.

- India needs to **create a new Department for Rare Earths (DRE)**, which would play the role of a regulator and enabler for businesses in this space.

## **Legality of Unilateral economic sanctions**

- **Office of the United Nations High Commissioner for Human Rights (OHCHR)** has said in its reports about **negative** impact of unilateral sanctions on **human rights**.
- Human Rights Watch Sanctions reports that **healthcare** sector of Iran has been negatively impacted by **US sanctions**.
  - It has impacted Iranians' **right to health** and **access to medicines** and medical care.
- Economic sanctions can destroy a country's central institutions, firms, lives and livelihoods.

### **Sanctions and its effects**

#### **Sanctions**

- Imposition of sanctions is a **first response** to force alleged wrongdoer to **change their behaviour**.
- Some Sanctions are trade sanctions like **barrier** of **financial** and **investment** flows between sender and receiver countries, **blockades**, **reprisals**, **embargoes** and **starvation** of enemy's population, etc.
- Examples:
  - US sanctioned countries are – Russia, North Korea, Cuba, Syria, Iran.
  - Human rights situation in **Xinjiang** and **Myanmar**;
  - Sanctions on **Iran** and **North Korea due to their nuclear programmes**
- Earlier, Sanctions were used during armed conflict and were **regulated** by **international legal instruments**.
- United States' law **Countering America's Adversaries through Sanctions Act, 2017** (CAATSA) places **economic sanctions** on third countries if they enter into significant transactions with some countries.

- Target countries are **Iran, North Korea and Russia**.

### ***Effects***

- Economic sanctions **promote** sufferings of **civilians** particularly **marginalised sections**.
  - It deprives them their **means of subsistence** and **livelihood**.
- **Advanced** economic countries **force weak** economic countries to **stop trade with target countries**.
  - It badly influences **independent foreign and trade policies** of that country.
  - It attacks **sovereignty** of a nation which is key norm of international law.
- Economic sanctions are **disincentives** for **foreign investors, international organisations** and **foreign companies**.
  - It prohibits them trade and commerce with target countries due to **threat of secondary sanctions** which can target them too.

### **Cases under which economic sanctions are allowed and its borderline**

- When target country breaches its obligations under **international law** and commits internationally **wrongful act**.
- Measures must only **aim** at **cessation** of wrongful act.
- Measures shall not be **punitive**.
- Measures must be **proportionate** and should be **terminated** once the wrongful act ceases.
- Measures shall **not** affect protection of **fundamental human rights**.
- Measures must **not violate** norms of international law.

### **International laws on economic sanctions**

- International norms that allow transit of **basic necessities** like food and medicines during **armed conflict** have achieved universal ratification.
- **Chapter VII** of the **United Nations Charter** allows imposition of sanctions.
  - These sanctions are in form of **collective action** taken under the United Nations Security Council to **force a country** to put an end to its actions which threaten or breach international peace and security.

- **UN Charter** does not recognise unilateral measures by any member state except **the right to self-defence** as **interim** measure.
- **Article 2(4)** of the **UN Charter** sanctions promotes **general principle of non-intervention** in other country's **sovereignty, territorial integrity** and **political independence**.
  - Under Article 2(4), there is **no general prohibition** on coercive **economic sanctions** under international law.
  - Sanctions do violate international law and attract international responsibility.
- **International Court of Justice (ICJ)** has jurisdiction over the economic sanctions imposed under domestic legislations.
  - They are not immune to judicial review of ICJ.

### **Economic sanctions violate international laws**

- **Article 2(3)** of the **UN Charter** imposes obligation upon members to resolve their disputes **peacefully**.
  - Sanctions are **not peaceful** settlement of disputes.
- Economic sanctions violate **Article 2(7)** of the **UN Charter**.
  - **Article 2(7)** prohibits **non-intervention** in internal affairs of a country.
- It violates human rights agreement under **International Covenant on Economic Social and Cultural Rights (ICESCR)** and **International Covenant on Civil and Political Rights (ICCPR)**.
  - **Article 1** of both states that -in **no** case a person should be **deprived** of its own means of **subsistence**.
- Economic sanctions are **inconsistent** with WTO (**World Trade Organisation**) laws.

