

# Monthly IQ

A Comprehensive Current Affairs Magazine for  
UPSC CSE Exam

**July 2023**

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## INDIAN POLITY

### CRITICAL EVALUATION OF THE NATIONAL GREEN TRIBUNAL

#### CONTEXT

The National Green Tribunal (NGT) received 15,132 new cases and disposed of 16,042 cases from July 2018 to July 2023.

#### ABOUT THE NATIONAL GREEN TRIBUNAL (NGT)

<b>Establishment</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> NGT was established in 2010 under the <b>National Green Tribunal Act, 2010</b> as a specialized judicial body for adjudicating environmental cases in the country.</li> <li><input type="checkbox"/> It was formed by replacing the <b>National Environment Appellate Authority</b>.</li> <li><input type="checkbox"/> India is the <b>third country in the world</b> after Australia and New Zealand, to setup a specialized environmental tribunal and also the first developing country to do so.</li> </ul>
<b>Inspiration from Article 21</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> NGT also draws inspiration from <b>Article 21 of the India Constitution</b> which assures to provide a healthy environment to the citizens of India.</li> <li><input type="checkbox"/> <b>Article 21 (Protection of Life and Personal Liberty):</b> No person shall be deprived of his life or personal liberty except according to procedure established by law.             <ul style="list-style-type: none"> <li>– This fundamental right is available to <b>every person, citizens and foreigners alike</b>.</li> <li>– The right to life and personal liberty has been interpreted widely to include the <b>right to livelihood, health, education, environment</b> and all those matters that contributed to life with dignity.</li> </ul> </li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Effective and expeditious disposal of cases</b> that are related to the protection and conservation of the environment, forests, and other natural resources.</li> <li><input type="checkbox"/> To give <b>relief and compensations</b> for any damages caused to persons and properties.</li> <li><input type="checkbox"/> To handle various <b>environmental disputes</b> that involve <b>multi-disciplinary issues</b>.</li> </ul>
<b>Composition of NGT</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> The Tribunal is headed by the <b>Chairperson</b> who sits in the Principal Bench and has at least ten but not more than twenty judicial members and <b>at least ten but not more than twenty expert members</b>.</li> <li><input type="checkbox"/> All these members are required to hold the office for <b>five years</b> and are <b>not eligible for reappointment</b>.</li> <li><input type="checkbox"/> The Chairperson of the National Green Tribunal (NGT) is appointed by the <b>Central Government</b> of India in accordance with the Chief Justice of India.</li> <li><input type="checkbox"/> A <b>Selection Committee</b> is formed by the central government of India for the appointment of Judicial Members and Expert Members</li> </ul>
<b>Structure</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> The Tribunal has a presence in <b>five zones- North, Central, East, South and West</b>. The Principal Bench is situated in the North Zone, <b>headquartered in Delhi</b>.</li> <li><input type="checkbox"/> The Central zone bench is situated in <b>Bhopal</b>, East zone in <b>Kolkata</b>, South zone in <b>Chennai</b> and West zone in <b>Pune</b>.</li> </ul>
<b>Powers and Jurisdiction</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Adjudicatory Powers:</b> The NGT has the power to hear and adjudicate cases related to environmental disputes, including those related to air and water pollution, environmental clearances, biodiversity conservation, and forest conservation.</li> <li><input type="checkbox"/> <b>Enforcement Powers:</b> The NGT has the power to enforce its orders and decisions, and it can issue directions and take actions against individuals or entities that violate environmental laws or cause environmental damage.</li> <li><input type="checkbox"/> <b>Regulatory Powers:</b> The NGT has the power to regulate activities that have an impact on the environment, including industries, mining, and construction projects.</li> <li><input type="checkbox"/> <b>Review and Appeals:</b> The NGT has the power to review its own decisions, and its decisions can also be appealed in the Supreme Court of India.</li> <li><input type="checkbox"/> <b>Expertise:</b> The NGT has the power to seek the assistance of experts in various fields, including environmental science, to help it make informed decisions.</li> <li><input type="checkbox"/> <b>Civil and Criminal Jurisdiction:</b> The NGT has both civil and criminal jurisdiction, and it can impose fines and penalties on those found guilty of environmental offenses.</li> <li><input type="checkbox"/> The <b>decisions of the Tribunal are binding</b> and the Tribunal's orders are enforceable as the powers vested are the same as in a <b>civil court under the Code of Civil Procedure, 1908</b>.</li> </ul>

## SUCCESS OF NATIONAL GREEN TRIBUNAL

- Since its inception, the NGT has, apart from creating a **new breed of legal practitioners**, protected vast acres of **forest land**, halted **polluting construction** activities in metros and smaller towns.
- It has taken **strict action against negligent officials** who have neglected their duty to enforce laws and held accountable major corporate entities.
- It has safeguarded the rights of indigenous communities and ensured the full implementation of the "**polluter pays**" principle.
- Important Orders Given by NGT:**
  - **Ban on 10-year-old diesel vehicles:** In 2015, the NGT banned all diesel vehicles over 10 years old in Delhi to address the issue of air pollution.
  - **Closure of industries around Bellandur Lake:** In 2018, the NGT ordered the closure of industries around Bellandur Lake in Bangalore, citing pollution of the lake and violation of environmental laws.
  - **Closure of Sterlite copper plant:** In 2018, the NGT upheld the Tamil Nadu Pollution Control Board's order to close the Sterlite copper plant in Thoothukudi, citing pollution and violation of environmental norms.
  - **Compensation for victims of oil spills:** In 2019, the NGT ordered a compensation of Rs. 25 crores to be paid to victims of an oil spill in Tamil Nadu, caused by a collision between two ships.
- Some Important Judgements by NGT:**
  - **Goa mining case:** In this case, the NGT ordered a ban on mining activities in Goa, citing violation of environmental laws and damage to the local ecology.
  - **Ganga pollution case:** In this case, the NGT directed the Central Pollution Control Board and the state pollution control boards to take immediate steps to control pollution in the river Ganga.
  - **Vizhinjam International Seaport Limited case:** In this case, the NGT directed the Vizhinjam International Seaport Limited in Kerala to obtain all necessary environmental clearances before proceeding with the construction of a new port.

## CRITICISM OF NATIONAL GREEN TRIBUNAL

- Delay in Justice:** Despite being established to expedite the disposal of cases related to the environment, the NGT has faced criticism for delays in delivering judgments. The backlog of cases has been piling up, and it takes years for the tribunal to resolve them.
- Lack of Independence:** Some critics argue that the NGT lacks independence from the government, which undermines its effectiveness as an independent judicial body. The tribunal is headed by a chairman, who is appointed by the central government, and there have been allegations of political interference in the appointment of NGT members.
- Limited Scope:** The NGT's jurisdiction is limited to certain environmental issues, and it cannot address broader issues related to development and sustainability. This limitation has been criticized for hindering the NGT's effectiveness in protecting the environment.
- Inadequate Infrastructure:** The NGT has faced criticism for inadequate infrastructure, including lack of proper courtrooms, staff, and resources. This has resulted in delays and poor functioning of the tribunal.
- Limited Reach:** The NGT's reach is limited to only a few major cities in India, which means that people in rural areas may not have access to the tribunal. This limits the NGT's effectiveness in protecting the environment across the country.

## WAY FORWARD

- Expansion of Regional Benches:** The NGT should considerably increase the number of regional benches, preferably located in areas with abundant forest cover or significant mineral deposits.
- System of Larger Bench in NGT:** Provision for appeals against NGT orders should be made before a larger bench of the Tribunal, prior to approaching the Supreme Court or High Court.
- Addressing Administrative Inadequacy:** Immediate action is required to fill the vacancies in the NGT, ensuring efficient functioning of the tribunal.
- Collaborative Approach:** The central and state governments should foster a collaborative approach with the NGT, striking a balance between environmental concerns and economic considerations.

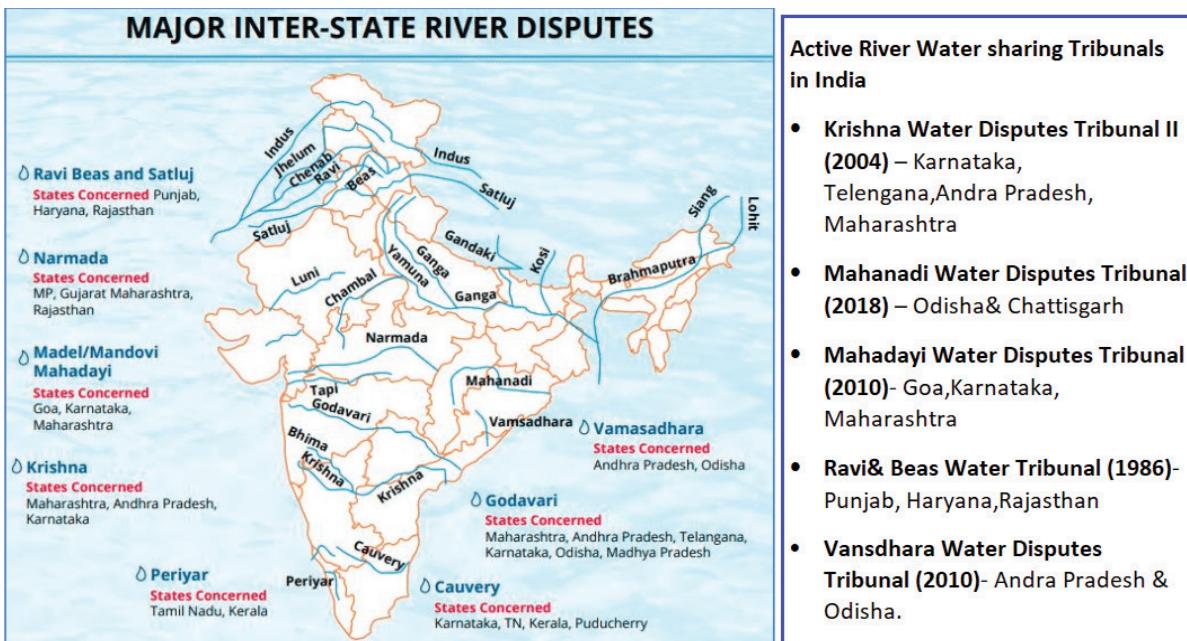
## INTER-STATE WATER DISPUTES IN INDIA

### CONTEXT

Karnataka State government said that it is ready to resolve **river water-sharing disputes** between neighbouring States through mutual dialogue rather than intervention of the tribunals/courts.

### INTRODUCTION

- The Inter-State River Water Disputes are one of the **most contentious issues in Indian federalism today**.
- There have been **several inter-state river water disputes** in India. Most of these disputes arise because of lack of adequate water resources for farmers in the states.
- What makes such disputes complicated is the fact that **water resources are under the State List**, while the **Parliament has the power to make laws** regarding **inter-state rivers** under the Union List.



### REASONS FOR THE EXISTENCE OF SEVERAL INTER-STATE RIVER WATER DISPUTES IN INDIA

- **Water Scarcity:** India is a water-stressed country with uneven distribution of water resources. As a result, states with limited water resources often engage in disputes to secure their fair share.
  - For example, the states of **Karnataka and Tamil Nadu** have been involved in a long-standing dispute over the sharing of **Cauvery River** water due to water scarcity in the region.
- **Competing Water Demands:** Different states have competing demands for water, including agricultural irrigation, and industrial use, leading to conflicts as states vie for their respective requirements.
  - For instance, the **Krishna River dispute** between Karnataka and Andhra Pradesh is centered around the allocation of water for irrigation and drinking purposes.
- **Historical Agreements and Treaties:** Many inter-state water disputes have their roots in historical agreements and treaties that were formulated during the colonial period or post-independence.
  - An example is the **Ravi-Beas river dispute** between Punjab and Haryana, which arose due to the construction of dams and canals after the reorganization of states in 1966.
- **Infrastructure Development:** The construction of dams, barrages, and irrigation projects on rivers can impact the flow of water downstream, leading to disputes over water allocation.
  - **Mahanadi River dispute** between Odisha and Chhattisgarh is an example where the construction of dams by Chhattisgarh has resulted in reduced water flow to Odisha.

- Political Considerations:** Water disputes in India are often influenced by political factors, including regional aspirations, electoral considerations, and states' perception of their rights over water resources.
- **The sharing of Krishna River water between Karnataka and Maharashtra** has witnessed political considerations and protests from various stakeholders.

### MECHANISM FOR INTER-STATE RIVER WATER DISPUTES RESOLUTION

<b>Constitutional provisions</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Entry 17 of State List:</b> deals with water i.e., water supply, irrigation, canal, drainage, embankments, and water storage and water power.</li> <li><input type="checkbox"/> <b>Entry 56 of Union List:</b> empowers the <b>Union Government</b> for the regulation and development of <b>inter-state rivers and river valleys</b>.</li> <li><input type="checkbox"/> <b>Article 262:</b> <ul style="list-style-type: none"> <li>- Parliament may <b>by law</b> provide for the adjudication of any dispute or complaint with respect to the use, <b>distribution or control of the waters of, or in, any inter-State river or river valley</b>.</li> <li>- Parliament may, by law, provide that <b>neither the Supreme Court nor any other court</b> shall exercise jurisdiction in respect of any such dispute or complaint as mentioned above.</li> </ul> </li> </ul>
<b>Laws enacted by the parliament under Article 262</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>River Board Act, 1956:</b> <ul style="list-style-type: none"> <li>- <b>Purpose:</b> To enable the Union Government to create Boards for <b>Interstate Rivers and river valleys in consultation with State Governments</b>.</li> <li>- The objective of Boards is to advise on the inter-state basin to prepare development schemes and to <b>prevent the emergence of conflicts</b>.</li> <li>- Till date, <b>no river board</b> as per above Act <b>has been created</b>.</li> </ul> </li> <li><input type="checkbox"/> <b>Inter-State Water Dispute Act, 1956:</b> <ul style="list-style-type: none"> <li>- When a State Government makes a request regarding a water dispute and the Central Government is of the opinion that it <b>cannot be resolved by negotiation</b>, a <b>Water Disputes Tribunal</b> is constituted to adjudicate the dispute.</li> <li>- The act was <b>amended in 2002</b>, to include the major recommendations of the <b>Sarkaria Commission</b>. The amendments mandated a <b>one-year time frame to setup</b> the water disputes tribunal and also a <b>3-year time frame to give a decision</b>.</li> </ul> </li> </ul>

### ABOUT INTER-STATE RIVER WATER DISPUTE TRIBUNALS

- Inter-state river water tribunals are **quasi-judicial bodies** established by the Indian government, constituted under the **Interstate River Water Disputes Act, 1956**.
- The primary purpose of these tribunals is to **adjudicate and provide a binding decision** on the allocation of water resources among the disputing states.
- Composition:** The Tribunal shall consist of a **Chairman** and **two other members** nominated in this behalf by the **Chief Justice of India** from among persons who at the time of such nomination are **Judges of the Supreme Court or of a High Court**.
  - The **Central Government** may, in consultation with the Tribunal, appoint **two or more persons** as assessors to advise the Tribunal in the proceedings before it.
- Dispute redressal mechanism:**
  - Once a dispute is referred to a tribunal, it conducts **hearings, examines evidence**, receives representations from the disputing states, and seeks expert opinions to arrive at a decision.
  - The tribunal's decision, known as an **award, is final and binding** on all parties involved. The award is published in the Gazette of India and is enforceable under the law.
  - However, the decisions of these tribunals can be challenged in the Supreme Court of India through a **Special Leave Petition under Article 136 of the Constitution**.
  - Additionally, the Supreme Court can also intervene if there are issues related to the **violation of fundamental rights**.

## ISSUES AND CHALLENGES ASSOCIATED WITH INTERSTATE WATER DISPUTE TRIBUNALS

- Protracted Proceedings and Delays:** One of the primary concerns with these tribunals is the prolonged duration of the dispute resolution process. Cases can often take several years, or even decades, to reach a final resolution. This delay hampers timely decision-making and exacerbates the disputes, as parties involved are left waiting for a resolution.
- Opacity in Institutional Framework:** The lack of transparency and clear guidelines governing the proceedings of these tribunals is a significant issue. The lack of clarity in the institutional framework and guidelines leads to confusion and ambiguity in the dispute resolution process.
- Limited Multidisciplinary Composition:** The composition of these tribunals typically consists only of members from the judiciary. The absence of experts from other relevant fields, such as hydrology, engineering, and environmental science, limits the ability of the tribunals to comprehensively address technical aspects related to water allocation and management.
- Lack of Authoritative Water Data:** The absence of a standardized and authoritative data set makes it difficult to establish a baseline for water allocation and leads to disputes over water availability and utilization.
- Shift from Deliberative to Adversarial Approach:** There has been a shift in the approach of these tribunals from a deliberative process to an adversarial one. This shift has led to increased litigation and politicization of water-sharing disputes.
- Nexus Between Water and Politics:** Water disputes have increasingly become entangled in political considerations, leading to vote bank politics and further complicating the resolution process.

## ANTI-DEFECTION LAW

### CONTEXT

Once again, as Maharashtra grapples with another political crisis, the application of the Anti-defection law on rebel MLAs has come into the spotlight.

### ABOUT THE ANTI-DEFECTION LAW

- The Anti-Defection Law in India refers to a **set of constitutional provisions** enacted to **prevent political defections** by elected representatives.
- The law aims to maintain **stability in the democratic system** by discouraging elected officials from switching parties after being elected.
- It was first introduced through the **52nd Amendment Act of 1985** and is enshrined in the **Tenth Schedule of the Indian Constitution**.

### WHAT IS 'DEFECTION'?

- The term 'Defection' has been derived from a **Latin word 'Defectio'** which means to abandon a position or association, often to join an opposing group.
- Defection covers the **change of party affiliation** both from the opposition to the government side or vice versa as also change as between the parties on the side of the house.
- Traditionally this phenomenon was known as '**floor crossing**' which had its roots in **the British House of Commons**, where the legislator could change his allegiance when he crossed the floor and moved from the side of the government to the side of the opposition or vice-versa as the case may be.

### HISTORY BEHIND THE ANTI-DEFECTION LAW

- The phenomenon of defection despite the fact that it was acute became apparent after the **fourth general election in 1967**.
- Up to 1967 the cases of defection were 400 which subsequently rose to a figure of **500 odd cases of defection**, in which 118 were by the Ministers or Ministers of State.
  - **Aaya Ram Gaya Ram** was a phrase that became popular in Indian politics after a **Haryana MLA** Gaya Lal changed his party thrice within the same day in 1967.
- Therefore, in 1967, a **committee was formed to deal** with the issue of defection. There were several recommendations made by the committee on defection.
- Those recommendations were considered and were introduced in the form of a **bill in 1973** that was later **passed as Anti Defection law in 1985**.

## KEY PROVISIONS UNDER THE ANTI-DEFECITION LAW

The Anti-Defection Law (or the Tenth Schedule) includes the following provisions with regard to the **disqualification of MPs and MLAs on the grounds of defection:**

<b>Grounds for disqualification</b>	<input type="checkbox"/> <b>If a member of a house belonging to a political party:</b> <ul style="list-style-type: none"> <li>- Voluntarily gives up the membership and affiliation to a political party or</li> <li>- If he votes or abstains from voting in the House, contrary to any direction issued by his political party.</li> </ul> <input type="checkbox"/> However, if the member has taken prior permission on the particular issue, or is condoned by the party within 15 days from such voting or abstention, the member shall not be disqualified.
<b>Power to disqualify</b>	<input type="checkbox"/> <b>The Chairman or the Speaker</b> of the House has been conferred with the power to take the decision to disqualify a member, and his/her decision is final. <input type="checkbox"/> If a complaint is made with respect to the <b>defection of the Chairman or the Speaker</b> , a member of the house elected by that House shall have the right to take the decision. <input type="checkbox"/> All proceedings in relation to disqualification under this Schedule are considered to be <b>proceedings in Parliament or the Legislature</b> of a state as is the case. <input type="checkbox"/> Any question regarding disqualification arising out of defection is to be decided by the presiding officer of the House. <input type="checkbox"/> However, there is <b>no time limit</b> as per the law within which the Presiding Officers should decide on a plea for disqualification.
<b>Exceptions under the Anti Defection Law</b>	<input type="checkbox"/> <b>Merger:</b> In the situation where <b>two-thirds of the legislators</b> of a political party decide to merge into another party, neither the members who decide to join nor the ones who stay with the original party will face disqualification. <input type="checkbox"/> <b>Split:</b> Earlier, the law allowed parties to be split, but <b>at present, this has been outlawed.</b> <ul style="list-style-type: none"> <li>- If at least one-third of the members of a legislative party decide to form a separate group, it is <b>considered a split.</b></li> </ul> <input type="checkbox"/> Any person elected as <b>chairman or speaker can resign from his party</b> , and rejoin the party if he demits that post.
<b>Scope for Judicial Review</b>	<input type="checkbox"/> <b>Originally</b> , the Act provided that the presiding officer's decision was final and <b>could not be questioned</b> in any court of law. <input type="checkbox"/> But, in the <b>Kihoto Hollohan case (1992)</b> , the Supreme Court declared this provision as <b>unconstitutional</b> . <input type="checkbox"/> The court held that while deciding a question under the 10th Schedule, the presiding officer should <b>function as a tribunal</b> . Hence, his/her decision (like that of any other tribunal) was <b>subject to judicial review</b> on the grounds of malafides, perversity, etc.

## ADVANTAGES OF ANTI-DEFECITION LAW

- Prevents Political Instability:** Defections can lead to political instability, as governments may lose their majority and struggle to function effectively. The Anti-Defection Law prevents such situations by discouraging elected representatives from defecting or switching parties.
- Upholds Party Discipline:** The law encourages party discipline among elected representatives. It emphasizes that elected members should adhere to the policies, principles, and ideologies of their respective political parties.
- Safeguards Public Mandate:** The Anti-Defection Law protects the interests of the electorate by ensuring that the elected representatives do not betray the trust of voters. When citizens vote for a candidate, they do so based on the party's agenda and the promises made during elections.

## DISADVANTAGES OF ANTI-DEFECITION LAW

- Limited Freedom of Speech:** Members being forced to obey party whips restricts their freedom of expression and goes against the principle of representative democracy.
- Reduced Accountability:** By preventing parliamentarians from changing their allegiance or voicing dissent, the law limits their ability to hold the government accountable for its actions.

- Potential Misuse:** There is a risk of the Anti-Defection Law being misused by political parties or leaders for their own advantage. They may use the threat of disqualification or other punitive measures to suppress dissent within their party or to force compliance with party decisions, even if they are against the best interests of the public or the elected representatives.
- Other challenges with the Anti-defection Law:**
  - **Time Limit for Presiding Officer:** The lack of a specified time-period for the Presiding Officer to decide on a disqualification plea leads to unnecessary delays, allowing defected members to continue in their positions while still being part of their original parties.
  - **Ambiguous Nature of Split:** The ambiguity arises when MLAs defect in small groups to join the ruling party, and it is unclear whether they will face disqualification if the Presiding Officer's decision is made after a significant number of opposition members have already defected.
  - **Defecting to party forming Government after election:** Winning candidates resigning from their elected party immediately after election results and joining the party that forms the government raises concerns of fraud and goes against the democratic spirit.
  - **Power to the Speaker:** Granting the Speaker the power to make decisions on disqualification raises criticism regarding their legal knowledge and expertise to handle such cases impartially.
  - **Problem with merger provision:** The provision focuses on the number of members involved in a merger rather than the underlying reasons for defection, potentially allowing for opportunistic and questionable mergers to escape disqualification.

## RECOMMENDATIONS BY VARIOUS COMMITTEES

Dinesh Goswami Committee on Electoral Reforms (1990)	<input type="checkbox"/> Disqualification should be limited to cases where a member voluntarily gives up party membership or votes against party whip in a motion of confidence or no-confidence. <input type="checkbox"/> The President/Governor, on the advice of the Election Commission, should decide on disqualification cases.
Law Commission (170th Report, 1999)	<input type="checkbox"/> Provisions exempting splits and mergers from disqualification should be deleted. <input type="checkbox"/> Pre-poll electoral fronts should be treated as political parties under the anti-defection law. <input type="checkbox"/> Political parties should limit the issuance of whips to instances where the government is in danger.
Election Commission	Decisions under the Tenth Schedule (Anti-Defection Law) should be made by the President/Governor, based on the binding advice of the Election Commission.
Constitution Review Commission (2002)	<input type="checkbox"/> Defectors should be prohibited from holding public office or any remunerative political post for the remaining term. <input type="checkbox"/> Votes cast by defectors to topple a government should be treated as invalid.

## CORPORATE SOCIAL RESPONSIBILITY IN INDIA

### CONTEXT

The Ministry of Corporate Affairs (MCA) has flagged the limited impact of corporate social responsibility (CSR) initiatives despite a spike in such spending in recent years, and called on India Inc to adopt a long-term approach "to yield productive results".

### WHAT IS CORPORATE SOCIAL RESPONSIBILITY (CSR)?

- According to the **United Nations Industrial Development Organisation**, CSR is a **concept of management** "whereby companies integrate **social and environmental concerns** in their business operations and interactions with their stakeholders."
- Corporate social responsibility enables **businesses to participate** in a variety of **socially responsible initiatives**.
- The idea of CSR operates on the **principle of 'quid pro quo'** – something in exchange for something. Companies are morally obligated to contribute back to society since they **rely on societal assets to operate efficiently**.