### **Sanctions on some countries were wrong under international laws**

- **Iran** and **North Korea** have not committed any wrong act.
  - **International Court of Justice** in its **nuclear weapons Advisory Opinion** stated that proliferation of **nuclear weapons** and its use is **not unlawful**.
  - **Nuclear Non-Proliferation Treaty** allows withdrawal under **Article X** on grounds of "**protection of supreme interests of a country**".
  - Sanctions imposed by **US** on **Iran** to counter its nuclear programme did not give positive outcome.



- **Cuba** was wrongfully sanctioned due to its **dictatorship** regime.
  - **Cuban Democracy Act of 1992** states that purpose of sanctions on Cuba is to force them towards **democratisation**.
  - International law cannot impose legal obligation on a country to follow a specific model of **governance**.
  - **UNGA resolution of 2018** condemned **US** sanctions on **Cuba based on the premises that** unilateral sanctions **violates** international **obligations** under UN Charter.

Sanctions can become **weapons of mass destruction** and ignoring it can shake the **foundation** of a country. A proper **checks and balances** in form of **judicial scrutiny** is desirable.

### **A Climate Resilient Panchayat**

- If India has to achieve the set of goals enunciated in the 'Panchamrit' resolution of the COP26 climate summit in Glasgow 2021, it is necessary that Panchayati raj institutions, the third tier of government which are closest to the people are involved.
- **Major impact on rural areas:** The greater variability in rainfall and temperatures, etc. experienced of late has directly affected the livelihood and well-being of millions of rural households.
- **PRI excluded from National action plan:** India's National Action Plan on Climate Change 2008 identifies a range of priority areas for coordinated intervention at the national and State levels. However, there would have been better results had Panchayati raj institutions been given a greater role.
- **Decentralization of climate efforts are necessary:** Through the ongoing decentralization process which ensures people's participation, panchayats can play a crucial and frontline role in coordinating effective responses to climate risks, enabling adaptation and building climate-change resilient communities.

**Efforts of Panchayat raj institutes to fight climate change: Case study of Meenangadi**

- **Carbon neutral Meenangadi:** In 2016, the panchayat envisaged a project called 'Carbon neutral Meenangadi', the aim being to transform Meenangadi into a state of carbon neutrality. There were campaigns, classes and studies to begin with. An awareness programme was conducted initially. A greenhouse gases emission inventory was also prepared. The panchayat was found to be carbon positive.
- **Implementation of Multi-sectoral schemes:** An action plan was prepared by organising gram Sabha meetings. Socio-economic surveys and energy-use mapping were also carried out. Several multi sector schemes were implemented to reduce emissions, increase carbon sequestration, and preserve the ecology and bio-diversity.
- **Tree plantation Initiative:** 'Tree banking' was one of landmark schemes introduced to aid carbon neutral activities which encouraged the planting of more trees by extending interest-free loans. Interestingly 1,58,816 trees were planted which have also been geo-tagged to monitor their growth.
- **People's participation:** The entire community was involved in the process, with school students, youth, and technical and academic institutions given different assignments. Five years have passed and the changes are visible. Local economic development was another thrust area where LED bulb manufacturing and related micro-enterprises were initiated.
- **SDG theme:** The Ministry of Panchayati Raj has focused its attention on localising the Sustainable Development Goals (SDGs) on a thematic basis.
- **Various activities delegated to PRI:** 'Clean and Green Village' has been identified as the fifth theme where panchayats can take up activities on natural resource management, biodiversity protection, waste management and afforestation activities.
- **Documentation of best practices:** According to the latest data, 1,09,135-gram panchayats have prioritised 'Clean & Green Village' as one of their focus areas for 2022-23. The Ministry has highlighted the need for the documentation of best practices and for wider dissemination.
- **Integrated panchayat development plan:** The net result is that many panchayats are coming forward with their eco plans. The integrated Panchayat Development Plan prepared by all panchayats is a stepping stone towards addressing many of the environmental concerns of villages.

### **Summing up**

- In today's age of rapid technological advancements and digital transformation, India's rural local bodies are silently contributing their strength to ensuring the global target of carbon neutrality, as envisaged in the UN conference on climate change.