### TYPES OF CORPORATE SOCIAL RESPONSIBILITY

Among numerous types of corporate social responsibility, there are four major types of corporate social responsibility –

<b>01</b>	<b>Environmental Corporate Social Responsibility:</b> Businesses focus on minimizing their negative environmental impact through sustainable practices, such as adopting eco-friendly equipment and promoting the use of renewable energy sources.
<b>02</b>	<b>Human Resource Corporate Social Responsibility:</b> Businesses prioritize the well-being and personal growth of their employees by implementing fair labor practices, offering competitive compensation, and providing supportive policies like maternity and paternity leave.
<b>03</b>	<b>Community Welfare Corporate Social Responsibility:</b> Companies collaborate with non-profit organizations to support initiatives aimed at improving the socio-economic status of communities, providing funding and contributing to the overall well-being of the society.
<b>04</b>	<b>Philanthropic Corporate Social Responsibility:</b> Corporations engage in philanthropic activities by providing financial assistance directly or through partnerships with charitable organizations, aiming to uplift individuals and communities and improve their quality of life.

## POSITIVE AND NEGATIVE IMPACTS OF CORPORATE SOCIAL RESPONSIBILITY (CSR)

Positive Impacts of CSR	Negative Impacts of CSR
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Enhanced Reputation and Brand Value:</b> CSR improves a company's reputation, enhances its brand value, and builds trust among customers.</li> <li><input type="checkbox"/> <b>Improved Customer Relations:</b> CSR initiatives attract socially conscious consumers, leading to increased customer satisfaction, loyalty, and an expanded consumer network.</li> <li><input type="checkbox"/> <b>Increased Employee Engagement and Retention:</b> CSR activities create a sense of purpose, leading to higher employee engagement, job satisfaction, and better employee retention.</li> <li><input type="checkbox"/> <b>Positive Impact on Communities and Society:</b> CSR programs address societal issues and contribute to the well-being of communities, making a positive impact on society.</li> <li><input type="checkbox"/> <b>Regulatory Compliance and Risk Management:</b> CSR helps companies comply with regulations, mitigate risks, and avoid reputational damage and legal issues.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Increased administrative burden and enforcement fees:</b> Small companies may struggle to afford the expenses associated with CSR compliance, leading to financial burdens and potential enforcement fees.</li> <li><input type="checkbox"/> <b>Conflicts between different business goals:</b> Balancing profit goals with CSR objectives can create challenges and potential disagreements among stakeholders, impacting decision-making processes.</li> <li><input type="checkbox"/> <b>The 'greenwashing' impact:</b> Consumers are increasingly wary of companies engaging in superficial or deceptive CSR practices, which can damage a company's reputation and result in negative public perception.</li> <li><input type="checkbox"/> <b>Disadvantage over competitors:</b> CSR implementation can lead to increased operational costs, resulting in higher product prices that may deter customers who seek more affordable alternatives from non-CSR-focused competitors.</li> </ul>

## OVERVIEW OF CORPORATE SOCIAL RESPONSIBILITY IN INDIA

- Corporate social responsibility has been a part of the Indian societal structure since its inception.
- It is an extremely old concept. **Monarchs, landowners, and businesses** all embraced the idea of being socially responsible in the ancient period, and they placed a high emphasis on it. The saying "**The more you give, the more you receive**" is recognized by everyone.
- In contrast to other nations that merely provide guidelines and recommendations, **India has a statutory obligation** on corporate social responsibility spending.
  - **The Companies Act, 2013** incorporates the idea of corporate social responsibility into Section 135.
  - Additionally, **Schedule VII of the Companies Act, 2013** lists a broad range of tasks that firms in the country may carry out.

## HISTORY OF CORPORATE SOCIAL RESPONSIBILITY IN INDIA

- The first phase of corporate social responsibility (1850 to 1914):**
  - Corporate social responsibility in India during this period focused on **philanthropy and charitable contributions**.
  - Businessmen built institutions, colleges, public facilities, and religious establishments for the **betterment of local communities**.
  - Contributions were made from **personal funds** rather than from company resources, unrelated to the functioning of the company.
- The second phase of corporate social responsibility (1910 to 1960):**
  - **Mahatma Gandhi's trusteeship philosophy** shaped corporate social responsibility, emphasizing social development and considering businesses as "temples of modern India."

- Businessmen created trusts for universities, research centers, and participated in **social reform movements** like women's emancipation and untouchability abolition.
- **Corporate leaders supported Gandhi's initiatives** through their trusts, promoting social welfare and socioeconomic development.

**The Third Phase of corporate social responsibility (1950 to 1990):**

- The **establishment of public sector undertakings** reduced private industry's contribution to socioeconomic development.
- Corporate social responsibility focused on **labor laws and environmental legislation**, ensuring fair wealth distribution and social accountability.
- Corporate social responsibility **involved legal controls on company operations** and support for community engagement, with owners, management, and stakeholders taking responsibility.

**The fourth phase of corporate social responsibility (1980 onwards):**

- Post-1980, economic reforms in India led to **significant growth** and provided opportunities for corporate social responsibility.
- **Growing profitability** and success empowered companies to contribute more towards social causes.
- India's emergence as a global economic player enhanced corporate social responsibility strategies through **integration into the global supply chain** and adherence to international norms.

### **THE MINISTRY OF CORPORATE AFFAIRS (MCA)'S FINDINGS ON CSR**

- Total spending in FY21:** According to the MCA, CSR spending stood at Rs 26,210 crore in FY21, a growth of 80% since FY16. However, the impact of these funds is not widely felt, and there is a need to enhance their visibility and effectiveness.
- Top receiving sectors:** Education, healthcare, and rural development have remained the top receivers of the CSR funds.
- Regional disparity:** The MCA has also expressed concerns over wide regional disparity in the deployment of the CSR funds and called on companies to balance their area preference with national priorities.
  - **Just ten states**--including industrial ones such as Maharashtra, Gujarat, Karnataka and Andhra Pradesh--grabbed over 44% of the CSR funds in FY21, while the **eight north-eastern ones** received a mere 0.91%.
- Self-sustenance:** The MCA has also highlighted the need to ensure the initiatives undertaken become self-sustaining so that the CSR programmes can run seamlessly without being a burden on the companies themselves.

### **WHAT ARE THE ISSUES PERTAINING TO CSR COMPLIANCE?**

- Lack of community participation:** Limited enthusiasm and support from the local community for engaging in and supporting CSR activities due to communication gaps between stakeholders.
- Partner selection challenges:** Difficulty in finding long-term impactful, scalable, and self-sustaining partners and projects for CSR initiatives.
- Transparency concerns:** Companies highlight a lack of transparency from local implementing agencies regarding program information, audit issues, impact assessments, and budget utilization.
- Limited availability of well-organized NGOs:** Challenges in identifying and collaborating with well-organized NGOs in remote and rural areas to assess community needs and ensure successful CSR implementation.

## **ELECTORAL BONDS**

### **CONTEXT**

According to a report by the Association of Democratic Reforms (ADR), electoral bonds were the chief source of donations for political parties between 2016-17 and 2021-22.

### **KEY HIGHLIGHTS OF THE ADR'S REPORT**

- Between 2016-17 and 2021-22**, seven national and 24 regional parties received a **total donation of ₹16,437.63 crore**.
- Out of the total donations, **55.9% was from the electoral bonds**, 28.07% was received from the corporate sector and 16.03% from other sources.
- For national parties**, there was a **743% increase** in donations from **electoral bonds** between 2017-18 and 2021-22, while **corporate donations rose only 48%**.

- The total donations declared by the BJP** is more than three times the total donations declared by all other national parties, the report said.
- More than **52% of the BJP's** total donations came from electoral bonds worth ₹5,271.97 crore. The **Congress** declared the second highest donations from bonds of ₹952.29 crore (61.54% of its total donations) followed by the **Trinamool Congress** that got ₹767.88 crore (93.27%).

### **WHAT ARE ELECTORAL BONDS?**

- Electoral Bonds are like **Promissory Notes** which can be purchased by any **individual** who is an Indian Citizen or a **body corporate** which is **established or incorporated in India**.
- The Individual or the body corporate can donate the purchased Electoral Bond **to any eligible political party of his or her choice**.
- The Concept of the electoral bond was introduced with the **Finance Bill, 2017**. Later, in **2018**, the NDA government notified the **Electoral Bond Scheme** To alternate cash donations and to ensure **transparency in political funding**.

### **KEY FEATURES OF THE ELECTORAL BOND SCHEME 2018**

- Donor eligibility:** Electoral Bonds may be purchased by a person, who is a citizen of India or incorporated or established in India. A person being an individual can buy Electoral Bonds, either singly or jointly with other individuals.
  - Every Donor has to provide his/her **KYC details** to the respective to purchase the Electoral Bonds while the Donor's name would be kept confidential.
- Receiver eligibility:** Only the Political Parties registered under **Section 29A of the Representation of the People Act, 1951** and which secured not less than one per cent of the votes polled in the last General Election to the House of the People or the Legislative Assembly of the State, shall be eligible to receive the Electoral Bonds.
- Authorized bank:** The Electoral Bonds shall be encashed by an eligible Political Party only through a Bank account with the Authorized Bank.
  - **State Bank of India (SBI)** has been authorized to issue and encash Electoral Bonds through its 29 Authorized Branches (as per list enclosed) in the month of May 2019.
  - The bonds are issued by SBI in denominations of **Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh and Rs 1 crore**.
- Validity:** The Electoral Bonds shall be valid for **fifteen calendar days** from the date of issue. And, the Electoral Bond deposited by an eligible Political Party in its account shall be credited **on the same day**.

### **SIGNIFICANCE OF ELECTORAL BONDS**

- Enhanced Transparency:** Electoral bonds promote greater transparency by requiring political parties to engage with the election commission, regulatory authorities, and the general public in a more open and accountable manner.
- Discouragement of Cash Transactions:** Electoral bonds can only be purchased through a limited number of designated banks using cheques or digital payments. This discourages the use of cash in political funding.
- Preservation of Donor Anonymity:** Electoral bonds allow individuals, groups, NGOs, religious organizations, and other trusts to donate without revealing their personal details. Consequently, the identity of the donor remains confidential.
- Accountability Assurance:** Donations made through electoral bonds are exclusively credited to the party's disclosed bank account registered with the Election Commission of India (ECI). As all donations are processed through banking channels, political parties are obligated to provide explanations regarding the utilization of the entire donation amount.

### **CONCERN WITH ELECTORAL BONDS**

- Limiting Transparency:** Electoral bonds hinder the voters' ability to know which individuals, companies, or organizations have funded political parties and to what extent. This change infringes upon the citizens' "Right to Know" and reduces the accountability of the political class, as parties are no longer required to disclose all their donors.
- Limited Anonymity:** The anonymity provided by electoral bonds is shallow, as the government can access donor details by demanding data from the State Bank of India (SBI). This means that taxpayers are the only ones kept in the dark about the source of these donations.
- Potential for Crony-Capitalism:** Electoral bonds could become a convenient channel for businesses to route their cash from tax havens to political parties in exchange for favors or advantages. Anonymous funding may also facilitate the infusion of black money into the system.

- Unauthorized Donations:** The use of electoral bonds makes it difficult to ascertain if political parties have received contributions in violation of the provisions under Section 29B of the RPA, 1951, which prohibits donations from government companies and foreign sources. Non-reporting of such contributions hampers transparency.
- Loopholes:** Corporate entities may not benefit from transparency as they might still have to disclose the donated amount to the Registrar of Companies. Furthermore, electoral bonds eliminate the 7.5% cap on company donations, allowing even loss-making companies to make unlimited contributions, creating potential loopholes.

### WAY FORWARD

- The government may reconsider and **modify certain provisions** of the Electoral Bonds Scheme to ensure full disclosure and transparency.
- At the same time, the bonds should ensure that the funds being collected by the political parties are **accounted for clean money** from the **appropriate channels** without any obligation of give and take.
- There is a need for **effective regulation of political financing** along with bold reforms to break the vicious cycle of corruption and erosion of quality of democratic polity.

## ENFORCEMENT DIRECTORATE

### CONTEXT

The Supreme Court struck down the Union government's decision to grant two extensions of tenure to the Chief of Enforcement Directorate (ED).

### ABOUT THE ENFORCEMENT DIRECTORATE (ED)

<b>About</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> The Enforcement Directorate (ED) is a <b>specialized law enforcement agency</b> in India.</li> <li><input type="checkbox"/> It functions under the <b>Department of Revenue, Ministry of Finance</b>, and is responsible for enforcing <b>economic laws and fighting financial crimes</b> in the country.</li> </ul>
<b>Establishment</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> It was established in <b>May 1956</b> with the formation of an '<b>Enforcement Unit</b>' under the aegis of the <b>Department of Economic Affairs</b> and handles Exchange Control Laws violations under <b>Foreign Exchange Regulation Act, 1947 (FERA 1947)</b>.</li> <li><input type="checkbox"/> A year later, the Enforcement Unit was renamed <b>Enforcement Directorate</b>.</li> <li><input type="checkbox"/> In <b>1960</b>, the administrative powers were transferred from the Department of Economic Affairs to the <b>Department of Revenue</b>.</li> </ul>
<b>Responsibility</b>	<p>ED is a <b>multi-disciplinary organization</b> and its <b>statutory functions</b> include <b>enforcement of following Acts</b>:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The Prevention of Money Laundering Act, 2002 (PMLA).</li> <li><input type="checkbox"/> The Foreign Exchange Management Act, 1999 (FEMA).</li> <li><input type="checkbox"/> The Fugitive Economic Offenders Act, 2018 (FEOA).</li> <li><input type="checkbox"/> The Foreign Exchange Regulation Act, 1973 (FERA).</li> <li><input type="checkbox"/> Sponsoring agency under the Conservation of Foreign Exchange and Prevention of Smuggling Activities Act, 1974 (COFEPOSA).</li> </ul>
<b>Jurisdiction</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Both FEMA or PMLA apply to the <b>whole of India</b>. So, the ED can take action against any person on which this act applies.</li> <li><input type="checkbox"/> Cases under FEMA may lie in <b>civil courts</b> where PMLA cases will lie in <b>criminal courts</b>.</li> <li><input type="checkbox"/> The agency has jurisdiction over a <b>person or any other legal entity</b> who commits a crime.</li> <li><input type="checkbox"/> <b>All the public servants</b> come under the jurisdiction of the agency if they are involved in any offence related to money laundering.</li> <li><input type="checkbox"/> <b>ED cannot take an action Suo motu</b>. One has to complain to any other agency or Police first and then ED will investigate the matter and will identify the accused.</li> </ul>
<b>Hierarchy</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> The ED, with its <b>headquarters at New Delhi</b>, is headed by the Director of Enforcement.</li> <li><input type="checkbox"/> There are <b>five regional offices</b> at Mumbai, Chennai, Chandigarh, Kolkata and Delhi headed by Special Directors of Enforcement.</li> <li><input type="checkbox"/> The Directorate has <b>10 Zonal offices</b> each of which is headed by a Deputy Director and 11 sub-Zonal Offices each of which is headed by an Assistant Director.</li> </ul>

<b>Recruitment</b>	<input type="checkbox"/> Recruitment of the officers is done <b>directly and by drawing officers</b> from other investigation agencies. <input type="checkbox"/> It comprises officers of <b>IRS (Indian Revenue Services), IPS (Indian Police Services) and IAS (Indian Administrative Services)</b> such as Income Tax officer, Excise officer, Customs officer, and police.
<b>Tenure</b>	<input type="checkbox"/> In November 2021, the <b>President of India</b> promulgated <b>two ordinances</b> allowing the Centre to extend the tenures of the directors of the Central Bureau of Investigation (CBI) and the Enforcement Directorate from two years to up to five years. <input type="checkbox"/> The <b>Delhi Special Police Establishment (DSPE) Act, 1946 (for ED)</b> and the Central Vigilance Commission (CVC) Act, 2003 (for CV Commissioners) have been amended to give the government the power to keep the two chiefs in their posts for one year after they have completed their two-year terms. <input type="checkbox"/> The <b>chiefs of the Central agencies</b> currently have a fixed two-year tenure, but can now be given three annual extensions. <input type="checkbox"/> However, <b>no further extension can be granted</b> after the completion of a period of five years in total including the period mentioned in the initial appointment.

### VARIOUS CONCERNS SURROUNDING ED

- Politicization and Targeting of Opponents:** There have been allegations that the ED has selectively pursued cases against politicians belonging to opposition parties, raising questions about its impartiality and independence.
- Misuse of PMLA for Ordinary Crimes:** There are allegations that the PMLA is being misused to investigate cases that are unrelated to money laundering or serious organized crime.
- Overbroad Powers of ED:** The ED's powers under the PMLA, particularly in terms of search, seizure, investigation, and attachment of assets, have been criticized as being too broad and unchecked.
- Overreach and Powers akin to Policing:** Some critics argue that the ED has assumed powers akin to that of a policing agency, leading to a blurring of lines between its investigative role and that of law enforcement agencies like the police.
- Lack of Transparency and Clarity:** The Enforcement Case Information Report (ECIR), which is equivalent to the First Information Report (FIR) in regular criminal cases, is not provided to the accused. This lack of transparency raises concerns about due process and the accused's ability to defend themselves effectively.
- Low Conviction Rate:** Despite thousands of cases being registered and arrests made by the ED, the conviction rate under the PMLA remains very low.
  - According to the data quoted by the government in Parliament of India, there were zero convictions between **2005 and 2013-14**.
  - By **2014-15 to 2021-22**, out of 888 cases under ED, only 23 cases were under conviction.
- Pre-trial Arrests and Due Process:** The ED has been criticized for its emphasis on effecting pre-trial arrests rather than focusing on recovering the proceeds of crime.
- Limited Clarity on Proceeds of Crime Recovery:** There are questions about the effectiveness of the ED in recovering the proceeds of crime and redistributing them to victims.

### WAY FORWARD

- Oversight Mechanism:** Establish an independent oversight mechanism to scrutinize the operations and decisions of the ED, ensuring that investigations are conducted impartially and in compliance with constitutional principles and human rights standards.
- Balance between Investigation and Due Process:** Emphasize a fair balance between the investigative powers of the ED and the rights of the accused. Ensuring due process and the right to a fair trial should be prioritized while conducting investigations.
- Enhancing Conviction Rate:** Investigations can enhance the effectiveness of the ED in countering money laundering and related offenses.
- Increased Coordination:** Foster better coordination between law enforcement agencies, such as the Central Bureau of Investigation (CBI) and state police, to ensure efficient handling of cases and avoid duplication of efforts.

## DIGITAL DATA PROTECTION BILL

### CONTEXT

The reworked version of India's long-awaited data protection law has been cleared by the Cabinet and is expected to be tabled before Parliament in the Monsoon Session.

### MORE ON THE NEWS

- The Bill, once it becomes law, will play a **crucial role in India's trade negotiations** with other nations, and especially regions like the European Union, whose **General Data Protection Rules (GDPR)** are among the world's most exhaustive privacy laws.
- However, the bill also subsumes certain contentious clause such as **wide-ranging exemptions to the Centre and its agencies**, and diluting the role of the data protection board.

### UNDERSTANDING THE DATA PROTECTION BILL

#### Objective of the Bill

- The Bill seeks to establish a **comprehensive legal framework** governing digital personal data protection in India.
- It aims to **provide for processing of digital personal data** in a manner that recognizes both the right of individuals to protect their personal data and the need to process it for lawful purposes.

#### Highlights of the Bill

- The Bill will apply to the **processing of digital personal data in India, whether it is collected online or offline** and then digitized. It will also apply to the processing of digital personal data **outside of India** if it involves offering goods or services or profiling individuals in India.
- Personal data may be processed **only for a lawful purpose** for which an individual has given consent. Consent may be deemed in certain cases.
- Data fiduciaries** will be obligated to maintain the accuracy of data, keep data secure, and delete data once its purpose has been met.
- The Bill grants **certain rights to individuals** including the right to obtain information, seek correction and erasure, and grievance redressal.
- The central government may exempt government agencies from the application of provisions of the Bill in the interest of specified grounds such as **security of the state, public order, and prevention of offences**.
- The central government will establish the **Data Protection Board of India** to adjudicate non-compliance with the provisions of the Bill.

#### Features and Analysis

- Notice and Consent:** It contemplates seeking prior consent of the data principal (individual whose data is being collected) which should disclose description of personal data sought and purpose of processing it.
  - The Data Principal may give, manage, review or withdraw her consent to the Data Fiduciary through a Consent Manager.
- Obligations of the data fiduciary:** To ensure that personal data is processed, stored or erased in a safe and proper manner, bill imposes some responsibilities like:
  - If there is a breach, the **data fiduciary (Entity- individual, company, firm or state which decides purpose and means of processing of an individual's personal data)** must inform the Board and the data principal.
  - **Deletion of personal data once proposed for collection is no longer served**, or the retention is no longer necessary.
  - Every data fiduciary **must appoint a Data Protection Officer (DPO)** to address the data principal's queries and concerns.
  - Additional obligations while processing personal data of children, which includes seeking consent from parents/ guardians.
- Significant Data fiduciary:** Central government can identify a data fiduciary as a significant data fiduciary if it handles high volume of sensitive personal data, involves a risk of harm to data principal and impact on sovereignty and integrity of India, security of state, public order, etc.
  - They must appoint an **Independent Data Auditor** (to ensure compliance with proposed Bill) and conduct a Data Protection Impact Assessment and periodic audit to ensure compliance.
- Duties and Rights of the data principal:** Bill stipulates duties of the data principal, to the extent ensuring that it is not registering a false grievance/complaint, not providing false or misleading information, or suppressing information.

- **Rights of data principal include:** Right to information, right to correction or erasure and grievance redressal.
- Establishment of Data Protection Board:** It also provides for setting up of a Data Protection Board, which will oversee compliance by data fiduciaries and data principals.
- Penalties imposed by Board:** Bill proposes 6 types of penalties which extend to a maximum penalty of ₹500 crore.
- Transfer of data outside India:** It suggests that it will notify a list of countries to whom a data fiduciary may transfer personal data, in accordance with such terms and conditions as may be specified.

#### Significance of the Bill

- Plugs Loopholes in the current framework:** The current legal framework for data protection in India, the Information Technology Rules, 2011, is inadequate to protect the privacy of individuals.
  - The existing framework is **based on privacy being a statutory right** rather than a fundamental right.
  - **It does not apply to the processing of personal data** by the government.
  - It has a limited understanding of the kinds of data to be protected.
  - It places scant obligations on the data fiduciaries which can be overridden by contract.
  - There are only minimal consequences for data fiduciaries for breach of these obligations. The DPDP Bill, 2022 aims to address these inadequacies.
- Easier to Comprehend:** While previous versions of proposed legislations were dense and voluminous, the new bill is easier to comprehend and understand.
- Ensures a Transparent regime:** The Bill seeks to introduce transparency to the current system. Usage of personal data by organizations must be done in a manner that is lawful, fair, and transparent to individuals concerned.
- Empowers individuals:** The Bill recognizes the linguistic diversity of India and enables individuals to access basic information in 8th schedule languages.
  - It also empowers individuals by recognizing their right to post mortem privacy, which was missing from the earlier regulations.
  - The bill allows data principals to nominate another individual in case of death or incapacity.
  - For the first time in India's legislative history, "her" and "she" have been used to refer to individuals irrespective of gender.
- Smooth compliance regime:** The Bill proposes a forgiving framework for compliance and suggests several welcome improvements. It deletes non-personal data and does away with the onerous data localization mandate imposed by the PDP Bill, 2019. Relaxing rules on cross-border data flows could bring relief to big tech companies.

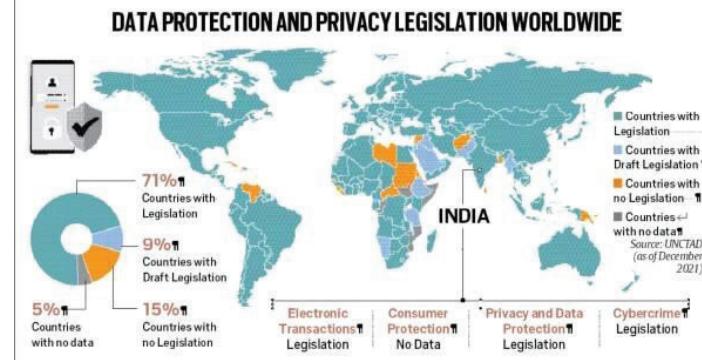
#### Limitations of the Bill

- No defined timelines:** The Bill imposes certain obligations on data fiduciaries, but without providing a timeframe. There is:
  - Lack of deadline for deleting personal data (in case of withdrawal of consent),
  - Lack of timeline for Board to adjudicate on a complaint,
  - No deadline for data fiduciary to erase personal data once the intended purpose is served, etc.
- Powers of the Board:** The Bill does not specify the actual composition/strength of the Board, which has been raised about the reduced independence of the proposed Board.
- Limiting penalties:** Bill seems to focus on the severity of the non-compliance, and not the non-compliance itself. It states that if non-compliance is not significant, the Board may choose to close the enquiry. And remedial measures will be taken only in case non-compliance is significant.
- Large number of exceptions:** It allows the Central government to exempt any data fiduciary from the provisions of the draft Bill. Also, the government can have an exemption from most data protection obligations if the processing is undertaken "in the interests of prevention, detection, investigation of any offence or any other contravention of any law."
- Missed crucial rights for Data Principal:** The Right of Data Portability and Right to be Forgotten are not part of the draft bill.
  - The right to data portability **allowed the data principal** to receive in a structured format all the personal data they had provided to the data fiduciary.
  - It also has data that the data fiduciary generated on the data principal while processing for provisioning of its services.
  - **The right to be forgotten** allows the data principal to ask the data fiduciary to stop the continuing disclosure of their personal data.

## GLOBAL DATA PROTECTION MODELS

An estimated 137 out of 194 countries have put in place legislation to secure the protection of data and privacy, according to the **United Nations Conference on Trade and Development (UNCTAD)**, an intergovernmental organisation within the United Nations Secretariat.

- Africa and Asia show 61% (33 countries out of 54) and 57% (34 countries out of 60) adoption respectively. Only 48% of **Least Developed Countries** (22 out of 46) have data protection and privacy laws.
- EU model:** The GDPR focuses on a comprehensive data protection law for processing of personal data.
  - It has been criticised for being excessively stringent, and imposing many obligations on organisations processing data, but it is still the template for most of the legislation drafted around the world.
- US model:** Privacy protection is largely defined as “**liberty protection**” focused on the protection of the individual’s personal space from the government. It is viewed as being somewhat narrow in focus, because it enables collection of personal information as long as the individual is informed of such collection and use.
- China model:** New Chinese laws on data privacy and security issued over the last 12 months include the Personal Information Protection Law (PIPL), which came into effect in November 2021. It gives Chinese data principals new rights as it seeks to prevent the misuse of personal data.



## INDIA'S STRENGTHENED DATA PROTECTION REGIME

- Justice K. S. Puttaswamy (Retd) vs Union of India 2017:** In August 2017, a nine-judge bench of the Supreme Court in Justice K.S. Puttaswamy Vs Union of India unanimously held that Indians have a constitutionally protected fundamental right to privacy that is an intrinsic part of life and liberty under **Article 21 of the Constitution**.
- B.N. Srikrishna Committee 2017:** Government appointed a committee of experts for Data protection under the chairmanship of Justice B N Srikrishna in August 2017, that submitted its report with recommendations to strengthen privacy law in India including restrictions on processing and collection of data, Data Protection Authority, right to be forgotten, data localisation etc.
- Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021:** IT Rules 2021 mandate social media platforms to exercise greater diligence with respect to the content on their platforms.

## INTERNATIONAL RELATIONS

### INDIA-SRILANKA RELATIONS

#### CONTEXT

India is said to positively transform its ties with Sri Lanka in the upcoming visit of President Wickremesinghe to India.

#### MORE ON THE NEWS

- India has been **extending its continuous support to Sri Lanka's** during the recent economic crisis and both countries are engaged in negotiations regarding a debt treatment plan.
- Sri Lanka recognizes **the importance of Indian tourists and investment** for its economic recovery.
- Therefore, the purpose of the visit is to strengthen the bilateral relationship between the two countries.

#### INDIA-SRILANKA TIES: EVOLUTION

##### **Pre-Independence Relations**

- The earliest mention of Sri Lanka in Indian history dates **back to the epic of Ramayana**, which mentions the rescue of Sita from Lanka by Lord Ram.
- **Buddhism spread to Sri Lanka from India around 2000 years ago**, establishing a cultural and religious connection between the two countries.
- The northern and northeastern regions of Sri Lanka have been historically had economically integrated with India.
- During the colonial period, Sri Lanka (**then known as Ceylon**) was under British rule but was administered separately and not as a part of British India.
- In the 19th century, British colonial authorities **brought indentured labourers from India**, mainly from Tamil Nadu, to work in Ceylon and eventually many Tamils settled in the northern part of the country.



##### **Post-Independence Relations**

- India gained independence in 1947, followed by Ceylon in 1948.
- The **Sinhalese-dominated government** in Ceylon implemented discriminatory policies against Tamils, leading to strained relations between India and Ceylon.
- In 1964, the **Shastri-Sirimavo Pact was signed**, granting citizenship to a large number of Indian Tamils in Ceylon and facilitating repatriation to India.
- In the 1970s and 1980s, **India's allegiance shifted towards the Soviet Union**, while Sri Lanka moved closer to the United States.
- Tensions **between the Sinhalese and Tamil communities in Sri Lanka escalated**, leading to violent incidents in 1977 and 1981.
- It is alleged that **during this period, India's Research & Analysis Wing (R&AW)** provided training and support to Tamil rebel groups in Sri Lanka, aiming to destabilize the Sri Lankan government while preventing the creation of a separate Tamil state.
  - The **Liberation Tigers of Tamil Eelam (LTTE)**, a separatist militant group, emerged in 1976 and became a prominent force.
- The **India-Sri Lanka Accord was signed in 1987**, granting limited autonomy to Tamil areas.
  - However, it **faced opposition from Sinhalese nationalists** who viewed it as interference in Sri Lanka's internal affairs.
  - The **Indian Peacekeeping Force (IPKF)** was deployed in Sri Lanka as part of the accord but faced resistance from both the LTTE and some sections of the Sri Lankan government.
  - In 1990, the IPKF mission was ended, and India's involvement in Sri Lanka reduced.

### Post-Cold War Period Relations

- With the **end of the Cold War**, India adopted a **more outward-looking approach** and sought to improve relations with neighboring countries, including Sri Lanka.
- The **India-Sri Lanka Free Trade Agreement was signed in 1998**, aiming to enhance economic cooperation.
- India encouraged dialogue and a ceasefire between Sri Lanka and the LTTE from 2000 to 2003, although it did not have direct involvement.
- The period from **2005 to 2009 saw the intensification of the civil war in Sri Lanka**, with the Sri Lankan government launching a military offensive against the LTTE.
- The LTTE's leader, Velupillai Prabhakaran, was killed in 2009, and the LTTE was militarily defeated.
- During this period, **Sri Lanka developed closer ties with Pakistan and China**, leading to concerns in India about security implications and increased influence of these countries in Sri Lanka.
- China's involvement in infrastructure development**, including the **Hambantota port**, raised strategic concerns for India.

### Current Focus of India-Sri Lanka Ties

- Both countries continue to engage in economic cooperation and bilateral discussions on various **issues, including trade, investment, tourism, and regional security**.
- India and Sri Lanka have ongoing collaboration in areas such as **infrastructure development, maritime security, counterterrorism, and cultural exchanges**.

## AREAS OF COOPERATION

### Political

- Political relations between the two countries have been marked by **high-level exchanges of visits** at regular intervals.
- In 2019, the **first overseas visit of Indian Prime Minister to Sri Lanka**, was an important symbolic gesture reflective of the special relationship between the countries and the government's focus on its **Neighbourhood First Policy**.
- Sri Lanka is a member of regional groupings like BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) and SAARC in which India plays a leading role**.
- Sri Lanka has long been in India's geopolitical orbit, but its relationship with China has strengthened in recent years.
- Former President Rajapaksa took Sri Lanka closer to China** and side-lining Indian concerns including the rehabilitation of Tamils displaced by the long-running Sri Lankan civil war.

### Economic Relations

- Sri Lanka is one of India's largest trading partners in SAARC**, while India is Sri Lanka's largest trade partner globally.
- Trade between the two countries grew rapidly particularly after the entry into force of the **India-Sri Lanka Free Trade Agreement in 2000**.
- India is among the **top four investors in Sri Lanka** with investments in diverse areas including **petroleum retail, IT, financial services, real estate, telecommunication, hospitality & tourism, banking and food processing (tea & fruit juices), metal industries, tires, cement, glass manufacturing, and infrastructure development** (railway, power, water supply).
- India is also one of the **largest contributors to Foreign Direct Investment in Sri Lanka**. According to BoI, **FDI from India amounted to about US\$ 1.7 billion during the period 2005 to 2019**.
- In 2020, India was Sri Lanka's 2nd largest trading partner with the bilateral merchandise trade amounting to about USD \$ 3.6 billion**.
- Sri Lankan exports to India have increased substantially since 2000 when ISLFTA came into force and **more than 60% of Sri Lanka's total exports to India** over the past few years have used the ISFTA benefits.

### Development

- The Government of India has committed significant financial assistance to Sri Lanka, with grants alone **amounting to approximately USD 570 million**, and the overall commitment exceeding USD 3.5 billion.
- This financial support is utilized for a wide range of development projects in Sri Lanka, including the following sectors:
  - **Housing:** This initiative aims to provide housing units to internally displaced persons affected by the LTTE war and the humanitarian crisis.

- **Infrastructure:** India has been involved in **rehabilitation of the Northern Railway lines** and wreck removal, which contribute to improving transportation connectivity in the region.
- **Vocational Training and Education:** India has supported the establishment of vocational training centers in Sri Lanka, which aim to enhance skills and employability.
- **Culture and Heritage:** India has been involved in the construction of a **Cultural Centre at Jaffna** and the restoration of the **Thiruketheeswaram Temple**.

#### Defence Cooperation

- The two countries have increased their military-to-military relationship, conducting joint exercises such as the '**Mitra Shakti**' **military exercise** and **SLINEX naval exercise**.
- India also provides defence training to the Sri Lankan forces, enhancing their capabilities and cooperation in the security domain.
- In addition, a trilateral maritime security cooperation agreement was signed between India, Sri Lanka, and the Maldives, focusing on improving surveillance, anti-piracy operations, and reducing maritime pollution in the **Indian Ocean Region**.
- Both countries have also collaborated on countering drug and human trafficking, signing an agreement in April 2019 to address these challenges effectively.

### **ISSUES IN INDIA SRILANKA RELATIONS**

There are several key issues in India-Sri Lanka relations that have been a source of concern and have impacted the bilateral relationship.

- Killing of Fishermen:** The killing of Indian fishermen by the Sri Lankan Navy has been a longstanding issue between the two countries. Incidents of Indian fishermen being arrested and their boats being confiscated by Sri Lankan authorities have strained relations. In 2019 and 2020, a significant number of Indian fishermen were arrested, and several Indian boats were seized.
- Influence of China:** China's growing economic presence and political influence in Sri Lanka have raised concerns for India. China has become the largest investor in Sri Lanka, accounting for a significant share of **foreign direct investment (FDI)** in the country. This has led to apprehensions regarding the impact of China's influence on the strategic balance in the region and strained India-Sri Lanka relations.
- 13th Amendment of the Sri Lankan Constitution:** The 13th Amendment of the Sri Lankan Constitution was introduced to address the demands of the Tamil community for equality, justice, peace, and respect within a united Sri Lanka. India supports the full implementation of **the 13th Amendment**, which envisages devolving powers to provincial councils. However, the Sri Lankan government is yet to fully implement the amendment, leading to tensions and differences of opinion on this matter.

## **INDIA'S NEIGHBOURHOOD FIRST POLICY**

### **CONTEXT**

The Committee on External Affairs has submitted its Report on India's Neighbourhood First Policy.

### **ABOUT NEIGHBOURHOOD FIRST POLICY**

- Neighbourhood First Policy is a **dynamic policy that was conceived around 2008** to forge strong neighbourhood relations based on a consultative, non-reciprocal and outcome-oriented approach.
- It emphasizes creating a peaceful, prosperous, and stable neighbourhood through enhanced connectivity, economic cooperation, and people-to-people exchanges.
- Principles of 'Neighbourhood First' policy**
  - Sovereignty and territorial integrity
  - Mutual respect and sensitivity
  - Non-interference in internal affairs.
  - Shared prosperity
  - Connectivity for regional integration
  - People-to-people exchanges

- The priority countries under the policy are **Afghanistan, Bangladesh, Bhutan, Nepal, Maldives, Myanmar, Pakistan and Sri Lanka.**
- Under the policy, India also engages with its neighbours under regional frameworks like SAARC, BIMSTEC, Bangladesh-Bhutan-India-Nepal (BBIN) etc.

#### Recent Developments related to the 'Neighbourhood First' policy

- In 2014, the Indian Prime Minister (PM) invited all heads of state from South Asia to his oath-taking ceremony.
- Stronger ties with Afghanistan:** The Indian PM visited Afghanistan in 2015 and inaugurated the **Afghan Parliament**, which was made with the help of India. He visited Afghanistan again in 2016 to inaugurate the **Salma Dam** in Herat.
- Ties with Nepal:** The PM was the first Indian PM to visit Nepal after 17 years in 2014.
- Ties with Bangladesh:** PM Modi visited Bangladesh in 2015, where India and Bangladesh exchanged instruments of ratification regarding the agreement on the historic land boundary.
- BBIN:** BBIN Motor Vehicle Agreement for the regulation of passenger, personal and cargo vehicular traffic amongst BBIN members was signed in 2015.
- Vaccine Maitri:** India, through its vaccine diplomacy, extended help on priority to its neighbours during the Covid-19 pandemic.

### CHALLENGES FACING NEIGHBOURHOOD FIRST POLICY

- Threats from Cross-Border Terrorism and Other Illicit Activities:** India faces persistent challenges from cross-border terrorism, illegal migration, smuggling, drug trafficking, and weapons trafficking from some of its neighboring countries. These security concerns hinder the smooth implementation of the Neighbourhood First Policy.
- Delays in Development Projects:** The implementation of development projects in neighboring countries often faces delays due to various factors, including bureaucratic hurdles, political instability in the region, and differing priorities among the nations.
- China's Belt and Road Vision and America's Indo-Pacific Vision:** India's neighbours have been courted by other major powers, such as China with its Belt and Road Initiative and the United States with its Indo-Pacific vision. These initiatives can create complexities for India's Neighbourhood First Policy as they offer alternative avenues for economic and strategic engagement.
- Limited Parliamentary Exchanges:** Meaningful parliamentary exchanges between India and its neighbours are essential for fostering closer ties and better understanding. However, limited interactions at the parliamentary level may hinder the growth of bilateral relationships.
- Deficiency in Border Infrastructure, Especially in the North-Eastern Region:** Inadequate border infrastructure, particularly in the North-Eastern region (NER), poses challenges in strengthening connectivity and trade with neighboring countries. This deficiency may slow down the progress of the Neighbourhood First Policy in these regions.

### KEY RECOMMENDATIONS OF THE REPORT

- Dynamic Policy:** The report acknowledges that India's Neighbourhood First Policy is dynamic and adjusts to the country's changing interests in the region while adapting to regional circumstances.
- Economic Ties with Pakistan:** The committee urges the Government to consider establishing economic ties with Pakistan if they take steps towards broader people-to-people contacts. The emphasis is placed on the cultural commonalities and civilizational linkages between the two countries, promoting cooperation and reducing feelings of enmity among citizens.
- Focus on Smaller Neighbours:** Considering China's Belt and Road vision and America's Indo-Pacific vision, the report highlights the strategic importance for India to engage and deepen ties with smaller neighboring countries. This approach is seen as crucial for India's strategic interests and foreign policy requirements.
- South Asian Market Opportunities:** The report stresses the importance of grasping and consolidating opportunities presented by an open and competitive South Asian market from both security and economic perspectives.
- Concerns with Pakistan:** Terrorism emanating from territories under Pakistan's control is one of the core concerns. The onus is placed on Islamabad to create a conducive atmosphere for meaningful dialogue.
- International Engagement:** The report notes India's proactive outreach with the international community to counter Pakistan's attempts to present an alarmist situation of the region, interfere in India's internal affairs, and internationalize bilateral issues.

- **Engaging Regional and Multilateral Bodies:** In view of Pakistan's belligerent attitude, the committee desires that the Government to continue to proactively engage with regional and multilateral bodies/organizations to sensitize them about Pakistan's role in fostering terrorism and to seek support in the fight against terrorism on Pakistani soil.

## GOVERNMENT INITIATIVES TO HARMONISE NEIGHBOURHOOD RELATIONS

India has undertaken various initiatives to harmonize relations with its neighbours in the region.

- **'Neighbourhood First' Policy:** India's Neighbourhood First Policy is based on the principles of mutual respect, understanding, and sensitivity to each other's concerns and priorities. It aims to prioritize India's relations with its neighboring countries and foster stronger ties.
- **Act East Policy:** The Act East Policy is focused on enhancing ties with the countries of **Southeast Asia and the Asia-Pacific region**. It seeks to boost economic, cultural, and strategic linkages with these nations.
- **Connectivity Initiatives:** India is actively promoting connectivity initiatives to improve transportation and trade links with its neighbours. Some of these initiatives include the **international north-south transport corridor**, the **Chabahar port in Iran** (which facilitates access to Afghanistan and Central Asia), and the **Kaladan multimodal transit transport project** in Myanmar.
- **Development Cooperation:** India provides development assistance to its neighbours through various initiatives such as the **Indian Technical and Economic Cooperation (ITEC) Program** and the **Indian Council for Cultural Relations (ICCR)**. These programs aim to support capacity building, education, healthcare, and cultural exchange.
- **Vaccine Diplomacy:** India has played a significant role in the region's fight against COVID-19 by providing vaccines to its neighboring countries under its vaccine diplomacy initiative. This has helped strengthen India's ties and goodwill in the region.
- **Sub-regional Initiatives:** India is part of sub-regional groupings such as the **Bangladesh–Bhutan–India–Nepal (BBIN) network**. These initiatives aim to enhance cooperation and connectivity among the participating countries.
- **Country-Specific Initiatives:** India has country-specific initiatives with its neighbours, such as the Indo-Bhutan treaty of peace and friendship, agreements related to hydropower projects with Nepal, providing financial support to Bhutan's five-year plans, and assisting Sri Lanka during its balance of payment crisis.
- **Science and Technology Cooperation:** India launched the **South Asia Satellite (SAS)** to improve communication and disaster management links among its South Asian neighbours. This initiative helps in sharing valuable data and resources in times of crises.
- **Physical and Energy Connectivity:** India has been actively engaged in physical and energy connectivity projects, such as the Chabahar port, Kaladan project, grid interconnection with Nepal, Bhutan, and Bangladesh, and power projects in Bangladesh and Bhutan.
- **Trade Connectivity and Market Access:** India has facilitated trade connectivity through special market access, financial assistance, and border crossings with neighboring countries. This includes initiatives like **Lines of Credit to Sri Lanka and land custom stations with Bangladesh**.
- **Humanitarian Assistance:** India provides humanitarian assistance to its neighbours through early warning systems, disaster relief efforts, and aid deployment during natural disasters and emergencies.

## INDIA FRANCE RELATIONS

### CONTEXT

The Prime Minister attended France's Bastille Day parade in Paris, indicating the significance of the bilateral relationship between India and France.

### MAJOR HIGHLIGHTS OF THE VISIT

#### Pillar 1: Partnership for Security and Sovereignty

- **Defence:** Continuation of cooperation on fighter jets and submarines, with the successful delivery of 36 Rafale jets to the Indian Air Force and the P75 program for six Scorpene submarines.
- **Space:** Enhancement of scientific and commercial partnership between France's CNES and India's ISRO, including joint projects such as the Earth observation satellite TRISHNA and maritime surveillance satellites in the Indian Ocean.
- **Civil Nuclear Energy:** Progress on the 6-European Pressurized Reactors power plant project in Jaitapur, Maharashtra, and cooperation on small modular reactors and advanced modular reactors.

- Indo-Pacific:** Adoption of a roadmap for joint actions in the Indo-Pacific region, covering comprehensive strategies and discussions on an Indo-French development fund for third countries in the region.
- Counter-Terrorism:** Strengthening cooperation between France's GIGN and India's National Security Guard.
- Critical Technology:** Strengthening cooperation on cutting-edge digital technology, including supercomputing, cloud computing, artificial intelligence, and quantum computing, with the announcement of an agreement between Atos and the Ministry of Earth Sciences of India for the supply of supercomputers.
- Civil Aviation:** Signing of technical and safety agreements to support the expansion of routes between France and India and the growth of the Indian civil aviation market.

#### Pillar 2: Partnership for the Planet and Global Issues

- Plastic Pollution:** Commitment by France and India to adopt an international treaty to end plastic pollution throughout the entire life cycle of plastic products.
- Health:** Signing of a Letter of Intent on health and medicine to structure cooperation in hospitals, medical research, digital technology, biotechnology, public health, and combating micro-bacterial resistance.
- Blue Economy:** Launch of a partnership between France's IFREMER and India's National Institute of Ocean Technology (NIOT) on ocean research under the Blue Economy and Ocean Governance roadmap.
- Financing the Energy Transition:** Announcement of financing from the French Development Agency for India's sustainable cities program "CITIIS 2.0" and financing from Proparco for the South Asia Growth Fund (SAGF III).
- Decarbonized Hydrogen:** Manufacturing electrolyzers in India, following the Indo-French roadmap for decarbonized hydrogen.

#### Pillar 3: Partnership for People

- Student Mobility:** Target of welcoming 30,000 Indian students in France by 2030 and the issuance of 5-year short-stay Schengen visas for Indian students with a Master's degree from a French university.
- Diplomatic and Consular Network:** Opening of a Consulate General of India in Marseille, France, and a Bureau de France in Hyderabad, India.
- Culture:** France's selection as India's partner for establishing a major new National Museum in New Delhi, and the agreement between France Médias Monde and Prasar Bharati for the exchange of audio-visual content and co-production of programs.
- Research:** Increase in funding for the Indo-French Centre for the Promotion of Advanced Research to support new projects.

### **INDIA-FRANCE TIES:EVOLUTION**

- India and France have enjoyed a long-standing and amicable relationship, formalized as a "**strategic partnership**" in 1998.
- Since then, the two nations have engaged in extensive collaboration across various sectors, including defence, counterterrorism, nuclear energy, and space.
- A notable milestone in their cooperation was France becoming the first country to enter into a civil nuclear cooperation agreement with India following the **Nuclear Suppliers' Group (NSG)** waiver. This enabled India to resume civil nuclear cooperation with the global community.
- India and France have also expanded their cooperation in other areas such as trade, investment, culture, science, technology, and education.
- France has been a consistent supporter of India's growing role on the global stage, backing its aspirations for permanent membership in the United Nations Security Council (UNSC) and the Nuclear Suppliers Group (NSG).
- During periods of regional conflicts, France has demonstrated solidarity with India. Notably, it lifted the arms embargo that affected India and Pakistan during the 1965 conflict, and during the 1971 war and the refugee crisis on India's border with Bangladesh, France stood by India's legitimate concerns.
- An essential aspect of their relationship was France's refusal to impose sanctions on India after the 1998 nuclear tests, and it publicly opposed U.S. sanctions during that time.

### **AREAS OF COOPERATION**

#### Defence

- France has emerged as a key defence partner for India, becoming the second largest defence supplier in 2017- 2021.
- France has emerged as a major strategic partner for India with crucial defence deals and increased military to military engagement.

- **Example:** Induction of the **French Scorpene conventional submarines**, being built in India under technology transfer agreement of 2005, and the Indian Air Force having received 36 Rafale fighter jets.
- The Tata group has also tied up with Airbus to manufacture **C-295 tactical transport aircraft in Vadodara, Gujarat.**
- **Military Dialogues and Regularly held Joint Exercises:** Varuna (navy), Garuda (air force), and Shakti (army)

#### Economic Cooperation

- France has emerged as a key trading partner of India with annual trade of **USD 12.42 billion in 2021-22.**
- It is the 11th largest foreign investor in India with a cumulative investment of USD 10.31 billion from April 2000 to June 2022, which represents **1.70% of the total foreign direct investment inflows** into India.

#### Civil Nuclear Cooperation

- France was among the first countries with which India signed a civil nuclear deal.
- Paris also played a critical role in limiting India's isolation in the non-proliferation order after the 1998 nuclear tests.

#### Cooperation at International Forum

- France supports India's bid for permanent membership of the **United Nations Security Council** as well as its entry into the **Nuclear Suppliers Group.**

#### Climate Cooperation

- Both countries are concerned about climate change, where **India has supported France in the Paris Agreement** expressing its strong commitment to mitigating the effects of climate change.
- Both countries, as part of their joint efforts on climate change, launched the **International Solar Alliance in 2015.**

#### Maritime Ties

- Joint Strategic Vision of India-France Cooperation** in the Indian Ocean Region presents a blueprint for a strengthening of ties.
- French - Indian joint patrolling** in the Indian Ocean signals India's intent to expand its footprint in the Indian Ocean by engaging with like-minded partners.
- Maritime security has further gained momentum as both countries have articulated their common vision for a **free, fair and open Indo-Pacific.**
- India and France in September 2022 agreed to set up an **Indo-Pacific Trilateral Development Cooperation Fund** that will support sustainable innovative solutions for countries in the Indo-pacific region.
- India, France, UAE Trilateral Initiative is aimed at ensuring maritime domain awareness and security from the east coast of Africa to the far Pacific.

#### Space Cooperation

- India and France have continued to strengthen their cooperation in the field of space in recent years.
- Some of the recent developments in their space collaboration include:
  - **ISRO-CNES Joint Working Group:** In 2020, the Indian Space Research Organization (ISRO) and the French National Centre for Space Studies (CNES) established a Joint Working Group to further enhance their cooperation in the field of space.
  - **Joint Mars Mission:** In 2020, ISRO and CNES announced plans to collaborate on a joint Mars mission in the near future.
  - **Collaboration on Space Debris:** India and France have also been working together on addressing the issue of space debris.
  - **Joint Earth Observation Mission:** In 2021, ISRO and CNES announced plans to collaborate on a joint Earth observation mission, which will involve the development of a satellite to study the Earth's atmosphere and climate.

### CHALLENGES IN INDIA-FRANCE RELATIONS

- Absence of Free Trade Agreement (FTA):** Despite having good relations, France and India don't have a Free Trade Agreement (FTA) between them. Further, no progress is being made on the India-EU Broad based Trade and Investment agreement (BTIA) as well.
- Defence and Security Cooperation:** Despite a strong defence partnership, the two countries have different priorities and approaches towards defence and security cooperation. India's focus on its neighbourhood **and its "non-aligned" policy** can sometimes clash with France's global interests.
- Trade Imbalances:** Despite being significant trade partners, there is a trade imbalance between India and France, with France exporting more to India than the other way around. This imbalance has been a source of concern for India, and both countries are looking for ways to address it.

- **Intellectual Property Rights:** India has been criticised by France for not adequately protecting intellectual property rights, which has affected French businesses operating in India.
- **China's Factor:** China's increasing dominance in the Indian Ocean region has become a source of concern for both India and France, as it has the potential to disrupt the regional balance of power and undermine regional stability and security.

## INDIA-BANGLADESH RELATIONS

### CONTEXT

The Indian Ministry of Railways handed over 20 broad-gauge locomotives to Bangladesh recently.

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- The handing over of locomotives to Bangladesh is to strengthen **bilateral relations between the two countries**.
- The **locomotives have been modified to suit the requirements of Bangladesh Railway** and will help handle the increasing volume of passenger and freight train operations in Bangladesh.
- Additionally, **India has offered Bangladesh the use of the IT system** deployed by the **PM-GATI SHAKTI scheme**, which provides detailed information based on satellite imagery to streamline planning and improve connectivity.
- The Indian Railways is playing a vital role in improving rail connectivity and trade between India and Bangladesh, with close to 100 cargo trains being exchanged between the two countries each month.

### INDIA-BANGLADESH RELATIONS: HISTORICAL TIES

- India and Bangladesh **share a 4,096.7 km-long border**, making it the longest land boundary that India shares with any of its neighboring countries.
- The relationship between India and Bangladesh is not just that of neighbours, but it is deeply **rooted in shared history, heritage, culture, language, and a passion for music, literature, and arts**.
- India was the first country to recognize Bangladesh as an independent state and established diplomatic relations immediately after its independence in 1971.
- Both countries are members of **regional organizations like SAARC, BIMSTEC, IORA, and the Commonwealth**.



### AREAS OF COOPERATION

- **Political:** India's support in terms of humanitarian aid, moral support, diplomatic efforts, and military assistance played a crucial role in the liberation of Bangladesh. Sheikh Mujeeb ur Rehman, **popularly known as Bang Bandhu**, openly recognized that maintaining a friendship with India is a fundamental aspect of Bangladesh's foreign policy.
- **Security & Border Management:** Coordinated Border Management plan, signed in 2011, which aims to synergize the efforts of both countries' border guarding forces in effectively controlling cross-border illegal activities and crimes.
  - The **India-Bangladesh Land Boundary Agreement (LBA)** came into effect in June 2015.
  - This agreement facilitated the exchange of enclaves between India and Bangladesh and the signing of strip maps.
  - It is expected to **enhance border management** and address issues related to trafficking, illegal movements, and more.
  - The settlement of the maritime boundary arbitration between India and Bangladesh, based on the UNCLOS award in 2014, has opened avenues for economic development in the Bay of Bengal region, benefiting both countries.
  - India and Bangladesh have established an **annual Coordinated Patrol (CORPAT)** as a joint initiative between their navies.
- **River Water Management:** India and Bangladesh have a shared responsibility for managing the waters of 54 rivers, with Bangladesh being the lower riparian country.
  - Being a **lower riparian country**, Bangladesh faces potential risks and impacts from the rivers originating in India.

- However, India provides Bangladesh with seasonal water flow and rainfall data to assist in flood forecasting.
  - To facilitate effective cooperation and maximize the benefits from the common river systems, a **bilateral Joint Rivers Commission (JRC)** has been operational since 1972.
  - The **Ganges Waters Treaty**, signed in 1996, has also been successful in facilitating the sharing of water from the River Ganges during the lean season.
- Bilateral Trade:** The volume of bilateral trade **stood at approximately \$9.3 billion** (2017-18), which is more than three times the value recorded a decade ago (\$2.67 billion).
- Both countries are actively working on strengthening economic cooperation, including joint investments and **collaboration under the 'Blue Economy' program**, which focuses on the exploration of hydrocarbons, marine resources, deep-sea fishing, marine ecology preservation, and disaster management among littoral states.
  - **India's exports to Bangladesh** in 2017-18 amounted to around \$8.4 billion, while imports from Bangladesh during the same period were around \$900 million.
  - Bangladesh has received significant duty concessions under agreements like **SAFTA, SAPTA, and APTA**.
  - Since 2011, India has **provided duty-free, quota-free access to Bangladesh** (and other SAARC LDCs) on all tariff lines, except for sensitive items such as tobacco and alcohol, under SAFTA.
  - Additionally, **four Border Haats**, two each in Tripura and Meghalaya, have been established to benefit communities along the border.
  - Investments and Indian Foreign Direct Investment (FDI) in Bangladesh have shown significant progress.
- Energy Sector Cooperation:**
- Power transmission between the two countries takes place through interconnections like the **Berhampore-Bheramara interconnection** and **Suraj Mani Nagar-Comilla interconnection**.
  - India, Russia, and Bangladesh signed an agreement for the construction of the Rooppur atomic plant in Bangladesh.
  - The **Maitree thermal power plant**, with a capacity of 1320 MW, is a joint venture between the National Thermal Power Corporation (NTPC) of India and the Bangladesh Power Development Board (BPDB).

**It is a coal-fired power plant being developed in Rampal.**

- Several Indian public sector units, including the **Indian Oil Corporation, Numaligarh Refinery Limited, Gas Authority of India Limited, and Petronet LNG Ltd**, are collaborating with their Bangladeshi counterparts in the oil and gas sector of Bangladesh.
- In 2018, the construction of the **India-Bangladesh Friendship Pipeline Project** was inaugurated.

**This pipeline, spanning 130 km, connects Siliguri in West Bengal, India, to Parbatipur in the Dinajpur district of Bangladesh.**

- Connectivity:**
- For road transport, **there are 36 functional Land Customs Stations (LCSs)** and 2 Integrated Check Posts (ICPs) along the border, enabling the operationalization of goods transportation.
  - Since 1972, the **Protocol on Inland Water Trade and Transit (PIWTT)** has facilitated the movement of goods through barges/vessels on eight specific routes across the river systems of Bangladesh.
  - Connectivity through Coastal Waterways, facilitated by the **Coastal Shipping Agreement**, has enabled direct sea movement of containerized, bulk, and dry cargo between the two countries.
  - The passenger train service '**Maitree Express**' between Kolkata and Dhaka now operates four days a week and has been converted into a fully air-conditioned (AC) train service.
  - The **Bangladesh, Bhutan, India, and Nepal (BBIN) Motor Vehicles Agreement (MVA)** aims to enhance road connectivity.

- Cultural Exchange:**
- The High Commission of India has been publishing the **Bengali literary monthly magazine 'Bharat Bichitra'** in both print and electronic editions for the past 43 years.
  - This magazine is highly regarded in Bangladesh and enjoys a large readership across different sections of society.
  - The **Indira Gandhi Cultural Centre** conducts regular training courses in various disciplines such as Yoga, Hindi language, Hindustani Classical Music, Manipuri Dance, Kathak, and Painting. These courses are well-received by Bangladeshi students and have gained popularity.

## CHALLENGES IN INDIA-BANGLADESH TIES

The major challenges between India and Bangladesh relationship include:

- **Teesta Water Issue:** The sharing of Teesta river waters has been a contentious issue between the two countries. Bangladesh seeks an equitable distribution of water, while West Bengal's concerns about the impact on its own water supply have hindered the signing of a treaty.
- **China's Influence:** India is concerned about China's increasing influence in Bangladesh, particularly through infrastructure projects such as the development of ports. India views Bangladesh's proximity to China's "One Belt, One Road" initiative as a potential threat to its own regional influence.
- **Illegal Migration and Insurgency:** The porous border between the two countries has led to a significant influx of illegal migrants, posing socio-economic and security challenges for India. The presence of insurgent groups, such as the Jamaat-ul Mujahideen Bangladesh (JMB), also raises concerns about terrorism.
- **Rohingya Crisis:** India's handling of the Rohingya refugee crisis has been a point of contention. Bangladesh expected India to play a more proactive role in resolving the crisis, but India's approach and stance have been disappointing to Bangladesh.
- **Drug Smuggling and Trafficking:** Cross-border drug smuggling and human trafficking are significant challenges that require joint efforts to combat. The illegal trade poses risks to both countries' security and social fabric.
- **Border Disputes:** Unresolved border issues, such as the non-demarcation of a land border along Comilla-Tripura, continue to strain the bilateral relationship. Concerns over the impact on local communities have hindered progress in resolving these disputes.
- **Public Discontentment:** There are various issues that have led to public discontent in Bangladesh, including market access for Indian energy companies, border restrictions, unresolved agreements like the Teesta treaty, and limited market access for Bangladeshi companies and TV channels.

## INDIA-JAPAN RELATIONS

### CONTEXT

Indian External Affairs Minister emphasized the importance of enhancing India-Japan partnership and collaboration in various areas, including economics, supply chains, digital technology, and maritime security.

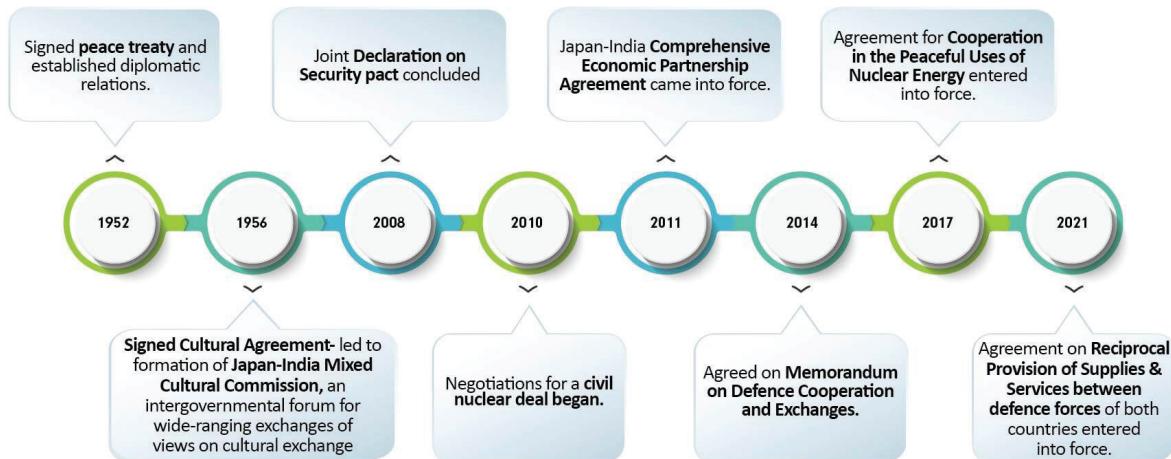
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#### Current Scenario

- **India and Japan prioritize peacetime cooperation:** Both countries have a strong focus on strengthening their cooperation during peacetime rather than explicitly discussing their actions in the event of conflicts, particularly involving the Taiwan Strait or the Line of Actual Control (LAC) between India and China.
- **India and Japan as "natural partners":** The two countries view themselves as "natural partners" and acknowledge the challenges posed by the evolving global order. They aim to enhance their partnership and collaboration in various domains, including economics, supply chains, digital technology, critical technologies, and maritime security.
- **Japan's role in India's modernization:** Japan has been an "exemplar modernizer" and a role model for India. Japan is known for its industrial initiatives in India, such as the Maruti-Suzuki collaboration, Metro rail services, and high-speed rail projects like the Mumbai-Ahmedabad Shinkansen project.
- **India-Japan Strategic Dialogue and investment commitment:** The two countries held their 15th annual India-Japan Foreign Ministers' Strategic Dialogue, where they recommitted to a 5-trillion yen target for Japanese investment in India between 2022 and 2027.
- **Japan's Indo-Pacific policy and focus on India:** Japan's new Indo-Pacific policy places special emphasis on ties with India, including cooperation on projects in third countries like Sri Lanka and Bangladesh.
- **Alignment of G-7 and G-20 priorities:** Japan expresses interest in aligning its G-7 presidency goals with India's G-20 priorities, with a specific focus on involving the Global South. The Japanese Foreign Minister emphasizes the need to listen to the voices of the Global South and collaborate on urgent issues facing these countries to uphold a free and open international order based on the rule of law.

## EVOLUTION OF INDIA-JAPAN TIES

### Timeline of India- Japan relations



## AREAS OF COOPERATION

### Economic and Commercial Cooperation:

- A Comprehensive Economic Partnership Agreement (CEPA) has been in place between India and Japan since 2011, which has contributed to an increase in bilateral trade.
- Japan has been one of the largest investors in India, with over \$35 billion of foreign direct investment (FDI) in the past 20 years, primarily in sectors such as automobiles, electrical equipment, telecommunications, chemicals, and pharmaceuticals.
- Furthermore, Japan is the largest bilateral donor to India, providing Japanese Official Development Assistance (ODA) for major infrastructure projects like the Delhi-Mumbai Industrial Corridor and the Ahmedabad-Mumbai High-Speed Rail Link.
- In response to the supply chain disruptions caused by Covid-19, India and Japan are collaborating with Australia on the Supply Chains Resilience Initiative (SCRI).

### Strategic Cooperation:

- India and Japan have been collaborating with Germany and Brazil for permanent membership of the United Nations Security Council (UNSC) as part of the G4 or Group of Four.
- The 2+2 Dialogue, which includes discussions between the foreign and defence ministers of both nations, has led to an expansion of defence and strategic cooperation that extends beyond national boundaries.
- Additionally, the Quadrilateral Security Dialogue (Quad) between India, the United States, Japan, and Australia is aimed at promoting a Free and Open Indo-Pacific.
- Japan welcomes the Indo-Pacific Ocean's Initiative (IPOI) announced in 2019 at East Asia Summit (EAS) in Bangkok for promoting safe, secure, and stable maritime domain, sustainable use of marine resources, and disaster prevention and management.

### Defence cooperation:

- Naval Exercises: JIMEX (started in 2012), Malabar (started by India and US in 1992 with Japan becoming permanent member in 2015)
- Army Exercise: Dharma Guardian (started in 2018)

- **Air Force Exercise:** Shinyuu Maitri (started in 2018)

**Skill Development:**

- Japan and India have been collaborating to promote manufacturing in India through the establishment of **Japan India Institute of Manufacturing (JIM) centres**.
- These centres were set up to provide technical education and training to students in various **fields of manufacturing, such as electronics, automotive, and robotics**.
- As of 2021, there are 12 JIM centres in India, located in various states such as Gujarat, Rajasthan, and Tamil Nadu.
- Furthermore, Japan has **pledged to train 30,000 Indian youth in Japanese-style manufacturing techniques over the next 10 years**.
- This initiative is part of the **Japan-India Technical Intern Training Program (TITP)**, which aims to provide Indian youth with practical training and work experience in Japan.

**Nuclear Energy:**

- Following a temporary pause and economic sanctions on India after its nuclear tests in 1998, the country **resumed its cooperation with Japan** in the peaceful use of nuclear energy in 2017.
- Both nations **signed an agreement that resulted in increased collaboration in energy security and clean energy**, facilitated the commissioning of global nuclear reactors using Japanese components, and supported India's bid for membership in the **Nuclear Suppliers Group (NSG)**.

**S&T /Space Cooperation:**

- In 2019, the first-ever space dialogue between India and Japan was held to explore opportunities for bilateral cooperation in space.
- Currently, the **Indian Space Research Organization (ISRO)** and the **Japan Aerospace Exploration Agency (JAXA)** are collaborating on a joint lunar polar exploration (**LUPEX**) mission to send a lander and rover to the **Moon's south pole by 2024**.
- Additionally, the **India-Japan Digital Partnership (I-JDP)** was launched in 2018 to build upon the science and technology collaboration established in 1985 and focus on digital ICT technologies to foster innovation and entrepreneurship in the digital sector.
- 'India-Japan Emerging Technology and Innovation Fund' was established in 2019, a fund-of-funds for emerging technology startups in **Internet of Things (IoT)**, Artificial Intelligence (AI), Machine Learning etc.

**Historical & Cultural Relations:**

- Since the **first Cultural Agreement in 1957**, cultural relations between India and Japan have continued to flourish through friendly exchanges and increased **people-to-people contact**.
- The historical ties between the nations can be traced back to the **6th century when Buddhism** was first introduced to Japan.
- The influence of Indian culture, transmitted through Buddhism, has had a significant impact on Japanese culture, and this has fostered a sense of affinity between the Japanese people and India.

## CHALLENGES IN INDIA-JAPAN RELATIONS

- Bilateral Trade Imbalance:** The trade ties between India and Japan have not developed as much as India's trade relations with China. The low share of Japan in India's imports and exports, compared to China, remains a significant issue.
- Chinese Factor:** Some critics view the India-Japan relationship as driven by concerns about China's rise rather than genuine mutual interests. They argue that the cooperation should be based on shared interests in areas like trade and technology.
- Delayed Projects:** Despite progress in economic cooperation, certain projects such as the Asia-Africa Growth Corridor and the Mumbai-Ahmedabad Bullet train face delays and weak economic engagements.
- Barriers for Indian Exports:** India encounters barriers in penetrating Japanese markets due to factors like language differences and high quality service standards, which need to be addressed to boost cooperation.
- Diverging Interests:** India's decisions on trade issues like exiting from the trade pillar of the **Indian-Pacific Economic Framework (IPEF)** and the **Regional Comprehensive Economic Partnership (RCEP)** differ from Japan's stance, which can create challenges in finding common ground.

- China's Influence:** Both India and Japan have border and hegemonic issues with China, leading to their policy stances often being influenced by China's actions, which can impact their overall relationship.
- Balancing QUAD and BRICS:** India's membership in groups like BRICS and its participation in the Asian Infrastructure Investment Bank (AIIB) require a delicate balancing act between its engagement in the QUAD alliance and other multilateral forums involving China.
- Asia-Africa Growth Corridor (AAGC) Scepticism:** There is scepticism about the feasibility and nature of projects within the Asia-Africa Growth Corridor, which can affect the overall effectiveness of this initiative.
- Lopsided Trade and Geopolitics:** Correcting the trade imbalance and addressing issues related to political, territorial, and water disputes with China is crucial to prevent Beijing from leveraging its economic influence against India.

## INDIA-RUSSIA RELATIONS

### CONTEXT

Over the course of more than a year since the beginning of the war in Ukraine, Russia's generous discounts have propelled it to become India's primary crude oil supplier.

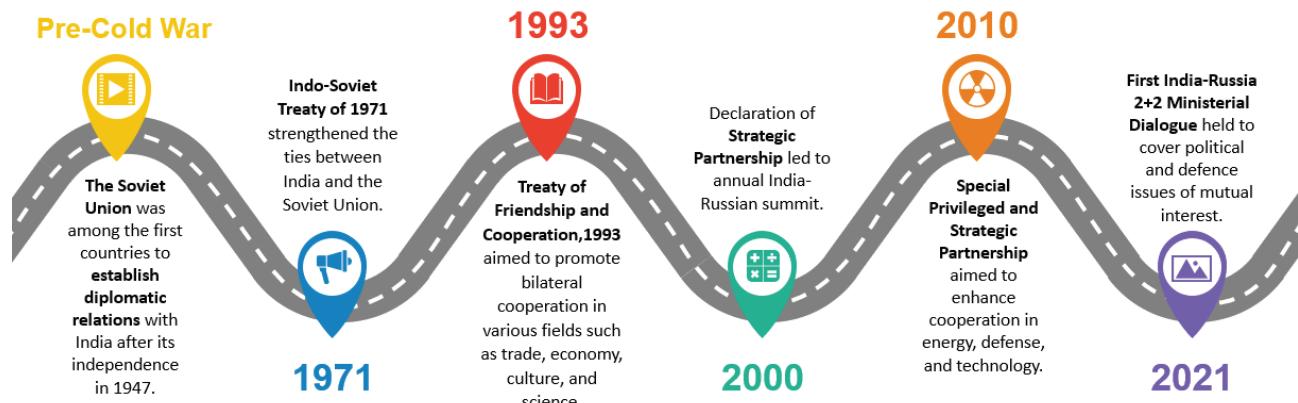
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- Shift in India's Oil Imports:**
  - Prior to the war in Ukraine, **Russia was not a major player in India's oil trade**, with West Asian suppliers dominating the market.
  - However, **after the invasion and subsequent sanctions imposed on Russia by Western countries**, Russia began offering **deep discounts** on its oil to attract buyers, leading to a **significant increase in India's oil imports from Russia**.
- Russian Discounts:**
  - **G7 Price Cap Impact:** The G7 countries imposed a \$60-per-barrel price cap on seaborne Russian crude in December 2022.
  - Following this, the discount levels offered by Russia rose over the next few months.
  - Such deep discounts on its oil was a major factor in its **increased market share in India and became a more attractive option for Indian refiners**.
  - During the **14-month period from April 2022 to May 2023**, Russia's market share surged to 24.2%, up from just 2% in the previous fiscal year.
  - **OPEC's share in India's oil imports declined dramatically from 75.3% in May 2022 to 40.3%** in May 2023, partly due to the rise in Russian oil imports.
- Savings from Discounted Russian Oil:**
  - **Indian refiners saved at least \$7.17 billion** in foreign exchange during the 14-month period ended May 2023 by buying discounted Russian oil.
- Potential Challenges for Indian Refiners:**
  - However, the **discounts have eroded considerably** in recent weeks.
  - This could **create payment problems for Indian refiners** and may make Russian oil less attractive in the coming months.

### INDIA- RUSSIA TIES: EVOLUTION OF TIES

- The roots of India-Russia relationship **can be traced back to the early 20th century**, when India was under British rule and the Tsars ruled Russia.
- The Russian Revolution of 1905** inspired Indian freedom fighters, and figures like Mahatma Gandhi and Jawaharlal Nehru were greatly influenced by the ideas emanating from Russia at that time.
- The official establishment of diplomatic relations between India and the Soviet Union was announced **even before India gained independence, on April 13, 1947**.
- The relationship between the two nations took on a **truly strategic dimension during the Cold War era**, with strong political, strategic, military, economic, and diplomatic ties.
  - The strategic partnership between India and Russia was formally initiated in October 2000 with the signing of the **"Declaration on the India-Russia Strategic Partnership."**

- After the **Dissolution of the Soviet Union**, Russia inherited the close relationship that the Soviet Union had with India, and the two countries continued to share a **Special Strategic Relation**.



- The relationship has been strengthened through various high-level visits, and in December 2010, the **Strategic Partnership was elevated to the level of a 'Special and Privileged Strategic Partnership.'**
- The foundation of the India-Russia relationship has been built on five key pillars:
  - Similar Political and Strategic Perceptions
  - Intensive Military-Technical Cooperation
  - Strong Economic Bonds
  - Deep Ties in Science and Technology
  - People-to-People and Cultural Links
- However, India-Russia relations have faced challenges, particularly in the post-Covid scenario.
  - Issues related to **Russia's close ties with China and Pakistan** have contributed to a strain in the relationship, leading to geopolitical complexities for India.

## AREAS OF COOPERATION

- Political:**
  - During the Ministerial Summits, the two nations have signed various agreements covering a wide range of sectors, including nuclear energy, railways, gems and jewellery, traditional knowledge, and cultural exchanges.
  - The 18th Annual India-Russia Summit in 2017, held in St. Petersburg, witnessed the signing of five such agreements and the 19th Annual Summit in 2018 welcomed the conclusion of a crucial contract for the supply of the **S-400 Long Range Surface to Air Missile system** to India.
  - Apart from the Annual Summits, there are regular high-level interactions through two Intergovernmental Commissions - **the one on Trade, Economic, Scientific, Technological, and Cultural Cooperation (IRIGC-TEC)** and another on **Military Technical Cooperation (IRIGC-MTC)**, that meet annually to further enhance cooperation in their respective areas.
  - Moreover, platforms like the **BRICS Summit, SCO Summit, and RIC Foreign Ministers meetings** provide opportunities for bilateral interaction, addressing regional issues, and fostering political ties.



**Economic Cooperation:**

- **Trade and Investment Goals:** Both countries aim to increase bilateral trade to US\$30 billion and investment to US\$50 billion by 2025.
- **Major Exports and Imports:** India exports pharmaceuticals, iron & steel, apparels, and more to Russia. Russia exports defence equipment, nuclear power equipment, fertilizers, and more to India.
- **Investment Flows:** Indian investments in Russia total around US\$13 billion, including energy and telecom sectors. Russian investments in India amount to about US\$16 billion, involving sectors like banking and telecom.
- **Initiatives to Facilitate Business Interaction:** A protocol was signed to simplify visa procedures for businessmen and associations. Various forums, including business councils and chambers of commerce, promote direct business-to-business ties.
- **Prospects of Free Trade Agreement:** Joint feasibility study undertaken for a Free Trade Agreement between India and the Eurasian Economic Union (EaEU).

**Defence Ties:**

- **Flagship Defence Equipment Projects:** Examples include BrahMos Missile System, Fifth Generation Fighter Aircraft, SU-30 aircraft, T-90 tanks, Ilyushin/HAL Tactical Transport Aircraft, and KA-226T utility helicopters.
- **Recent Defence Agreements:** During the 17th Annual Summit, agreements were reached for S-400 air defence systems, frigates (Project 1135), and the formation of a joint venture to manufacture Kamov-226T helicopters under '**Make in India**' initiative.
- **Major Military Hardware Purchased/Leased:** India's defence arsenal from Russia includes S-400 Triumf, Kamov Ka-226 helicopters, T-90S Bishma tanks, and INS Vikramaditya aircraft carrier.
- **Collaboration in Submarine Programs:** Russia plays a vital role in assisting India with its submarine programs, providing several conventional submarines, including **India's first submarine 'Foxtrot Class'** and support for the nuclear submarine program.
- **Bilateral Military Exercises:** Joint military exercises, including the **Tri-Services exercise 'INDRA'**, are regularly conducted, enhancing military cooperation and training.
- **India's Defence Upgrade:** India is undergoing a significant \$100 billion upgrade of its predominantly Soviet-era military equipment, highlighting the continued importance of defence relations with Russia.

**Science and Technology:**

- **Framework Agreement and MoU for Peaceful Space Use:** In 2007, India and Russia signed a framework agreement on cooperation in the peaceful uses of outer space, covering satellite launches, **GLONASS navigation, remote sensing, and societal applications** of outer space.
- **Advancing Space Programmes:** The MoU is expected to benefit India's ISRO in consolidating and enhancing its space programme, including space exploration.
- **Institutional Mechanisms for Science and Technology Cooperation:** The Working Group on Science and Technology under IRIGC-TEC, the Integrated Long Term Programme (ILTP), and the Basic Science Cooperation Programme are key institutional mechanisms for bilateral Science and Technology cooperation.
- **New Initiatives:** India-Russia Bridge to Innovation, cooperation in telemedicine, creation of a Traditional Knowledge Digital Library (TKDL), and the Russia India Network (RIN) of universities are some of the new initiatives aimed at advancing Science and Technology cooperation.

**Energy and Infrastructure:**

- **Energy Cooperation:** India is **expected to become the world's third-largest energy consumer** by 2025, and Russia plays a crucial role as a partner in the energy sector. Hydrocarbons, along with nuclear energy, are active areas for exploring cooperation between India and Russia.
- **Bilateral Investment Fund:** 2016 witnessed the creation of a **bilateral investment fund** by the National Infrastructure Investment Fund (NIIF) of India and the Russian Direct Investment Fund (RDIF). This fund aims to **facilitate high-technology investments** in both Russia and India, strengthening economic ties and fostering collaboration in various sectors.
- **North South International Transport Corridor (INSTC):** It is designed to **improve transportation links** and reduce transportation time and costs between India and Russia.

**Nuclear Energy Ties:**

- In 1988, India and the Soviet Union signed a nuclear cooperation deal, marking the beginning of their nuclear partnership.
- **Strategic Vision for Cooperation:** In 2014, the Strategic Vision for strengthening cooperation in peaceful uses of atomic energy was adopted which outlines plans for the serial construction of nuclear power units in India using Russian technology.
- **Construction of Nuclear Power Plants:** Russia has already constructed two nuclear power plants at Kudankulam in Tamil Nadu, India, in 2013 and 2016. Plans are in place for the construction of more than 12 nuclear power units in India.
- **Agreement on Localization of Nuclear Equipment:** An agreement on the localization of nuclear equipment in India was concluded in 2015 to enhance India's capacity to manufacture nuclear equipment and components domestically.

**Cyber Security:**

- **Agreement on Cooperation in International Information Security:** India and Russia have an "Agreement on cooperation in International Information Security," which signifies their commitment to work together in the realm of cyber security.
- **Combatting Radicalization and Cyber Terrorism:** Both countries have been actively working on closer coordination to combat radicalization and cyber terrorism facilitated through social media platforms by groups like the **Islamic State (IS)**, as well as Pakistan-based outfits like Lashkar-e-Taiba (LeT), Hizbul Mujahideen, and Jaish-e-Mohammed.
- **Collaboration with Russian Quantum Center (RQC):** RQC plans to provide 'quantum cryptography,' a cutting-edge technology that can significantly bolster information security in sectors like banking, national security, and homeland security.
  - ✓ Quantum cryptography **relies on the principles of quantum mechanics** and the intrinsic properties of individual particles or waves of light (photons) to develop an unbreakable cryptosystem, making it highly secure against hacking attempts.

**Terrorism:**

- "**The Agreement on Cooperation in Combating Terrorism and Organised Crime**" signed in 2017 is a step towards consolidating the benefits accrued in field of security and seeks to jointly fight the new and evolving risks and threats.
- The Agreement would reinforce relationship between India and Russia through exchange and sharing of information, expertise and best practices, and would help in curbing terrorism and enhancing security in the region.
- ✓ Russia supports India in combating terrorism and backs India's proposal of **Comprehensive Convention on International Terrorism (CCIT)**.

## CHALLENGES IN INDIA-RUSSIA RELATIONS

01

**Economic Challenges:** The high trade deficit between India and Russia is a major challenge. Russia's regulatory impediments, phytosanitary standards, and non-tariff barriers have further worsened the situation.

02

**Regional Tensions:** Russia has maintained close ties with India's regional adversaries such as China and Pakistan. This has caused some discomfort in India-Russia relationship.

03

**Defence Challenges:** India's defence modernization and diversification efforts require it to reduce its dependence on Russian defence supplies. This could strain the defence ties between the two countries.

04

**Changing World Order:** The shift towards a bipolar world due to the USA-China rivalry goes against India-Russia's vision of a multipolar world. This could lead to a divergence in their strategic interests.

05

**Expanding Geo-strategic Interests:** As India's geo-strategic interests expand beyond the Indian Ocean and South Asia, it is partnering with countries that have strained relations with Russia. This could potentially affect the strategic partnership between India and Russia.

06

**Natural inclination towards West:** India's democratic set-up and its affinity towards the West, particularly the USA and major European nations, pose a challenge to India-Russia relationship.

## INDIA-UAE RELATIONS

### CONTEXT

India and the UAE have set a target to increase the non-oil trade from USD 48 billion to USD 100 billion by 2030.

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- In the first meeting of the **Joint Committee of the India-UAE Comprehensive Economic Partnership Agreement (CEPA)** that took place recently, the target of achieving USD 100 billion in bilateral trade by 2030 was set.
  - The CEPA which **was implemented on May 1 2022**, aims to **promote economic cooperation and enhance trade relations** between India and the UAE.
  - It focuses **on expanding non-oil sectors of trade**, indicating that the target of USD 100 billion will not include oil trade.
- To facilitate the implementation of the agreement and address various trade-related issues, several sub-committees and councils will be established.
- One such sub-committee will **specifically handle matters pertaining to services trade**.
- Additionally, **an India-UAE CEPA council** will be set up to further streamline and support the implementation of the agreement.

#### India-UAE Comprehensive Economic Partnership Agreement (CEPA) Trade Deal

The India-UAE Comprehensive Economic Partnership Agreement (CEPA) trade deal aims to strengthen economic ties between the two countries by enhancing bilateral trade, promoting investment, and expanding cooperation in various sectors.

##### Objectives of the Trade Deal:

- Enhanced Market Access:** The CEPA trade deal seeks to provide significant benefits to businesses in both India and the UAE, including improved market access and reduced tariffs. It aims to facilitate increased trade in goods and services between the two countries.
- Digital Trade Cooperation:** The agreement includes a digital trade element, which is a first of its kind for both nations. It aims to foster cooperation on digital trade, covering areas such as paperless trading, digital payments, online consumer protection, intellectual property rights, and challenges faced by small and medium enterprises.
- Strengthening Economic Cooperation:** The CEPA is expected to create new jobs, raise living standards, and provide wider social and economic opportunities in both nations. It also envisions advancing the collective interests of India, Israel, the UAE, and the United States by opening new routes for regional trade and connectivity.

##### Significance of the India-UAE CEPA Trade Deal:

- Bilateral Trade Expansion:** The objective is to increase trade in goods to \$100 billion and trade in services to \$15 billion within five years of signing the agreement, contributing to the growth of both economies.
- Access to West Asian and African Markets:** Deepening the relationship with the UAE is anticipated to benefit Indian exporters by providing access to other West Asian countries, Africa, and parts of Europe. Indian goods can flow to **other Gulf Cooperation Council (GCC)** countries as the UAE has no customs barriers.
- Energy Cooperation:** The UAE is a major supplier of crude oil, LPG, and LNG to India. The CEPA trade deal is expected to further strengthen bilateral energy ties and explore opportunities for cooperation in renewable energy.
- Job Creation:** The trade deal has the potential to create new employment opportunities, improve living standards, and generate broader social and economic benefits for both countries.

##### Challenges of the India-UAE CEPA Trade Deal:

- Lack of Negotiations:** Negotiations for a free trade agreement with the Gulf Cooperation Council (GCC) countries, including the UAE, were initiated in 2007 but got stuck after a few rounds. This lack of progress poses a challenge in realizing the full potential of trade agreements and deeper economic integration.
- Capacity of Indian Businesses:** Indian businesses, despite being part of a \$2.5 trillion economy, are relatively small in size compared to global conglomerates. The capacity, infrastructure, and experience required to handle substantial investments may be lacking, hindering the realization of the full benefits of the trade deal.
- Procedural and Bureaucratic Challenges:** Challenges such as lack of planning, incomplete information, and bureaucratic bottlenecks continue to pose hurdles for foreign investors, despite government efforts to improve the ease of doing business.
- Legal Issues:** Past legal problems have dampened foreign investments in India, leading to concerns for potential investors. While regulations and checks are necessary, better streamlining of procedures and processes can help avoid such issues.

## INDIA-UAE TIES

India and United Arab Emirates (UAE) enjoy strong bonds of friendship based on age-old cultural, religious and economic ties between the two nations. The relationship flourished after the accession of H.H. Sheikh Zayed Bin Sultan Al Nahyan as the Ruler of Abu Dhabi in 1966 and subsequently with the creation of the UAE Federation in 1971. Since then, both sides have made sincere efforts to improve relations in all fields.

The UAE holds significant importance for India in its “Look East” and “Look West” policies in the following aspects:

- Look East Policy:** As the UAE looks eastward to expand its economic growth, it finds India as a natural partner due to its rapidly growing economy, large consumer market, and skilled workforce.
- Look West Policy:** The UAE is equally important for India in its Look West Policy, which aims to deepen ties with countries in West Asia. India's political and diplomatic engagements with the UAE have significantly increased in recent times, and the two countries have established a strategic partnership. The UAE serves as a willing partner for India in its efforts to enhance economic engagement and security cooperation in the Gulf region. With the UAE's “Look East” approach aligning with India's Look West Policy, the two countries find mutual benefits in expanding trade, investment, and security collaboration. The UAE's geographic location, stability, and status as a major economic and financial hub in the region make it a key player in India's West Asia policy.

## AREAS OF COOPERATION

India and the UAE have cooperated in various areas to strengthen their bilateral relations.

- Political and Diplomatic Relations:** India and the UAE have established a comprehensive strategic partnership, leading to high-level visits and engagements. This includes the historic visit of the Indian Prime Minister to the UAE in 2015, which marked the beginning of a new strategic partnership. The UAE's Crown Prince also visited India in 2017. The two countries have institutionalized their political and diplomatic engagements through mechanisms like the UAE-India Strategic Dialogue.
- Trade and Investment:** The UAE is India's third-largest trade partner and second-largest export destination. Bilateral trade reached approximately USD 72 billion in the fiscal year 2021-22. The UAE has made substantial investments in India, with sectors such as construction development, power, air transport, tourism, and metallurgical industries receiving significant investment.
- Energy Cooperation:** Indian oil companies have been granted a 10 percent participating interest in the Lower Zakum offshore oil field. Additionally, the UAE has participated in operationalizing India's strategic oil reserve in Mangalore. These initiatives have transformed the traditional buyer-seller relationship into a long-term investor relationship.
- Security and Counterterrorism:** India and the UAE have enhanced cooperation in countering terrorism, combating radicalization, and preventing terror financing. Both countries view each other as important partners in maintaining peace and stability in their respective regions. Intelligence sharing, joint exercises, and naval cooperation have been undertaken to strengthen security ties.
  - Desert Eagle II, a ten day air combat exercise, was held between the air forces of India and UAE.
  - The maiden bilateral naval exercise 'Gulf Star 1' took place in March 2018.
- Culture and Diaspora:** The cultural agreement signed in 1975 has facilitated cultural exchanges between India and the UAE. The UAE hosts a significant Indian diaspora, with approximately 3.4 million Indian expatriates residing there. The two countries have collaborated to develop efficient grievance-redressal mechanisms for Indian workers in the UAE.
- Technology Partnerships:** India and the UAE have signed agreements and partnerships in digital innovation and technology. Collaborations between the Indian Space Research Organisation (ISRO) and the UAE Space Agency (UAESA) have been established. The UAE has offered residency permits to experts in high-end technology fields, further promoting technology cooperation.

## CHALLENGES IN INDIA-UAE RELATIONS

- Slow implementation of investments:** The establishment of a \$75 billion investment fund by the UAE for infrastructure projects in India, announced in 2015, has faced delays in finalizing the modalities and governance structure. This slow implementation hampers the realization of investment commitments.
- Lack of clarity and transparency:** Indian companies operating in the UAE often face challenges due to a lack of clarity in commercial regulations and labor laws. Additionally, a lack of transparency on the part of Emirati businesses adds to the difficulties faced by Indian companies.

- Issues concerning the Indian diaspora:** Indian migrants in the UAE face cumbersome and strict regulations, particularly in relation to Emirati employers. Problems such as favouritism towards workers of other nationalities and a slight drop in remittances inflow from the UAE to India have been observed.
- Influence of the Pakistan factor:** Historical and civilizational ties between India and the Gulf region are strained due to the influence of the Pakistan factor. Political relations are affected by tensions between India and Pakistan, which impact India's relations with countries in the region.
- Balancing geopolitics:** India's relations with Iran and the UAE's relations with China create a dynamic where geopolitical considerations can sometimes challenge the bilateral relationship between India and the UAE.
- Energy pricing disagreements:** As an OPEC country, the UAE has a different perspective on energy pricing compared to India, a major oil consumer. Disagreements over energy pricing, including India's call for a cap on prices, have led to heated exchanges between oil ministers in the past.
- Air services agreement:** India and the UAE have yet to renegotiate their air services agreement. The UAE seeks to increase the number of flights and destinations to India, while India maintains certain caps to protect its domestic airlines. This issue has been a source of contention between the two countries.

Addressing these challenges through dialogue, negotiation, and mutual understanding will be essential to further strengthen and deepen the India-UAE relationship.

## INDIA-CHINA RELATIONS

### CONTEXT

India criticized China for issuing "stapled visas" to some sportspersons hailing from Arunachal Pradesh, and described the move as "unacceptable".

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- A stapled visa is a visa that is **not stamped directly into the passport** of the applicant, but instead is **attached to the passport with a staple**.
- China's move to issue such a visa is due to its **long-held stand that Arunachal is part of its territory**, a claim that India has rejected repeatedly.
- The athletes were part of the 12-member team bound for the **World University Games in Chengdu** of China. As a result of China's move, the team was held back.
- China's decision to give stapled visas to the athletes is a **reversion to its actions in 2011-2013**, when it began to issue stapled visas to Indians **from Jammu and Kashmir** (then including Ladakh) and **Arunachal Pradesh**.

### EVOLUTION OF INDIA-CHINA TIES

The evolution of India-China relations has **been complex** and has gone through **various phases** since their independence.

- Early Years (1950s-1960s):**
  - After India's independence in 1947, the leaders of both India and China, Jawaharlal Nehru and Mao Zedong, envisioned a close friendship based on **shared historical and anti-colonial sentiments**.
  - In 1950, India recognized the People's Republic of China and **established diplomatic relations**.
  - The two countries signed the **Panchsheel Agreement in 1954**, emphasizing peaceful coexistence and non-interference in each other's internal affairs.
  - However, **border disputes over the region of Tibet** escalated tensions, leading to the Sino-Indian War in 1962, which China won decisively.
- Strategic Distance (1970s-1980s):**
  - After the war, India and China had **minimal diplomatic and trade relations**, and mistrust prevailed.
  - **India's growing proximity with the Soviet Union** and China's rivalry with the USSR further strained the relationship.
  - In 1978, **Deng Xiaoping's economic reforms in China** initiated a period of economic growth and openness, paving the way for improved relations.

**Efforts for Normalization (1980s):**

- In the 1980s, both countries sought to normalize relations through **diplomatic engagement** and **confidence-building measures**.
- In 1988, **Indian Prime Minister Rajiv Gandhi visited China**, marking a significant step in improving ties.
- The two sides signed agreements to maintain peace and tranquility along the disputed border, leading to the establishment of the **Working Mechanism for Consultation and Coordination (WMCC) in 2012**.

**Post-Cold War Era (1990s onwards):**

- With the end of the Cold War, both India and China aimed to develop a **more cooperative relationship**.
- **Economic engagement** became a central pillar of their engagement, with trade and investment increasing significantly.
- In 2003, the two countries agreed on the formation of the **Special Representatives mechanism** to address the boundary question.
- **However, border disputes**, particularly over the regions of Aksai Chin and Arunachal Pradesh, persisted and occasionally led to military standoffs.

**Recent Developments:** In recent years, India-China relations have faced significant challenges.

- **The Doklam standoff in 2017**, where Indian and Chinese troops faced off in the disputed Doklam plateau, strained ties.
- The deadliest clash in decades occurred in June 2020 in the **Galwan Valley**, resulting in casualties on both sides.

### AREAS OF COOPERATION BETWEEN INDIA AND CHINA

<b>Political Cooperation</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Establishment of Diplomatic Relations: India became the first non-socialist bloc country to establish diplomatic relations with the People's Republic of China in 1950.</li> <li><input type="checkbox"/> High-Level Visits: Exchange of visits by top leaders, such as Prime Minister Rajiv Gandhi's visit in 1988 and Prime Minister Narendra Modi's visits in 2014, 2015, and 2018, have contributed to improving bilateral relations.</li> <li><input type="checkbox"/> Dialogue Mechanisms: Both countries have established various dialogue mechanisms at different levels to discuss political, economic, consular, and regional issues.</li> </ul>
<b>Economic Cooperation</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Bilateral Trade: Bilateral trade between India and China has grown significantly, reaching US\$100 billion by 2022. Both countries have expanded economic ties, with India becoming one of the largest markets for "project exports" from China.</li> <li><input type="checkbox"/> Investments: Chinese investments in India and Indian investments in China have been increasing, particularly in sectors like IT, pharmaceuticals, and automobiles.</li> <li><input type="checkbox"/> Economic Potential: With a combined market of over 2.7 billion people and a GDP representing 20% of the world's total, there is immense potential for further economic cooperation between India and China.</li> </ul>
<b>Science and Technology Cooperation</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Joint Research Workshops: Both countries have organized joint research workshops to foster collaboration and innovation in the field of science and technology.</li> <li><input type="checkbox"/> IT Corridors: Indian companies have established IT corridors in China, promoting cooperation in information technology and high-tech sectors.</li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Cultural Exchanges: India and China have a long history of cultural exchanges dating back centuries. Cultural events, performances, and agreements to establish institutions like the Yoga College in China reflect the cultural cooperation between the two countries.</li> <li><input type="checkbox"/> Educational Cooperation: The education sector has witnessed cooperation, with an increasing number of Indian students studying in Chinese universities and Chinese students studying in Indian educational institutions.</li> <li><input type="checkbox"/> People-to-People Exchanges: Mechanisms like the China-India High-Level People-to-People and Cultural Exchanges Mechanism facilitate exchanges and cooperation in various fields, including art, media, sports, tourism, traditional medicine, and think tanks.</li> <li><input type="checkbox"/> Defence Cooperation: While defence cooperation remains relatively low, joint military exercises like 'Hand in Hand' have been conducted to enhance mutual understanding and counterterrorism capabilities.</li> </ul>

Multilateral Cooperation	<p><input type="checkbox"/> India and China are part of several multilateral forums such as:</p> <ul style="list-style-type: none"><li>- BRICS (Brazil, Russia, India, China, South Africa): India and China are both members of BRICS, a formal grouping of emerging economies.</li><li>- Shanghai Cooperation Organisation (SCO): Both India and China became members of the SCO in 2017. The SCO focuses on security, geopolitics, and economic cooperation among its member states.</li><li>- Russia-India-China Trilateral (RIC): The RIC platform brings together Russia, India, and China to facilitate common positions on global challenges, discuss radical ideas, counter terrorism threats, and address issues related to Afghanistan and West Asia.</li><li>- Asian Infrastructure Investment Bank (AIIB): Both India and China are founding members of the AIIB, a multilateral development bank that aims to address infrastructure needs in Asia.</li><li>- World Trade Organisation (WTO): India and China have collaborated within the WTO framework on various issues related to trade and agriculture.</li><li>- BASIC (Brazil, South Africa, India, China): The BASIC countries, including India and China, have come together to address environmental issues, particularly in the context of climate change.</li></ul>
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## SEVERAL CHALLENGES IN INDIA-CHINA TIES

- Border Disputes:**
  - **Western Sector:** The Aksai Chin region is a territorial dispute where both countries claim it as part of their own territory.
  - **Middle Sector:** China stakes claim over an area in Uttarakhand, creating a border dispute.
  - **Eastern Sector:** The McMahon Line, the boundary between India and Tibet, is disputed by China.
  - **Johnson Line vs. McDonald Line:** India and China hold different positions on the demarcation of the border.
- String of Pearls:** China's strategic presence and infrastructure development in various countries surrounding India, such as Sri Lanka, Pakistan, the Maldives, Bangladesh, and Myanmar, raise concerns about encirclement.
- Water Dispute:** China's construction of dams in the upper reaches of the Brahmaputra River (Tsangpo) without a formal water-sharing treaty poses a threat to India, leading to concerns over water availability and flooding.
- Dalai Lama and Tibet:** China accuses India of fomenting trouble in Tibet due to the presence of the Dalai Lama and protests staged by Tibetans against China in India and other countries.
- Arunachal Pradesh and Stapled Visa:** China issuing stapled visas to residents of Arunachal Pradesh questions India's sovereignty and territorial integrity.
- Bhutan and Nepal:** China criticizes India's role and relationship with Bhutan and Nepal, attempting to influence their ties and play the "China card" against India.
- Belt and Road Initiative:** India opposes China's Belt and Road Initiative (BRI), particularly the China-Pakistan Economic Corridor (CPEC), which passes through Indian territory claimed by Pakistan.
- China-Pakistan Nexus:** China's support to Pakistan in military, nuclear, and missile capabilities, along with blocking India's efforts at the UN, creates concerns for India's security.
- Indian Ocean Region:** China's increasing presence, including military outposts, port acquisitions, and economic influence in countries like Sri Lanka, Bangladesh, and Myanmar, raises concerns for India's traditional influence in the region.
- South China Sea:** China's territorial claims in the South China Sea, contested by neighboring countries, pose concerns for freedom of navigation and stability in the region, which affects India's strategic interests.
- Doklam Standoff:** The Doklam/Doka La region dispute between China and Bhutan, with India's military and diplomatic support to Bhutan, has led to tensions in the area.
- Galwan Valley Standoff:** The deadly clash between Indian and Chinese troops in the Galwan Valley, resulting in casualties, highlights the ongoing border tensions and the need for de-escalation efforts.

## CONCLUSION

The problem in India-China relations is the lack mutual awareness, understanding, and trust. The future of Sino-Indian relations lies in the cooperative working with each other. Under the present circumstances, India-China relations have acquired strategic importance in a world of uncertainty. The way forward for them is to approach the problem pragmatically and positively, with cooperation and mutual understanding.

## THE GLOBAL SOUTH - ORIGINS AND SIGNIFICANCE

### CONTEXT

As many leading countries in Africa, Asia, and Latin America have refused to stand with NATO over the war in Ukraine, the term “Global South” has once again in spotlight.

### WHAT IS THE GLOBAL SOUTH?

- The term “Global South” refers to countries that are often described as ‘developing’, ‘less developed’, or ‘underdeveloped’.
- It encompasses countries in **Africa, Asia, and Latin America**, which are characterized by higher levels of poverty, income inequality, and harsh living conditions compared to the “Global North”.
  - ‘Global North’ refers to the **developed countries** like the US, Canada, Europe, Russia, Australia and New Zealand.



### ORIGIN OF THE CONCEPT OF GLOBAL SOUTH

- The term Global South was first used in **1969** by political activist **Carl Oglesby**, who argued that the **war in Vietnam** was the culmination of a history of northern “dominance over the global south.”
- But it was only after the **1991 breakup of the Soviet Union** — which marked the **end of the so-called “Second World”** — that the term gained momentum.
  - The three-world analogy was first coined by a French demographer **Alfred Sauvy in 1952**.
  - **First World:** Referred to the advanced capitalist nations;
  - **Second World:** Referred to the socialist nations led by the Soviet Union; and
  - **Third World:** Referred to developing nations, many at the time still under the colonial influence.
- With the **fall of the Soviet Union**, which marked the end of ‘Second World’ — resulted in the **decline of the usage of the term ‘Third World’ too**.
- Additionally, **criticisms** arose regarding the **negative connotations** associated with the term “Third World,” which often portrayed developing nations as impoverished, unstable, and underdeveloped.
- To address these concerns and provide a **more neutral and inclusive terminology**, the term “Global South” emerged.
- The **Brandt Line** is a visual representation of the **division between the Global North and the Global South** based on **economic disparities**.
  - It was proposed by the **German statesman Willy Brandt** in the **1980s** and gained significant attention.

### IMPORTANT CHARACTERISTICS OF THE GLOBAL SOUTH

- **Geopolitical, not geographical:** The term ‘Global South’ is not geographical. In fact, the Global South’s two largest countries — China and India — lie entirely in the Northern Hemisphere. Rather, its usage denotes a mix of political, geopolitical and economic commonalities between nations.
- **Colonial legacy:** Countries in the Global South were mostly at the receiving end of imperialism and colonial rule, with African countries as perhaps the most visible example of this.
- **Economic challenges:** Many Global South countries face economic disparities, poverty, and a lack of infrastructure etc.
- **Non-alignment and diverse alliances:** Due to their historical experiences and the imbalanced relationships with the Global North, countries in the Global South often prefer not to align themselves strongly with any single global power. They may form alliances or pursue independent foreign policies based on their own interests.

### SIGNIFICANCE OF THE GLOBAL SOUTH

- **Resource rich:** ‘Global South’ is significant because of its large population, rich cultures, and abundant natural resources.

- **Growing Economic Might:** The economic prowess of the Global South has been increasing rapidly.
  - By 2030 it is projected that **three of the four largest economies** will be from the Global South, with the order being China, India, the U.S. and Indonesia.
  - Already the **GDP in terms of purchasing power** of the Global South-dominated BRICS nations — Brazil, Russia, India, China and South Africa — surpasses that of the Global North's G-7 club. And there are now more billionaires in Beijing than in New York City.
- **Increasing Political Visibility:** This economic shift has gone hand in hand with enhanced political visibility.
  - Countries in the Global South are increasingly asserting themselves on the global scene — be it **China's brokering of Iran and Saudi Arabia's peace deal** or **Brazil's attempt to push a peace plan to end the war in Ukraine**.

### SEVERAL CONCERNs WITHIN THE GLOBAL SOUTH

- **Economic Inequality:** Many countries in the Global South still struggle with poverty and economic inequality, which can make it difficult to implement development initiatives.
- **Political Instability:** Political instability in many countries in the Global South can make it difficult to implement long-term development plans and can also create a hostile environment for foreign investment.
- **Climate Change:** Climate change is a growing concern in many countries in the Global South, as it can exacerbate existing poverty and inequality and create new challenges for development.
- **Lack of Infrastructure:** Many countries in the Global South lack basic infrastructure, such as roads, ports, and power, which can make it difficult to attract foreign investment and promote economic growth.
- **Limited Human Capacity:** Lack of skilled human resources and lack of education is one of the main challenges for development in the global south.

### INITIATIVES FOR THE SOUTH-SOUTH COOPERATION

- **BRICS Forum:** BRICS is an association of five major emerging economies that includes Brazil, Russia, India, China, and South Africa. The forum promotes economic cooperation, political dialogue, and mutual support among its member countries.
- **India, Brazil, and South Africa (IBSA) Forum:** It aims to promote cooperation in various areas, including agriculture, trade, investment, science and technology, education, and social development.
- **Group of 77 (G77):** The G77 is a coalition of developing countries at the United Nations. The group promotes the interests and priorities of its member countries, particularly those in the Global South.
- **International Day for South-South Cooperation:** The United Nations observes the International Day for South-South Cooperation on September 12th each year. It commemorates the adoption of a plan of action by the United Nations General Assembly in 1978 to promote technical cooperation among developing countries.

### INDIA AS THE VOICE OF GLOBAL SOUTH

- **Historical Perspective:** India's own history of colonialism and struggle for independence gives it a deep understanding of the challenges faced by countries in the Global South.
- **Economic Growth and Development:** As one of the fastest-growing major economies, India's success story can serve as an inspiration for other developing countries.
- **Multilateral Engagement:** India actively participates in various international forums, including the United Nations, G20, BRICS, and IBSA, where it can articulate the concerns and priorities of the Global South.
- **South-South Cooperation:** India has been a strong proponent of South-South cooperation, emphasizing the importance of collaboration and mutual assistance among developing countries.
- **Bridge between North and South:** India's foreign policy objective of bridging the gap between the Global North and the Global South positions it as a potential mediator and facilitator of dialogue.

## ECONOMICS

### INDIA AS A SEMICONDUCTOR HUB

#### CONTEXT

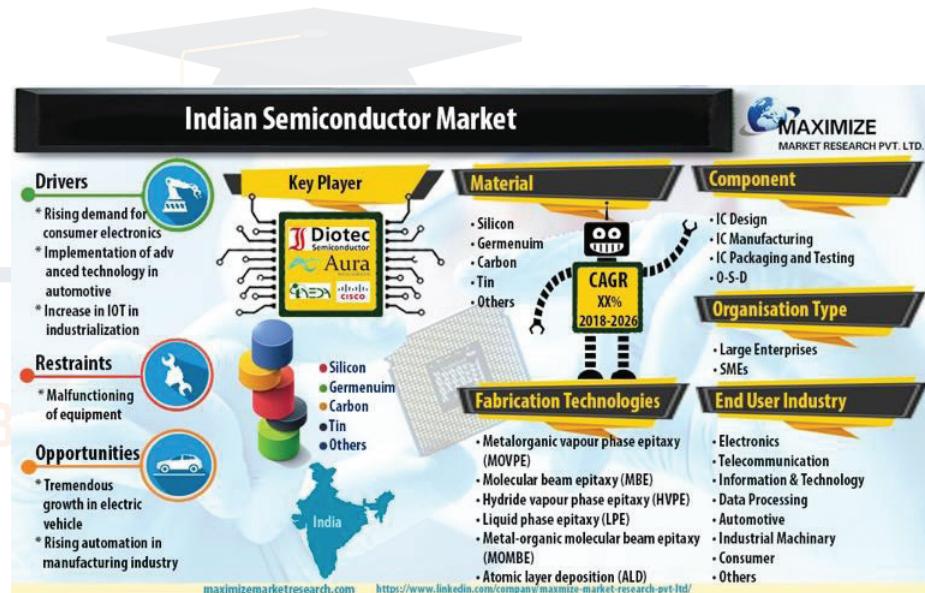
The Prime Minister inaugurated the '**Semicon India 2023**' conclave in Gujarat recently.

#### MORE ON NEWS

- The Indian government is actively working to attract global players in the semiconductor industry to set up their plants and supply chain networks in the country by offering **policy reforms, tax incentives, and other favorable conditions** for companies interested in establishing factories in India.
- **Advanced Micro Devices (AMD)**, a U.S. chipmaker, announced plans to invest around **\$400 million in India over the next five years** and build its largest design center in Bengaluru, a major tech hub in India.
- India has **shown significant progress in the electronic manufacturing sector**, with substantial growth from **\$30 billion to over \$100 billion**.
- The country has also witnessed rising electronic manufacturing exports and the establishment of more than **200 mobile manufacturing units**.

#### ABOUT SEMICONDUCTORS

- Semiconductors are the **thumbnail-sized building blocks** of almost every modern electronic device from smartphones to **connected devices in the Internet of Things (IoT)**.
- It contains **millions of transistors packed onto a few millimeters of silicon** (the semiconductor).
- Semiconductors allow **electronics to function and operate**, as well as make computations. That makes them vital for modern electronics.
- Semiconductors are **highly complex products to design and manufacture**. They require a high level of investment in both **R&D and capital expenditure**.
- **India's potential:** India's consumption of semiconductors is expected to cross \$80 billion by 2026 and is expected to reach \$110 billion by 2030.
- **The global semiconductor industry:** The global semiconductor industry is currently valued at \$500-\$600 billion and caters to the global electronics industry currently valued at about \$3 trillion.
  - **Taiwan accounts for 92% of the world's** most advanced semiconductor manufacturing capacity, while the Netherlands is the only country that produces chip-making machines and South Korea is one of the largest chip manufacturers.



#### NEED FOR SEMICONDUCTOR MANUFACTURING IN INDIA

- **Reducing imports:** Taiwan, Singapore, Hong Kong, Thailand, and Vietnam are the only countries from which India imports all of its chips.
- **AtmaNirbharta:** India's semiconductor industry would benefit domestic businesses by reducing their reliance on imports and by generating income from exports to other nations.
- **Drivers of ICT Development:** India has to grow its **ICT (Information and Communications Technology) industry** in order to take advantage of the fourth industrial revolution. Semiconductors are crucial to this process.

- National Security:** They are employed in vital infrastructures that affect national security, including **transmission of power and communications**.
- Strategic Autonomy:** By reducing India's reliance on other nations for essential technology, domestic semiconductor manufacture can increase the **country's strategic independence and lessen its susceptibility to supply chain disruptions**.
- Development of the semiconductor and display ecosystem** will have a multiplier effect on several economic sectors as it becomes more deeply integrated into the global value chain.
  - The modern **information age runs on semiconductor chips**. They make it possible for electrical devices to compute and control operations that make our lives simpler.

### CHALLENGES IN SEMICONDUCTOR MANUFACTURING IN INDIA

- Complex value chain:** The chip design component is highly dependent on Research and Development (R&D) and Intellectual Property (IP) protection, and hence extremely expensive.
- Requires Huge investment:** Semiconductor manufacturing is a complex, capital and technology intensive process.
- Lack of cutting-edge technology:** India focuses on "lagging-edge" technology nodes in the start to supply to the automotive and appliance sector.
- Raw materials:** Semiconductor fabrication requires specific raw materials such as silicon, germanium, gallium arsenide, as well as chemicals and gases, that need to be imported.
- Lack of uninterrupted power and water supply:** Manufacturing a single chip requires hundreds of gallons of pure water, which is both difficult and unsustainable for India.
- Global Competition:** The United States of America also passed the CHIPS Act last August, providing subsidies of around \$280 billion for manufacturing chips in the country. It has also imposed additional restrictions and sanctions on the Chinese semiconductor industry.
- Other Issues:** Lack of long-term stable policies, constant price pressure from other global players, ever-changing innovations and rapid changes in technology etc.

### CAN INDIA BECOME A SEMICONDUCTOR MANUFACTURING HUB?

- Currently all of the **world's most advanced semiconductor manufacturing capacity**—in nodes below 10 nanometers—is currently concentrated in just two countries: South Korea (8%) and Taiwan (92%).
- Skilled Labour:** It requires highly skilled labour as the production of semiconductors as the fabrication process is intricate, involves 400- 1400 complex steps and requires highly specialized inputs like commodity chemicals, specialty chemicals as well as many different types of processing and testing equipment and tools, across a number of stages. For the process, the company requires highly skilled labour.
  - The production of semiconductor chips has to be done in clean areas as contaminated air particles could alter **the properties of the materials that form the electronic circuits**.
- Huge capital investment:** Manufacturing of semiconductor chips requires huge investments. Also, since the designs of chips change quite rapidly, these companies always have to invest in acquiring newer technologies to produce the chips.
  - For instance, the **market leader in the industry, TSMC has announced** that it will invest \$100 billion in its fabrication plants over the next three years.

### THE REASONS FOR BUILDING SEMICONDUCTOR MANUFACTURING IN INDIA

#### DEPENDENCE

Lack Of High-Tech Semiconductor Manufacturing Infrastructure Is Making India More Dependent, And In The Long-Term This Can Have Negative Impact.

#### OPTION

Building Semiconductor Manufacturing In India Provides The World With An Option To Diversify The Worldwide Semiconductor Supply Chain.

#### TALENT

Building In-Country Semiconductor Manufacturing Infrastructure Will Bring New Opportunities For Already Highly Skilled Talent In India.

### THE HURDLES IN BUILDING SEMICONDUCTOR MANUFACTURING IN INDIA

#### PARTNERSHIP

Lack Of Strategic Private-Public Partnership Coupled With Slow Decision-Making Process Has Impacted India's Dream Of Building Semiconductor Manufacturing Infrastructure.

#### INVESTMENT

Investment Is Key To Building Semiconductor Manufacturing Infrastructure And So Far, India Has Not Been Able To Attract Big-Ticket Investment From Top Semiconductor Manufacturers.

#### RESOURCES

Building Semiconductor Manufacturing Infrastructure Also Demands Semiconductor Supply-Chain And Ecosystem, Both Of Which India Lacks And Needs To Build It From Scratch.

## **GOVERNMENT ACTION TO BOOST SEMICONDUCTOR MANUFACTURING IN INDIA**

- India has identified electronics manufacturing as a key sector to boost its growth in the coming years by producing goods not just for the domestic market, but also for exporting to the world.
- Production-Linked Incentives to Attract Electronics Manufacturers**
  - The government of India approved a \$10 billion incentive plan.
  - The product linked incentive plan aims to attract chip and display industries to the country, with the goal of making India a major hub for electronics manufacturing.
  - The plan is also aimed at reducing reliance on supplies from China, with which India has tense relations.
  - It provides uniform fiscal support of 50 per cent of project cost for semiconductor fabs across technology nodes and display manufacturing.
- Semicon India Programme:** To foster the growth of the semiconductor and display manufacturing ecosystem in the country.
  - It aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystems.
- India Semiconductor Mission (ISM):** It has been setup as an Independent Business Division within Digital India Corporation to drive long-term strategies for semiconductor design ecosystem in the country
- Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECs):** It provides a financial incentive to boost domestic manufacturing and attract large investments in the electronics value chain including electronic components and semiconductors.
- Modified Special Incentive Package Scheme (M-SIPS):** M-SIPS provides financial incentives for setting up new semiconductor manufacturing units in the country. Under the scheme, companies can get a subsidy of up to 25% of their capital expenditure.
- SEWFAP:** Semiconductor Wafer FAB Acquisition Program (SEWFAP) provides financial assistance to Indian companies for acquiring **semiconductor fabrication facilities (fabs)** outside India.

## **WAY FORWARD**

- Robust Policy:** Foundry establishment requires a significant investment in capital, it must be backed by a sound long-term strategy and adequate funding. Both the government and the entrepreneur must provide this support.
- Fiscal support:** Tax holidays, subsidies, zero-duty policies, financial investments, etc., will be crucial in boosting the Fab and the semiconductor sector in India.
- Infrastructure Support:** A modern Fab needs to have access to world-class, sustainable infrastructure that includes things like quick transit, a lot of clean water, consistent electricity, communication, a clean environment, etc.

## **THE SEMICONDUCTOR MANUFACTURING ROAD MAP FOR INDIA**

### **COLLABORATION**

Multiple Small Companies Collaborating To Form JV To Fund And Drive Development Of Semiconductor Fabrication To Assembly.

### **CLUSTER APPROACH**

Dedicated Cluster With Large Semiconductor Manufacturing FABs That Cater To Different Industries.

### **OSAT TO SUPPORT FAB**

Slowly Creating Network Of Small OSATs That Can Drive The Testing And Assembly Requirements.

### **COUNTRY SPECIFIC FAB**

Focusing On Semiconductor Fabrication Technology That Is Affordable To Build And Is Also High On Demand.

### **PRIVATE PLAYERS**

Investment From Private Players By Taking Advantage Of Government Incentives And Schemes.



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## INDIA'S GREEN HYDROGEN ECOSYSTEM

### CONTEXT

The Ministry of New and Renewable Energy (MNRE) has published the **Draft R&D Roadmap for Green Hydrogen Ecosystem in India**.

### ABOUT THE DRAFT ROADMAP FOR GREEN HYDROGEN ECOSYSTEM IN INDIA

- The roadmap aims to address the **challenges and cost effectiveness** of the green hydrogen production ecosystem including its **storage and transportation**.
- It recommends **research and development** actions for each part of the **Green Hydrogen value chain**. And it is expected that this draft roadmap **would serve as a guidance** for developing a vibrant Green Hydrogen Ecosystem in India.
- The draft proposes **3 key approaches for R&D in Green Hydrogen**:
  - **Blue Sky Projects** (long term strategy for Intellectual Property),
  - **Mission Mode approach** for Electrolysers and **Grand Challenge** to encourage startups.
- **Green Hydrogen Production:** It can be produced by Bio-Photolysis, Dark Fermentation, Electrolysis, photoelectrochemical water splitting, etc.
- **Efficient and Safe Storage Solutions:**
  - **Large-scale storage** can be achieved through underground storage in geological structures like salt caverns, depleted oil and gas reservoirs, and aquifers.
  - **Small quantities** can be stored either in liquified, compressed or solid-state storage.
- **Hydrogen transport:**
  - **Gaseous transport:** Compressed hydrogen moved in pipelines or in tanks.
  - **Liquid transport:** Liquefied hydrogen transported in cryogenic containers.
  - **Solid transport:** Absorbed as metal hydride and transported in solid form then later released by desorption process.
  - **Chemical Conversion:** Hydrogen is converted into methanol, ammonia, or synthetic natural gas (SNG) and transported.

### ABOUT HYDROGEN

- It is a **colorless, odourless, tasteless, non-toxic** and **highly combustible** gaseous substance.
- Also, it is the **lightest, simplest** and **most abundant** member of the family of chemical elements in the universe.
- While hydrogen is **not typically found** in its **pure form on Earth**, it is commonly found in **compounds such as water (H<sub>2</sub>O)** and **hydrocarbons**.

### WHAT IS GREEN HYDROGEN?

- Depending on the **type of production used**, **different colours** are assigned to the hydrogen.
- Green hydrogen is produced by **renewable energy** through **electrolysis of water**. Electrolyser technology is central to the green hydrogen production process.
  - Electrolysis involves the **splitting of water (H<sub>2</sub>O)** into its constituent elements, **hydrogen (H<sub>2</sub>)** and **oxygen (O<sub>2</sub>)**, using an electric current.
- **Commercially available technologies for green hydrogen production:**
  - **Alkaline Electrolyzers:** Alkaline electrolyzers operate via transport of hydroxide ions (OH<sup>-</sup>) through the electrolyte from the cathode to the anode with hydrogen being generated on the cathode side.
  - **Polymer Electrolyte Membrane Electrolysers:** In a polymer electrolyte membrane (PEM) electrolyser, the electrolyte is a solid specialty plastic material.
  - **Solid Oxide Electrolysers:** It uses a solid ceramic material as the electrolyte that selectively conducts negatively charged oxygen ions (O<sup>2-</sup>) at elevated temperatures (700°–800°C) to generate hydrogen.

#### GREEN

Hydrogen produced by electrolysis of water, using electricity from renewable sources like hydropower, wind, and solar. Zero carbon emissions are produced.

#### PINK/PURPLE/RED

Hydrogen produced by electrolysis using nuclear power.

#### TURQUOISE

Hydrogen produced by the thermal splitting of methane [methane pyrolysis]. Instead of CO<sub>2</sub>, solid carbon is produced.

#### BLACK/GRAY

Hydrogen extracted from natural gas using steam-methane reforming.

#### BLUE

Grey or brown hydrogen with its CO<sub>2</sub> sequestered or repurposed.

#### BROWN

Hydrogen extracted from fossil fuels, usually coal, using gasification.

- Applications:** Green hydrogen can be consumed through either **direct combustion**, electricity generation through **fuel cells** and industrial processes like **ammonia**, **steel manufacturing** and **petroleum refinery** to be used as chemical feedstock.

### **ADVANTAGES OF GREEN HYDROGEN AS A FUEL**

- High Calorific Value:** Hydrogen has almost 2.5 times the energy per tonne compared to natural gas, shifting to Hydrogen thereby reduces natural gas imports.
- Energy efficiency:** A hydrogen fuel cell is two to three times more efficient than an internal combustion engine fueled by gas.
- Climate change mitigation:** The method of producing green hydrogen does not emit any greenhouse gases, helping in our fight against climate change.
  - Also, Green hydrogen can potentially replace coal **and coke** in **iron and steel production**, decarbonizing this sector will also have a significant impact on India's climate goals.
  - Hydrogen can be effectively used as a **fuel for heavy duty vehicles**, helping in the **decarbonization of the transportation sector** too.
- Storage:** Hydrogen has the highest energy per mass of any fuel, which means that the higher the energy density of a system, the greater the amount of energy you can store.
- Cost effective:** India's distinct advantage in low-cost renewable electricity means that green hydrogen will emerge as the most cost-effective form.
- Grid stability:** The intermittent nature of renewable energy, especially wind, leads to grid instability. But green hydrogen can be stored for long periods of time which can be used to produce electricity using fuel cells.
- Monetary benefits:** Experts say the oxygen produced as a by-product can also be monetized by using it for industrial and medical applications or for enriching the environment.
- Demand:** It is expected that Hydrogen demand in India could grow more than **fourfold by 2050**, representing almost **10% of global demand** of which majority of this demand could be met with green hydrogen.

### **CONCERN WITH GREEN HYDROGEN**

- Transportation and Storage:** Storage and transportation of hydrogen have traditionally been difficult due to the unique characteristics of the gas flammability, low density, ease of dispersion, and brittleness.
- High cost:** The cost of green hydrogen production is much higher than what is produced from fossil fuels, due to high prices of renewables and rare earth material used as electrodes.
- High energy consumption:** The production of green hydrogen in particular requires more energy than other fuels. Also, availability of renewable energy is not at par demand.
- Prone to leakages:** Because gaseous hydrogen consists of such a **small molecule**, it is **more prone to leakages throughout the value chain**. Impacts of hydrogen fuel leak include:
  - **Aggravates global warming:** When hydrogen leaks, it reacts with other greenhouse gasses at the atmospheric level and increases their GWP (global warming potential). **According to scientists, if 10% leaks** during its production, transportation, storage, or use, the **benefits of using green hydrogen** over fossil fuels would be **completely wiped out**.
  - **Risk of fires:** As a fuel, hydrogen is highly flammable and so hydrogen leaks generate a serious risk of fire.
  - **Asphyxiation:** If leaked hydrogen accumulates in a confined space in sufficient concentrations it, like all other gasses except oxygen, is an asphyxiant.

### **ABOUT THE NATIONAL GREEN HYDROGEN MISSION**

<b>Launch</b>	The mission was first launched on <b>August 15, 2021</b> , with a view to cutting down <b>carbon emissions</b> and increasing the use of <b>renewable sources of energy</b> .
<b>Nodal agency</b>	The <b>Ministry of New and Renewable Energy (MNRE)</b>
<b>Outlay</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> The initial outlay for the Mission will be <b>Rs.19,744 crore</b>.</li> <li><input type="checkbox"/> Out of the total outlay, the government has allocated ₹17,490 crore for the <b>Strategic Interventions for Green Hydrogen Transition (SIGHT) programme</b>.</li> <li><input type="checkbox"/> The rest ₹1,466 crore for the upcoming <b>pilot projects</b>, ₹400 crore for <b>R&amp;D</b>, and ₹388 crore towards other <b>mission components</b>.</li> </ul>

<b>Expected outcomes by 2030</b>	<input type="checkbox"/> Development of green hydrogen production capacity of at least <b>5 MMT (Million Metric Tonne)</b> per annum <input type="checkbox"/> <b>Renewable energy</b> capacity addition of about <b>125 GW</b> in the country <input type="checkbox"/> Cumulative reduction in <b>fossil fuel imports</b> over Rs. One lakh crore <input type="checkbox"/> Abatement of nearly 50 MMT of annual <b>greenhouse gas emissions</b>
<b>Key features of the mission</b>	<input type="checkbox"/> <b>SIGHT Programme:</b> Under this, two distinct financial incentive mechanisms – targeting domestic manufacturing of electrolyzers and production of Green Hydrogen – will be provided under the Mission. <input type="checkbox"/> <b>Green hydrogen hubs:</b> Regions capable of supporting large scale production and/or utilization of Hydrogen will be identified and developed as Green Hydrogen Hubs. <input type="checkbox"/> <b>End-use sectors:</b> The Mission will also support pilot projects in emerging end-use sectors and production pathways. <input type="checkbox"/> <b>Strategic Hydrogen Innovation Partnership (SHIP):</b> A public-private partnership framework for R&D will be facilitated under the Mission.
<b>Benefits of the mission</b>	<input type="checkbox"/> Creation of <b>export opportunities</b> for Green Hydrogen and its derivatives; <input type="checkbox"/> <b>Decarbonisation</b> of industrial, mobility and energy sectors; <input type="checkbox"/> Reduction in dependence on <b>imported fossil fuels</b> and feedstock; <input type="checkbox"/> Development of <b>indigenous manufacturing</b> capabilities; <input type="checkbox"/> Creation of <b>employment opportunities</b> ; and <input type="checkbox"/> Development of <b>cutting-edge technologies</b> .

### IMPLEMENTATION CHALLENGES FOR GREEN HYDROGEN MISSION IN INDIA

- Cost barrier:** The high cost of manufacturing green hydrogen using renewable energy is the most significant barrier to its adoption in India, accounting for around 65% of the entire cost.
  - At present, in India, green hydrogen is **not commercially viable**. The current cost in India is around **Rs 350-400 per kg**; It is likely to become viable only at a production cost of under **Rs 100/ kg**.
- Insufficient Demand Incentives:** The measures to boost demand for green hydrogen have not kept pace with the significant incentives provided for its supply, resulting in uncertainty for potential investors.
- Fluctuating Renewable Energy Supply:** The usage of renewable energy in the grid can cause shifts in supply and demand, posing challenges for determining the real-time availability and pricing of renewable energy at green hydrogen locations.
- Inconsistent State Rules and Incentives:** States lack clear rules defining incentives for green hydrogen plants, and investors are concerned about the continuity of renewable energy supply over the plant's lifespan.
- Dependence on Limited Natural Resources (Water and Land):**
  - **Water Requirement:** Green hydrogen production relies heavily on water, with each kilogram of hydrogen requiring approximately 9 liters of demineralized water.
  - **Land Requirement:** Setting up a typical green hydrogen facility generating 10 tonnes per day necessitates a substantial land area of around 750 acres for a 150 MW renewable energy plant.

### WAY FORWARD

- To overcome the above challenges:**
  - To reduce Green Hydrogen (GH2) costs, India needs consistent and **low-cost renewable energy**.
  - India needs to invest in **indigenous manufacture of Electrolyzers** and secure geo-political partnerships for procurement of critical minerals to overcome Electrolyser related challenges.
  - **Hydrogen hubs near demand centers** can lower GH2 transportation costs.
  - India must invest in **sustainable water usage** and utilize industrial/municipal wastewater or seawater for electrolysis.
  - R&D is necessary to **enhance Electrolyzers' efficiency**, stack life, and reduce water and power requirements.
  - To encourage exports, GH2 projects and RE plants may be eligible for **tax and duty waivers**.
- Encouraging State-Level Action and Policy Making:** Promote and support state governments in implementing their own initiatives regarding Green Hydrogen, in addition to the national-level efforts.

- Support for MSMEs:** Introduce incentives and support mechanisms at all levels to facilitate MSMEs harnessing the advantages of adopting Green Hydrogen as an alternative fuel.
- Capacity Building and Skill Development:** Foster the development of knowledge and skills in the government, industry, and academia, focusing on Green Hydrogen adoption.
- Enhanced Coordination:** Streamline coordination among different ministries and departments to expedite the mission's implementation process.

## INDIA'S GIG ECONOMY

### CONTEXT

Rajasthan became the first state to enact legislation on the rights of gig workers titled 'The Rajasthan Platform-Based Gig Workers (Registration and Welfare) Bill, 2023.'

### KEY HIGHLIGHTS OF THE BILL

- Applicability:** The Bill applies to "aggregators" (digital intermediaries connecting buyers and sellers) and "primary employers" (individual or organizations engaging platform-based workers).
- Welfare Board:** The Bill proposes a Welfare Board comprising State officials, five representatives each from gig workers and aggregators, and two others from civil society.
  - The Board will set up a **welfare fund, register platform-based gig workers, aggregators and primary employers.**
  - The board will facilitate guarantee of **social security** to platform-based gig workers.
  - The Board will **Maintain a database** of companies and workers and each worker will receive a **unique ID** which "shall be valid in perpetuity."

### WHO IS A 'GIG WORKER'?

- Gig workers refer to workers **outside of the traditional employer-employee relationship.**
- There are two groups of gig workers:
  - **Platform workers:** When gig workers use online algorithmic matching platforms or apps to connect with customers, they are called platform workers.
  - **Non-platform workers:** Those who work outside the above platforms are non-platform workers, including construction workers and non-technology-based temporary workers.

### STATUS OF GIG ECONOMY IN INDIA

- According to a report titled '**India's Booming Gig and Platform Economy**' released by **NITI Aayog**, **77 lakh workers** were engaged in the gig economy in **2020–21**. They constituted 2.6% of the non-agricultural workforce or 1.5% of the total workforce in India.
- The gig workforce is expected to expand to **2.35 crore (23.5 million)** workers by **2029–30**.
- Gig workers are expected to form **6.7% of the non-agricultural workforce** or **4.1% of the total livelihood in India** by **2029–30**.
- At present, about **47%** of the gig work is in **medium skilled jobs**, about **22%** in **high skilled**, and about **31%** in **low skilled jobs**.
- Trend shows the **concentration of workers in medium skills is gradually declining** and that of the low skilled and high skilled is increasing.

### GROWTH DRIVERS OF GIG ECONOMY IN INDIA

- Role of Technology:** The rise of technology, which has made it easier for people to find and work with clients online.
- Work Flexibility:** The increasing demand for flexible work arrangements, which allows people to balance work and other commitments.
- Demographic Factors:** The growing number of young people in India, who are more likely to be open to working in the gig economy.

## PROS AND CONS OF GIG ECONOMY

Advantages of Working in a Gig Economy	Disadvantages of Gig Economy
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Flexibility for Workers:</b> Gig workers have the flexibility to work according to their own schedule and availability, and can often choose their own work hours.</li> <li><input type="checkbox"/> <b>Cost Efficiency for Companies:</b> Companies can save costs by hiring gig workers instead of full-time employees, and may be able to provide services more economically to users.</li> <li><input type="checkbox"/> <b>Opportunities for Low-Skilled Workers:</b> The gig economy provides jobs for many low and semi-skilled workers, often with minimal conditions.</li> <li><input type="checkbox"/> <b>Experience Gain:</b> Young workers can gain valuable work experience through gig work before transitioning to formal employment.</li> <li><input type="checkbox"/> <b>Economical:</b> Gig workers can save costs by working remotely and avoiding expenses like office commute.</li> <li><input type="checkbox"/> <b>Entrepreneurial Opportunities:</b> Gig work can also offer entrepreneurial opportunities, allowing workers to start their own businesses or work as independent contractors with multiple clients.</li> <li><input type="checkbox"/> <b>Income Generation:</b> Gig work can provide a source of income for individuals who may not have access to traditional employment, such as those with disabilities or those living in remote areas.</li> <li><input type="checkbox"/> <b>Access to Global Markets:</b> The gig economy allows workers to connect with clients and customers from around the world, potentially expanding their customer base and income opportunities.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Job Insecurity:</b> Gig workers often work on a day-to-day basis and may be terminated without notice, as seen during the pandemic.</li> <li><input type="checkbox"/> <b>Lack of Benefits:</b> Gig workers typically have no social security benefits, paid leave, or wage regulation, and may be at the mercy of platform companies.</li> <li><input type="checkbox"/> <b>Poor Work Conditions:</b> Many gig workers are required to work long hours with little transparency on incentive structures and may have little bargaining power.</li> <li><input type="checkbox"/> <b>Hidden Charges:</b> Platform companies may charge high commissions on gig workers to sustain discounts offered to users.</li> <li><input type="checkbox"/> <b>Low Bargaining Power:</b> Gig workers often lack a voice and may face delays in payments or lack of access to basic amenities.</li> <li><input type="checkbox"/> <b>Unequal Treatment:</b> Gig workers may be subject to unfair treatment or exploitation, such as low pay, long working hours, or unsafe working conditions.</li> <li><input type="checkbox"/> <b>Limited Career Growth:</b> As gig workers may not have access to training or development programs, or be able to build long-term relationships with clients.</li> <li><input type="checkbox"/> <b>Social Isolation:</b> Gig work may be isolating, as gig workers often work independently and may not have the same social connections or support networks as traditional employees.</li> </ul>

## CODE ON SOCIAL SECURITY, 2020'S INTERPRETATION ON GIG WORKERS

- The Ministry of Labour and Employment** introduced the Code on Social Security, 2020 which brings gig workers within the ambit of labour laws for the first time.
- Key features of the code for gig workers:**
  - **Definition of gig worker:** Under section 2(35) of the Code, a 'gig worker' is defined as 'a person who performs work or participates in a work arrangement and earns from such activities outside of a traditional employer-employee relationship'.
  - **Definition of platform work:** The Code defines platform work as 'a work arrangement outside of a traditional employer-employee relationship in which organizations or individuals use an online platform to access other organizations or individuals to solve specific problems or to provide specific services' in exchange for payment.
  - The Code stipulates that **Central and State governments** must frame suitable **social security schemes for gig workers** on matters relating to health and maternity benefits, provident funds and accident benefits among others.
  - The Code also mandates the **compulsory registration of all gig workers and platform workers** to avail of the benefits under these schemes.

## RECOMMENDATIONS BY NITI AAYOG FOR GIG ECONOMY:

- A Platform India initiative**, built on the pillars of accelerating platformization by simplification and handholding, funding support and incentives, skill development, and social financial inclusion, like the immensely successful Startup India initiative, may be introduced.
- Access to Skill and Finance:** Provide financial products and **cash flow-based loans** to platform workers. Platforms can collaborate with the **Ministry of Skill Development** to promote skilling and job creation in the gig economy.
- Focus on Women:** It recommends businesses to implement programmes for workers and their families that **raise knowledge of gender issues and accessibility**, especially to advance the rights of women and people with disabilities.

- Data Collection:** Other recommendations include **undertaking a separate enumeration exercise to estimate the size of the gig and platform workforce** and collecting information during official enumerations (**Periodic Labour Force Survey**) to identify gig workers.
- Free trade agreement:** creating pathways for education and certification acquired in India to be recognised globally, such as through FTAs.
- Innovation:** Platforms and businesses can innovate to create new models that provide gig workers with better pay, benefits, and job security. This could include the **development of new technologies, such as blockchain and AI** that enable more transparent and secure gig work arrangements.

## INDIA'S STARTUP ECOSYSTEM

### CONTEXT

The Union government asserted that it will always act as a **facilitator** to strengthen the **start-up ecosystem in the country** and not act as a **regulator**.

### WHAT ARE STARTUPS?

- Startups are **newly founded companies** or businesses that are often characterized by **their innovative ideas, scalable business models, and high growth potential**.
- These ventures are typically established by **entrepreneurs or small groups of individuals** who aim to introduce a new product, service, or technology to the market.

### SIGNIFICANCE OF STARTUPS

- Employment Creation:** Startups have the potential to generate a substantial number of jobs, often more than established companies. This is especially significant in developing nations like India, where high unemployment rates are prevalent.
- New Investments:** Established companies often outsource certain tasks to startups, allowing them to focus on their core competencies. This opens up opportunities for investments into the country.
- Boost to the Economy:** Startups not only create jobs but also stimulate economic activity. As they employ locals and purchase goods and services, money flows into the economy, leading to increased revenue for the government and overall economic growth.
- Fostering Entrepreneurship and Innovation:** The startup ecosystem encourages entrepreneurship and fosters a culture of innovation, contributing to social capital and technological advancements, benefitting the whole economy.

#### What is a Unicorn?

- A unicorn is any **privately owned firm** with a market capitalization of **more than \$1 billion**.
- Unicorns are developing **innovative solutions and technologies** and also generating **large-scale employment**.
- 1 out of every 10 unicorns** globally have been born in **India**.
- Unicorns are active in **Tier I cities**. **Bengaluru** is India's unicorn capital.

### STARTUPS IN INDIA

- The Indian startup ecosystem has **evolved dynamically over the last two decades**.
- Startups in India are emerging in the fields of **IT, agriculture, aviation, education, energy, health and space** sectors.
- Since the launch of Startup India initiative in 2016, **DPIIT** has recognised **92,683** entities as **startups** as on **28th February 2023**.
- As per the Economic Survey 2021-22:**
  - India has become the **third-largest startup ecosystem in the world** after the US and China.
  - Most of the startups are in the **services sector** and **49% of the startups** are from tier-2 and tier-3 cities.
  - A record **44 Indian startups achieved unicorn status** in 2021, taking the overall tally of startup unicorns in India to 83.
  - **Some of the successful Indian unicorns** are Lenskart, Cred, Meesho, PharmEasy, Licious, Grofers, etc.

## **OPPORTUNITIES FOR STARTUPS IN INDIA**

- Scope in the Indian Market:** India's rapid economic growth and diverse population offer numerous opportunities for startups to cater to various needs and preferences of a large consumer base.
- Increased Political Will and Government Support:** The Union and State Governments are increasingly recognizing startups as important engines for economic growth.
- Changing Perceptions towards Entrepreneurship:** The rise of successful startup founders and their stories in the media has boosted the social acceptability of entrepreneurial careers, encouraging more individuals to pursue startup ventures.
- Geography of Startup Support:** Most support is available in Indian metro cities with local peculiarities and unique ecosystems.
  - **For example, Bangalore** developed as the startup hub as many engineering colleges and renowned academic institutes are located there. The ready-made talent pool provided a locational advantage.

## **GOVERNMENT INITIATIVES**

- Startup India Initiative:** Startup India is a flagship initiative of the Union Government. It intends to catalyze startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship in India. Some of its Programs are:
- Fund of Funds for Startups (FFS) Scheme:** The Union Government has established FFS with a corpus of Rs. 10,000 crores, to meet the funding needs of startups.
- Startup India Seed Fund Scheme:** It aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- International Market Access to Indian Startups:** Startup India has launched bridges with over 15 countries that provide a soft-landing platform for startups from the partner nations and aid in promoting cross-collaboration.
- Startup India Hub:** It is an online platform for all stakeholders of the entrepreneurial ecosystem in India to discover, connect and engage with each other.
- National Startup Awards:** This program recognizes and rewards outstanding start-ups and ecosystem enablers contributing to economic dynamism by stimulating innovation and stimulating competition.
- Innovations for Defence Excellence (iDEX):** It aims to boost innovation among the startups and encourage them to be a part of Indian defence and aerospace ecosystem.
- Atal Innovation Mission:** Under this mission, the Union Government has set up Atal Incubation Centres (AIC) to incubate startups in various sectors.
- It has also launched **Atal New India Challenge** that aims to seek, select, support and nurture technology-based innovations.

## **CHALLENGES TO INDIA'S STARTUP ECOSYSTEM**

- Lack of Funds:** Funding is critical for startups to sustain. Shortage of capital can lead to cost-cutting measures with layoffs, mergers and consolidation and even complete shutdowns.
  - The Indian startup ecosystem witnessed a **35% year-on-year fall** in total funding till December 2022 with retail and fintech among the worst-affected sectors.
- Diversity and the Digital Divide:** Indian customers are quite diverse, and the startups' understanding of them is often limited to certain regions.
  - Building up a **pan-Indian startup is difficult** because they have little understanding of customers in other regions.
- Low Willingness to Pay:** It is hard for startups to generate a willingness to pay for their products and services.
  - **Despite increasing incomes**, the Indian customer base continues to be price-sensitive and has little willingness to pay for products and services.
- Taking Products to Market:** It is a challenge for startups to take their products to the market as Indian markets appear difficult to penetrate. This is due to:
  - **Competitive landscape:** Many firms are already present and many more enter the market.
  - **Bureaucratic regulations:** Big market players are more capable of dealing with bureaucratic regulations.
- Hiring Qualified Employees:** For many job-seekers, joining a startup as an employee is not an attractive career option, due to the inherent risk that the startup might fail.

- Startups find a **gap between the knowledge** taught to students in colleges and the knowledge needed for the jobs, especially in technology driven sectors.
  - **Visa requirements** make it difficult to hire employees from outside India and expatriates are more attracted to places like Singapore, where the living standard is higher.

**International Happenings:** Issues like the Russian invasion of Ukraine, a spike in global inflation rates, and fears of a possible recession have also brought down the prospects for many startups in general.

## WAY FORWARD

- Policy reforms improving general economic conditions** as well as investments in digital and physical infrastructure can benefit startups.
  - Indian culture** needs to be **more encouraging** towards people, who take agency and create something on their own. The **willingness to take risks** should be more appreciated and failure seen with less negative judgment.
  - It shall be imperative to channel **investments in education** to develop a broader talent pool.
  - Support must be extended to **entrepreneurs** in smaller **tier 2, 3 and 4 cities**.
  - Fostering a good work culture** can be helpful to attract and retain talent. This will foster a more inclusive and innovative environment.

## CIRCULAR ECONOMY FOR SUSTAINABLE DEVELOPMENT IN INDIA

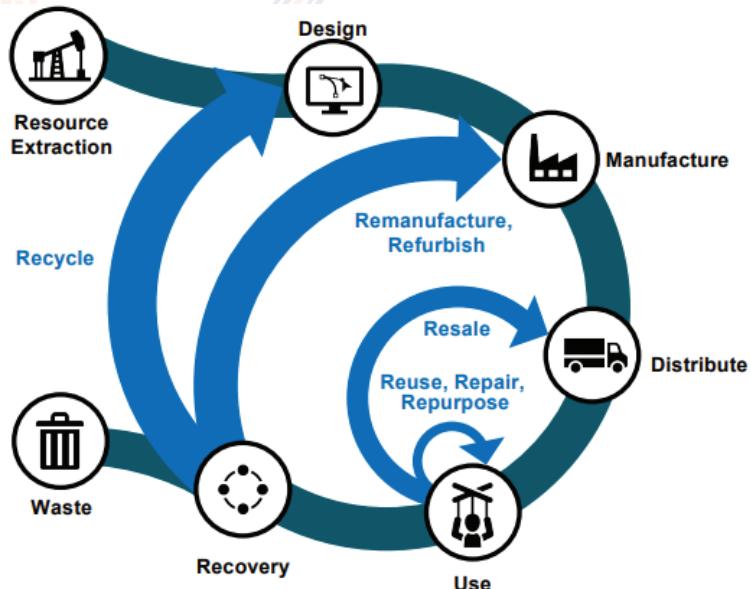
CONTEXT

The Union Minister of Environment, Forest, and Climate Change launched the Resource Efficiency Circular Economy Industry Coalition (RECEIC) on the sidelines of the 4th G20 Environment and Climate Sustainability Working Group (ECSWG) meeting held in Chennai.

## **ABOUT THE RESOURCE EFFICIENCY CIRCULAR ECONOMY INDUSTRY COALITION (RECEIC)**

- ❑ It is a first-of-its-kind initiative aimed at promoting **resource efficiency** and **circular economy** practices with participation from **39 global companies**.
  - ❑ The **39 companies** are headquartered in 11 countries, including India, and the **number is likely to increase** in the coming months.
  - ❑ **The Mission:** The mission of this coalition is to –
    - Facilitate and foster greater **company-to-company collaboration**,
    - **Build advanced capabilities** across sectors and value chains,
    - Bring learnings from **diverse and global experiences** of the coalition members, and
    - Unlock **on-ground private sector action** to enhance **resource efficiency** and accelerate **circular economy transition**.
  - ❑ **Focus Areas:** RECEIC will focus on areas such as power, beverages, steel, FMCG, fashion, cement, polymer, electronics, packaging, and automobiles.
  - ❑ **Three Pillars:** The coalition is structured around the three guiding pillars of partnerships for impact, technology cooperation and finance for scale.

The diagram illustrates the circular economy process. It features a large blue circle with a clockwise arrow. Seven circular icons are placed along the arrow, each representing a stage: 'Resource Extraction' (factory icon), 'Design' (monitor icon), 'Manufacture' (factory icon), 'Distribute' (truck icon), 'Reuse, Repair, Repurpose' (truck icon), 'Resale' (truck icon), and 'Recycle' (trash bin icon). The word 'Waste' is written below the trash bin icon.



## WHAT IS CIRCULAR ECONOMY?

- The circular economy is an **economic model** that aims to **minimize waste, maximize resource efficiency**, and **promote sustainability**.

- It is designed to **move away from the traditional linear economy**, where products are manufactured, used, and then discarded as waste.
- In a circular economy, products, **materials**, and resources are kept in **use for as long as possible**, and their value is retained through **multiple cycles of use and recycling**.

### KEY PRINCIPLES OF CIRCULAR ECONOMY

- Design for longevity and durability:** Products are designed to last longer, be easily repairable, and upgradeable to extend their lifespan.
- Reuse and refurbishment:** Used products are repaired, refurbished, or remanufactured to be sold again, reducing the need for new products and minimizing waste.
- Recycling and materials recovery:** At the end of a product's life, materials are recovered and recycled to create new products, closing the loop and reducing the demand for virgin resources.
- Waste reduction and resource efficiency:** The circular economy aims to reduce waste generation at every stage of the product life cycle and optimize the use of resources.
- Biomimicry:** Taking inspiration from nature, the circular economy seeks to develop technologies and systems that mimic natural ecosystems' regenerative and waste-free characteristics.

### IS RECYCLING THE SAME AS THAT OF THE CIRCULAR ECONOMY?

- Although** the two concepts are **interconnected**, a **circular economy is more comprehensive** and ambitious.
- In Recycling**, the majority of recyclable goods can only be downcycled, which results in a **loss of quality** with each subsequent life cycle and eventual waste.
- Without any fresh material inputs, a **circular economy would reduce emissions, waste, and ultimately costs**.
- A circular economy would **educate individuals on their consumption habits** in addition to **enhancing recycling systems**.

### NEED FOR CIRCULAR ECONOMY MODEL IN INDIA

- Waste management:** India generates a massive amount of waste, particularly in urban areas, which is increasing rapidly. Circular economy helps in waste minimization.
  - Presently, 377 million people living in urban cities, produce approximately **55 million tonnes of Municipal Solid Waste (MSW) per year**, which may go up to 125 million MT by 2031.
  - Moreover, **only 75-80% of the MSW gets collected**; **out of which only 22-28% is processed**, and the rest is dumped in dump yards, causing severe environmental pollution.
- Resource depletion:** As a rapidly developing country, India's demand for resources is growing. However, traditional linear models of production and consumption are leading to the depletion of natural resources, which is unsustainable in the long run.
  - According to the United Nations' **World Population Prospects-2022**, India's population is expected to swell up to **166.8 crores by 2050**.
  - **By 2030**, India is expected to be the **world's third-largest economy**, accounting for approximately 8.5% of the global GDP.
- Environmental pollution:** The linear economy generates a significant amount of pollution, including air, water, and soil pollution, contributing to climate change and various health issues.
  - **Air pollution:** According to IQAir, 21 out of the 30 most polluted cities in the world are in India.
  - **Plastic Pollution:** India alone generates 60% of the world's plastic waste, of which only 30 per cent is recycled.
  - **Land degradation:** Over 29% (96.4 million hectares) of India's total geographical area (328.7 million hectares) is going through severe land degradation.
  - **Water pollution:** It is estimated that approximately 70% of India's surface water is unfit for human consumption, according to the World Economic Forum.
  - **GHG emissions:** Globally, India is the third largest emitter of greenhouse gas after China and the US, emitting around 2.6 billion tonnes CO<sub>2</sub> equivalent annually.

- Climate change:** India is vulnerable to the impacts of climate change, including **extreme weather events**, rising sea levels, and changing precipitation patterns. Adopting a circular economy can help **reduce greenhouse gas emissions** and promote **climate resilience**.
  - According to a report by the London-based global think tank Overseas Development Institute, **India may lose** anywhere around **3 to 10 per cent of its GDP annually by 2100** and its poverty rate may rise by 3.5 per cent in 2040 **due to climate change**.
- Economic growth and job creation:** A circular economy can spur economic growth by creating new business opportunities, promoting innovation, and generating employment in various sectors, such as recycling, remanufacturing, and sharing platforms.
- Achieving SDGs:** The circular economy holds particular promise for achieving multiple SDGs, including SDGs 6 on energy, 8 on economic growth, 11 on sustainable cities, 12 on sustainable consumption and production, 13 on climate change, 14 on oceans, and 15 on life on land.

### **GOVERNMENT INITIATIVES TO PROMOTE CIRCULAR ECONOMY**

- E-Waste (Management) Rules, 2016:** The rules were notified by the **Ministry of Environment, Forest and Climate Change (MoEFCC)** to address the growing concerns of electronic waste (e-waste) management in the country.
  - These rules are aimed at **curbing the improper disposal of electronic products** and to promote sustainable practices for e-waste management.
- Plastic Waste Management (Second Amendment) Rules, 2022:** The Union Environment Ministry has launched this policy to mandate an increase in the thickness of **plastic carry bags to over 120 microns** starting on December 31, 2022, and the phase-out of some single-use plastic products starting on July 1, 2022.
- Battery Waste Management Rules, 2022:** The rules function based on the concept of **Extended Producer Responsibility (EPR)** where the producers of batteries are responsible for the collection and recycling/refurbishment of waste batteries and the use of recovered materials from waste into new batteries.
- Swachh Bharat Mission - Urban 2.0 (SBM-U2.0):** It aims to achieve the objective of safe sanitation in urban areas by making all **cities “Garbage Free,”** guaranteeing **grey and black water management** in all cities besides those covered by Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and making all urban local bodies **open defecation free (ODF+)**.
  - In order to effectively manage solid waste, the mission will concentrate on **source segregation of trash, using the 3Rs (reduce, reuse, recycle) as a guideline**, scientific processing of all sorts of municipal solid waste, and repair of former dump sites.

### **CHALLENGES FOR CIRCULAR ECONOMY IN INDIA**

- Lack of Clear Vision:** Despite policy efforts, there is a lack of a clear vision towards the end-goal of India's circular economy mission. This can lead to confusion and gaps in the actual implementation of circular economy policies and initiatives.
- Reluctance of Industries:** Industries may be reluctant to adopt the circular economy model due to various factors, including supply chain limitations, lack of incentives to invest in circular practices, and complexities in recycling and remanufacturing processes.
- Sub-optimal Outcomes:** Circular economy efforts in India often focus on the end of value chains, leading to suboptimal economic and environmental outcomes. To achieve maximum impact, circular practices need to be integrated throughout the entire product life cycle.
- Lack of Awareness and Understanding:** Many people in India are not familiar with the concept of a circular economy and its benefits, which can hinder support for implementing a circular economy.
- Infrastructure Challenges:** India's current infrastructure may not be well-equipped to support a circular economy.
  - **Insufficient recycling facilities and waste management systems** make it challenging to efficiently recycle and reuse materials.
- Cultural Challenges:** There is a cultural resistance to the idea of reusing and recycling products in India making it difficult to change consumer behavior and shift towards a circular economy.

## WAY FORWARD

- Statutory Reforms:** Implement legislative mandates that require the use of recycled/secondary raw materials in the production cycle.
- Public-Private Partnerships:** Foster collaborations between the government, private sector, and civil society to jointly work towards circular economy goals
- Technology-Driven Recycling:** Encourage R&D in waste recycling at the university and school levels to involve the masses in technology enhancement for waste management.
- Awareness and Education:** Conduct awareness campaigns to educate the public, businesses, and stakeholders about the benefits of a circular economy.
- Government Procurement:** Integrate circular economy criteria into government procurement processes, favoring products and services with a lower environmental impact and a higher potential for reuse and recycling.

**Conclusion:** India's evolving market and development potential offer a competitive advantage for a circular economy, leading to sustainable and resilient prosperity. Advancements will boost urban and agricultural economies, promote climate mitigation, ensure food and water security, enhance biodiversity, create jobs, and empower underprivileged communities. To achieve this, a comprehensive roadmap for transitioning to a circular economy is crucial.

## NUCLEAR ENERGY VS. NUCLEAR DISASTERS WEIGHING THE PROS AND CONS

### CONTEXT

Bellona Foundation, a Lithuania-based NGO has published a report analyzing the risks associated with the hostilities around the Zaporizhzhia Nuclear Power Plant (NPP) in Ukraine.

### ABOUT THE ZAPORIZHZHIA NUCLEAR POWER PLANT (NPP)

- The Zaporizhzhia NPP in southeastern Ukraine is the **largest nuclear power plant in Europe** and among the 10 largest in the world.
- It is located on the banks of the **Dnieper river**, which is the longest river of Ukraine and Belarus and the fourth-longest river in Europe, after the Volga, Danube, and Ural rivers.
- The Zaporizhzhia NPP has been under **Russian occupation since March 2022**.
- The main concern identified in the Bellona report is the **risk of a complete containment breach** and a **projectile striking a reactor** while it is generating power. This scenario could lead to the release of radioactive materials and volatile substances into the air, including **iodine-131 and cesium-137**.

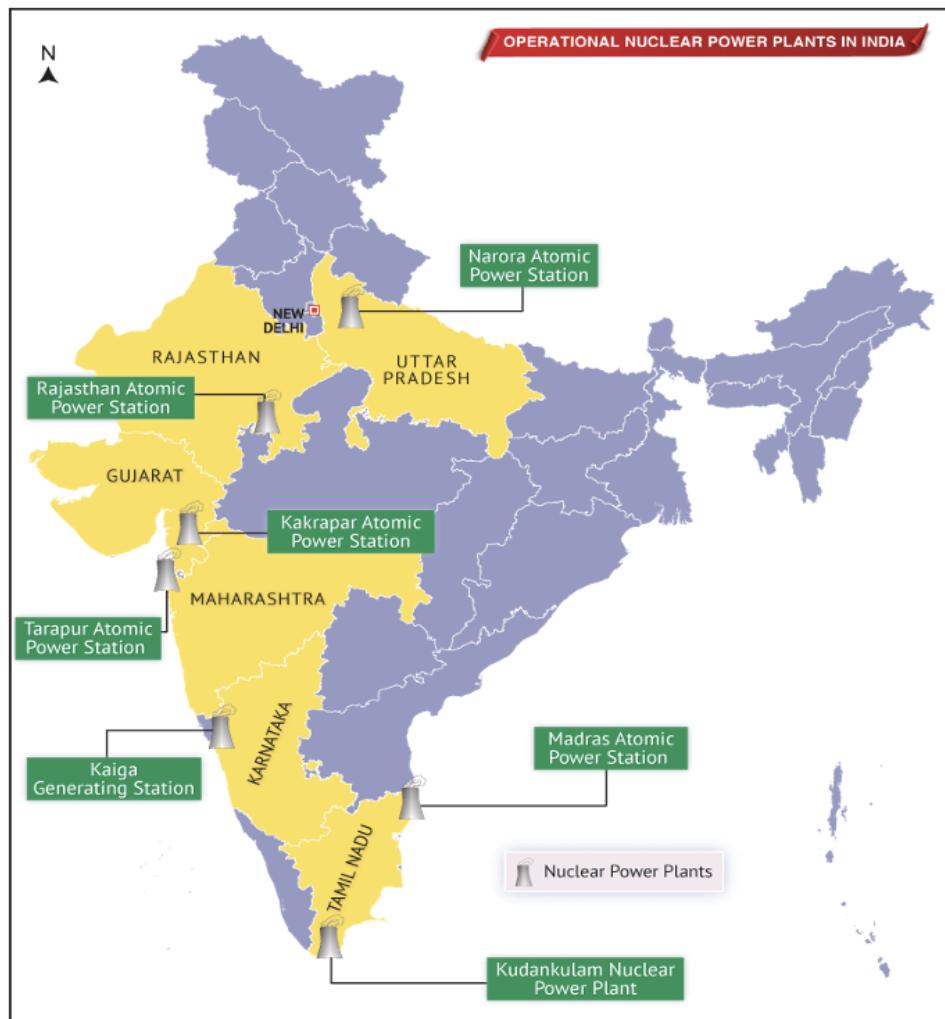
### ABOUT NUCLEAR ENERGY

- Nuclear energy is a type of energy that is generated by the process of **nuclear reactions- either nuclear fission or nuclear fusion**.
- The energy released during these reactions can be harnessed and used to produce **electricity, heat, or other forms of energy**.
- Nuclear fission:** It is a process in which the nucleus of an atom is **split into two or more smaller nuclei**, releasing a large amount of energy in the process.
  - This process is used in **nuclear power plants** to generate electricity.
  - One example of nuclear fission is the reaction that occurs in a **nuclear reactor** when uranium atoms are **split into smaller atoms**.
- Nuclear fusion:** It is a process in which two or more atomic nuclei come together to form a single, more massive nucleus, releasing a large amount of energy in the process.
  - This process **occurs naturally in stars**, including our own sun.
  - One example of nuclear fusion is the reaction that occurs in a **hydrogen bomb**.

## ADVANTAGES OF NUCLEAR ENERGY

Low carbon emissions	Reliability	High energy density	Base load power	Energy security
Nuclear energy is a low-carbon source of power that does not release greenhouse gases into the atmosphere, unlike fossil fuels.	Nuclear power plants can run for long periods of time without interruption and are highly reliable sources of electricity.	Nuclear fuel contains a high energy density, meaning that it can produce a large amount of energy from a small amount of fuel.	Nuclear power can provide reliable base load power to complement intermittent renewable energy sources like wind and solar power.	Nuclear power can help to increase energy security by reducing reliance on foreign sources of oil and gas.

## INDIA AND NUCLEAR ENERGY



- Nuclear power is the **fifth-largest source of electricity in India** after coal, gas, hydroelectricity and wind power.
- As of 2020, India has **22 nuclear reactors** in operation in **8 nuclear power plants**, with a total installed capacity of 7,380 MW. **10 more reactors** are **under construction** with a combined generation capacity of 8,000 MW.

- India has around **1–2% of the global uranium reserves**, while **thorium reserves** are bigger; around **12–33% of global reserves**, according to IAEA and US Geological Survey.

## INDIA'S THREE-STAGE NUCLEAR POWER PROGRAMME

- India's three-stage nuclear power programme was formulated by **Homi Bhabha in the 1950s** to secure the country's long term energy independence, through the use of uranium and thorium reserves.
- The **ultimate focus** of the programme is on enabling the **thorium reserves of India to be utilized** in meeting the country's energy requirements.
- Stage I – Pressurized Heavy Water Reactor [PHWR]:**
  - The first stage of India's nuclear program involves the use of PHWRs fuelled by **natural uranium**.
  - These reactors generate electricity while also producing **plutonium-239 as a by-product**.
- Stage II – Fast Breeder Reactor (FBR):**
  - The second stage of India's nuclear program involves the use of FBRs fuelled by a **mix of plutonium-239 and uranium-238**.
  - These reactors generate more plutonium-239 than they consume and can also **convert thorium into uranium-233**, which can be used as fuel in the third stage.
- Stage III – Thorium Based Breeder Reactors:**
  - The third and final stage of India's nuclear program involves the use of thorium-based reactors fuelled by **uranium-233** produced in FBRs.
  - These reactors are designed to use **thorium as a fuel**, which is abundant in India, and have the potential to provide a sustainable source of nuclear energy for the country.

## WHAT ARE NUCLEAR DISASTERS?

- Nuclear disasters refer to **catastrophic incidents** that involve the **release of** significant amounts of **radioactive materials** into the environment due to accidents or failures in nuclear facilities.
- These disasters **can have severe consequences** for human health, the environment, and social and economic well-being.

### Few notable examples of nuclear disasters

- Chernobyl Disaster (1986):** It is considered one of the most devastating nuclear accidents in history. It occurred at the Chernobyl Nuclear Power Plant in Ukraine (then part of the Soviet Union). A combination of design flaws, operator errors, and a steam explosion resulted in a fire that burned for several days, releasing large amounts of radioactive materials into the atmosphere. The accident caused immediate deaths, acute radiation sickness in workers, and long-term health effects in nearby populations. It also led to the contamination of extensive areas with radioactive fallout.
- Fukushima Daiichi Disaster (2011):** The Fukushima Daiichi nuclear disaster occurred following a massive earthquake and tsunami in Japan. The disaster affected the Fukushima Daiichi Nuclear Power Plant, leading to multiple reactor meltdowns, hydrogen explosions, and the release of radioactive materials. It resulted in the evacuation of surrounding areas, contamination of soil and water, and long-term concerns about the health effects of radiation exposure.

## CAUSES OF NUCLEAR DISASTERS

- Design Flaws and Safety Deficiencies:** Flaws in the reactor design, cooling systems, or containment structures can increase the risk of nuclear accidents.
- Human Errors and Operator Mistakes:** Inadequate training, insufficient understanding of procedures, poor communication, or failure to follow protocols can all contribute to accidents.
- Natural Disasters:** Natural disasters, such as earthquakes, tsunamis, or floods can damage critical infrastructure, disrupt power supply, or overwhelm safety systems, leading to nuclear accidents.
- External Threats or Sabotage:** Deliberate acts of sabotage or external threats can potentially trigger nuclear accidents. These threats can include terrorist attacks, cyberattacks targeting control systems, or military actions targeting nuclear facilities.

## **CONSEQUENCES OF NUCLEAR DISASTERS**

- Human Health Effects:** Exposure to high levels of radiation released during a nuclear disaster can cause acute radiation sickness, leading to symptoms such as nausea, vomiting, weakness, and even death in severe cases. Long-term health effects may include an increased risk of cancer, genetic mutations, and other radiation-related illnesses.
- Environmental Contamination:** Nuclear disasters can result in the release of radioactive materials into the environment. These materials can contaminate soil, water, vegetation, and wildlife, leading to long-term environmental damage.
- Displacement and Social Impact:** Nuclear disasters often necessitate the evacuation of affected populations to ensure their safety. Displaced individuals may experience significant disruptions to their lives, including the loss of homes, communities, and livelihoods.
- Economic Consequences:** The economic impact of nuclear disasters can be substantial. The costs associated with cleanup, decontamination, and restoration of affected areas can be enormous.
- Public Perception and Trust:** Nuclear disasters erode public trust in nuclear energy and can lead to increased skepticism regarding the safety and viability of nuclear power.

## **NUCLEAR HAZARD MITIGATION STRATEGIES**

There are four ways in which people are protected from identified radiation sources:

- Limiting time:** In occupational situations, dose is reduced by limiting exposure time.
- Distance:** The intensity of radiation decreases with distance from its source.
- Shielding:** Barriers of lead, concrete or water give good protection from high levels of penetrating radiation such as gamma rays. Intensely radioactive materials are therefore often stored or handled under water, or by remote control in rooms constructed of thick concrete or lined with lead.
- Containment:** Highly radioactive materials are confined and kept out of the workplace and environment. Nuclear reactors operate within closed systems with multiple barriers which keep the radioactive materials contained.

## **INSTITUTIONAL AND LEGISLATIVE FRAMEWORK IN INDIA**

- The Department of Atomic Energy (DAE):** It is the nodal agency in the country in respect of manmade radiological emergencies in the public domain.
  - **A Crisis Management Group (CMG)** chaired by the Additional Secretary, DAE has been set up.
  - In the event of any nuclear/radiological emergency in the public domain, CMG is immediately activated and it **coordinates with the local authority** in the affected area and all the concerning authorities at the centre.
- The Atomic Energy Regulatory Board:** It is the nuclear regulatory authority in India which, as per the legal framework of **Atomic Energy Act, 1962**, has the mandate for issuance of licenses to nuclear and radiation facilities upon ensuring compliance with the applicable standards and codes.
  - It **develops safety policies** in nuclear, radiological and industrial safety areas.
  - It **grants consent** for siting, constructing, commissioning and decommissioning after appropriate safety review and assessment, for the nuclear and radiological facilities.
  - It **develops safety codes, guides and standards** for siting, designing, construction, commissioning, operation and decommissioning of different types of nuclear and radiological facilities.
  - It **reviews the emergency preparedness plans** for nuclear and radiological facilities and transportation of large radioactive sources, irradiated fuel and fissile material.
  - It takes such steps as necessary to keep the **public informed of major issues** of radiological safety significance.
  - It **reviews the training programs, qualifications and licensing policies** for personnel of nuclear and radiological facilities.

## **RENEWABLE ENERGY - PROS AND CONS**

### **CONTEXT**

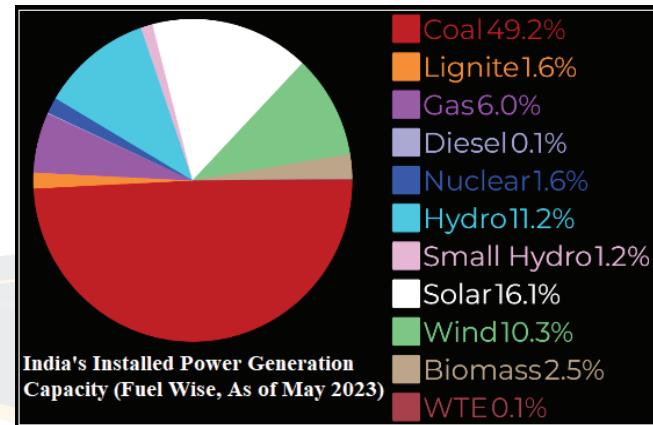
According to the International Energy Agency (IEA), Renewable electricity is growing at a faster rate in India than any other major economy, with new capacity additions on track to double by 2026.

## ABOUT RENEWABLE ENERGY

- Renewable energy refers to energy sources that are **naturally replenished** and have a significantly **lower impact on the environment** compared to fossil fuels.
- The most popular renewable energy sources** currently are: Solar energy, Wind energy, Hydro energy, Tidal energy, Geothermal energy, Biomass energy.
- When it comes to nuclear energy**, the energy produced by nuclear power plants is considered renewable, but the fuel required for nuclear reactions is not renewable. Additionally, nuclear energy production does not release greenhouse gases, making it a low-carbon energy source.

## INDIA'S RENEWABLE ENERGY LANDSCAPE

- As of May 2023, India's installed renewable energy (RE) capacity, including nuclear power, stands at **197 GW**, which accounts for **43% of the total installed energy capacity**.
- India stands **4th globally in Renewable Energy Installed Capacity**, 4th in Wind Power capacity & 4th in Solar Power capacity (as per REN21 Renewables 2022 Global Status Report).
- India has set an **enhanced target at the COP26 of 500 GW** of non-fossil fuel-based energy by 2030 as part of its **Panchamrit Goals**, which are five nectar elements (Panchamrit) of India's climate action:
  - Reach **500 GW Non-fossil energy** capacity by 2030.
  - **50 per cent of its energy requirements from renewable energy** by 2030.
  - Reduction of total projected **carbon emissions by one billion tonnes** from now to 2030.
  - Reduction of the **carbon intensity** of the economy by **45 per cent by 2030**, over 2005 levels.
  - Achieving the target of **net zero emissions by 2070**.



## PROS AND CONS OF RENEWABLE ENERGIES & INDIA'S POTENTIAL AND EFFORTS

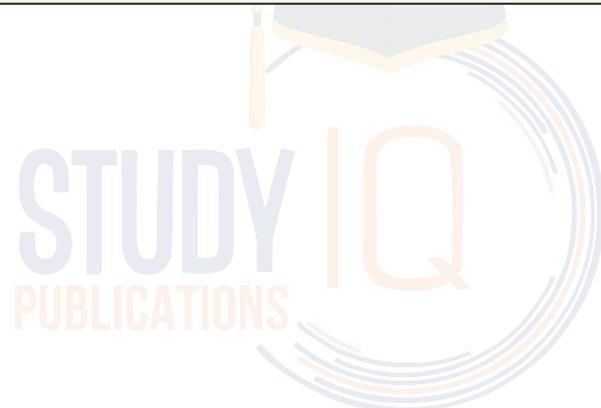
Solar Energy	<p><b>Pros:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Renewable and low carbon:</b> Inexhaustible source of energy and is environment friendly.</li> <li><input type="checkbox"/> <b>Cost-savings:</b> Once installed, solar panels offer long-term cost savings, especially as the cost of solar panels continues to decline.</li> <li><input type="checkbox"/> <b>Low maintenance:</b> Solar panels require minimal maintenance since there are no moving parts.</li> </ul> <p><b>Cons:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>High initial costs:</b> The initial installation cost of solar panels can be relatively high, including the cost of solar panels, inverters, mounting systems, and installation labor.</li> <li><input type="checkbox"/> <b>Intermittency:</b> Energy production is limited during cloudy days or at night unless energy storage systems or backup power sources are utilized.</li> <li><input type="checkbox"/> <b>Space requirements:</b> Generating significant amounts of solar power requires a considerable amount of space for installing solar panels.</li> <li><input type="checkbox"/> <b>Geographic Limitations:</b> The effectiveness of solar energy can vary depending on geographic location and local climate conditions.</li> </ul> <p><b>India's Potential:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> India is endowed with vast solar energy potential. India receives <b>nearly 3000 hours of sunshine every year</b>.</li> <li><input type="checkbox"/> About 5,000 trillion kWh per year of energy is incident over India's land area with most parts receiving <b>4-7 kWh per sq. m per day</b>.</li> <li><input type="checkbox"/> National Institute of Solar Energy has assessed India's solar potential to be <b>about 750 GW</b> assuming 3% of the waste land area to be covered by Solar PV modules.</li> </ul>
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	<p><b>Government initiatives:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>National Solar Mission:</b> It is a major initiative to promote ecologically sustainable growth while addressing India's energy security challenge.</li> <li><input type="checkbox"/> <b>SRISTI Scheme:</b> Sustainable rooftop implementation of Solar transfiguration of India (SRISTI) scheme to promote rooftop solar power projects in India.</li> <li><input type="checkbox"/> <b>Solar Park Scheme:</b> The Solar Park Scheme plans to build a number of solar parks, each with a capacity of nearly 500 MW, across several states.</li> <li><input type="checkbox"/> <b>Rooftop Solar Scheme:</b> It aims to harness solar power by installing solar panels on the roof of houses.</li> <li><input type="checkbox"/> <b>PM KUSUM:</b> The scheme aims to add solar and other renewable capacity of 30,800 MW by 2022 with total central financial support of Rs. 34,422 Crores.</li> <li><input type="checkbox"/> <b>Atal Jyoti Yojana (AJAY):</b> The AJAY scheme was launched in September 2016 for the installation of solar street lighting (SSL) systems in states with less than 50% of households covered with grid power (as per Census 2011).</li> <li><input type="checkbox"/> <b>International Solar Alliance:</b> It is an action-oriented, member-driven, collaborative platform for increased deployment of solar energy technologies.</li> </ul>
Wind energy	<p><b>Types of Wind Farm/Parks:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Offshore:</b> offshore turbines are located out at sea or in freshwater.</li> <li><input type="checkbox"/> <b>Onshore:</b> Onshore wind refers to wind turbines located on land.</li> </ul> <p><b>Pros of Offshore Wind:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Windmills can be built that are <b>larger and taller</b> than their onshore counterparts, allowing for more energy collection.</li> <li><input type="checkbox"/> They tend to be far out at sea, meaning they are <b>much less intrusive to neighboring countries</b>, allowing for larger farms to be created per square mile.</li> <li><input type="checkbox"/> Typically, out at sea, there is a <b>much higher wind speed/force</b> allowing for more energy to be generated at a time.</li> <li><input type="checkbox"/> There are <b>no physical restrictions</b> such as hills or buildings that could block the wind flow.</li> </ul> <p><b>Cons of Offshore Wind:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The biggest disadvantage of an offshore wind farm is the cost. Offshore wind farms can be expensive to build and maintain and because of their <b>hard-to-reach locations</b>, they are susceptible to damage from very high-speed winds during storms or hurricanes which is expensive to repair.</li> <li><input type="checkbox"/> The effect of offshore wind farms on <b>marine life and birds</b> are not yet fully understood.</li> <li><input type="checkbox"/> Offshore wind farms that are built closer to coastlines (generally within 26 miles) can be unpopular with residents as it can <b>affect property values and tourism</b>.</li> </ul> <p><b>Pros of Onshore Wind:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The cost of onshore wind farms is relatively cheap, allowing for mass farms of wind turbines.</li> <li><input type="checkbox"/> The shorter distance between the windmill and the consumer allows for less voltage drop off on the cabling.</li> </ul> <p><b>Cons of onshore Wind:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> One of the biggest issues of onshore wind farms is that many deem them to be an <b>eyesore on the landscape</b>.</li> <li><input type="checkbox"/> They <b>don't produce energy all year round</b> due to often poor wind speed or physical blockages such as buildings or hills.</li> <li><input type="checkbox"/> The noise that wind turbines create creates noise <b>pollution</b> for nearby communities.</li> </ul> <p><b>India's Potential</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> India is blessed with a <b>coastline</b> of about <b>7600 km</b> surrounded by water on three sides and has good prospects of harnessing offshore wind energy.</li> <li><input type="checkbox"/> The recent assessment indicates a gross wind power <b>potential of 302 GW</b> in the country at 100 meters and 695.50 GW at 120 meters above ground level.</li> </ul> <p><b>Government Initiatives</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>National Wind-Solar Hybrid Policy:</b> The main objective is to provide a framework for promotion of large grid connected wind-solar PV hybrid systems for optimal and efficient utilization of wind and solar resources, transmission infrastructure and land.</li> <li><input type="checkbox"/> <b>National Offshore Wind Energy Policy:</b> Notified in October 2015 with an objective to develop the offshore wind energy in the Indian Exclusive Economic Zone (EEZ) along the Indian coastline of 7600 km.</li> </ul>

<b>Hydro Power</b>	<p><b>About Hydro Power:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hydro power can be captured <b>when water flows</b> downward from a higher level to a lower level which is then used to turn the turbine.</li> <li><input type="checkbox"/> Hydro power projects are generally categorized in <b>two segments</b> i.e., small and large hydro.             <ul style="list-style-type: none"> <li>– In India, hydro projects <b>up to 25 MW</b> station capacities have been categorized as <b>Small Hydro Power (SHP)</b> projects.</li> <li>– <b>While the Ministry of Power</b>, Government of India is responsible for large hydro projects, the mandate for the subject of small hydro power (up to 25 MW) is given to the Ministry of <b>New and Renewable Energy</b>.</li> </ul> </li> </ul> <p><b>Pros:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hydropower is a renewable source of energy because it uses and <b>not consumes the water</b> for generation of electricity.</li> <li><input type="checkbox"/> It is a renewable source of energy with <b>no consumables involved</b>; there is very little recurring cost and hence no high long-term expenditure.</li> <li><input type="checkbox"/> It is <b>cheaper as compared to electricity</b> generated from <b>coal and gas fired plants</b>.</li> <li><input type="checkbox"/> Hydropower stations are a preferred <b>solution for meeting peak loads</b> in grids due to its unique capabilities of quick starting and closing.</li> <li><input type="checkbox"/> The operational needs of <b>hydro &amp; thermal stations</b> are complimentary and the balanced mix helps in optimal utilization of the capacity.</li> </ul> <p><b>Cons:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hydropower generation is a highly <b>capital-intensive</b> mode of electricity generation.</li> <li><input type="checkbox"/> Due to the fact that hydropower projects are <b>primarily located in hilly areas</b>, where forest cover is comparatively better than plain areas, diversion of forest land is sometimes unavoidable.</li> <li><input type="checkbox"/> <b>Submergence</b> of land, thereby loss of flora and fauna and large-scale displacement, due to the hydropower projects.</li> <li><input type="checkbox"/> Dams can only be built at <b>specific locations</b>.</li> </ul> <p><b>India's Potential:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> India's hydroelectric power potential is estimated at <b>148,700 MW at a 60% load factor</b>. An additional 6,780 MW from smaller hydro schemes (with capacities of less than 25 MW) is estimated as exploitable.</li> <li><input type="checkbox"/> Hydropower potential is located mainly in <b>northern and north-eastern regions</b>.</li> <li><input type="checkbox"/> <b>Arunachal Pradesh</b> has the largest unexploited hydropower potential of 47 GW, followed by <b>Uttarakhand</b> with 12 GW.</li> <li><input type="checkbox"/> Unexploited potential is mainly along three river systems – <b>the Indus, Ganges and Brahmaputra</b>.</li> </ul> <p><b>Government Initiatives:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The Government had taken <b>several policy initiatives</b> in the past for hydropower development in the country viz., National Electricity Policy 2005, National Tariff Policy 2016, National Rehabilitation &amp; Resettlement Policy 2007 and Right to Fair Compensation &amp; Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013.</li> <li><input type="checkbox"/> <b>Small Hydro Power Programme:</b> The objective is to encourage the State Government entities and Independent Private Producers (IPPs) to set up new Small Hydro projects.</li> </ul>
<b>Biomass Energy</b>	<p><input type="checkbox"/> Biomass is <b>renewable organic material</b> that comes from plants and animals. Biomass energy is energy generated or produced by <b>living or once-living organisms</b>.</p> <p><b>Pros</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Versatile:</b> Biomass energy can have different uses ranging from cooking gas to generation of power with minimum effect on the environment.</li> <li><input type="checkbox"/> <b>Renewable:</b> It is a renewable source of energy and can be provided by nature in abundance.</li> <li><input type="checkbox"/> <b>No net CO2 emissions (ideally):</b> The emission of CO2 far too less in Biomass energy than other conventional sources of energies.</li> <li><input type="checkbox"/> <b>Emits less SO2 and NOx than fossil fuels:</b> The sulphur and nitrogen pollutants are minimal in biomass consumption.</li> </ul> <p><b>Cons</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Low energy density/yield:</b> Some biofuels, like Ethanol, are relatively inefficient as compared to gasoline.</li> <li><input type="checkbox"/> <b>Land conversion:</b> Land needed to produce biomass may compromise land for agriculture consequently impacting both food production and biodiversity.</li> </ul> <p><b>India's Potential</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> As per a recent study sponsored by MNRE, the current availability of biomass in India is estimated at about <b>750 million metric tonnes per year</b>.</li> </ul>

	<ul style="list-style-type: none"> <li><input type="checkbox"/> The Study indicated estimated <b>surplus biomass availability</b> at about 230 million metric tones per annum covering agricultural residues corresponding to a potential of about 28 GW.</li> <li><input type="checkbox"/> This apart, about <b>14 GW additional power</b> could be generated through <b>bagasse-based cogeneration</b> in the country's 550 Sugar mills.</li> </ul> <p><b>Government Initiatives</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>National Bioenergy Programme:</b> Initiated in 2022, it has following sub-schemes:           <ul style="list-style-type: none"> <li>– <b>Waste to Energy (WTE) Programme:</b> to support setting up of large Biogas, BioCNG and Power plants (excluding MSW to Power projects).</li> <li>– <b>Biomass Programme:</b> to support setting up of pellets and briquettes for use in power generation and non-bagasse-based power generation projects.</li> <li>– <b>Biogas Programme:</b> to support setting up of family and medium size Biogas in rural areas.</li> </ul> </li> <li><input type="checkbox"/> <b>National Policy on Biofuels:</b> The policy is aimed at taking forward the indicative target of achieving 20% blending of biofuels with fossil-based fuels by 2025.</li> <li><input type="checkbox"/> <b>Policy for biomass and bagasse cogeneration:</b> It includes financial incentives and subsidies, both for biomass projects and sugar mills that use this technology.</li> </ul>
<b>Geothermal Energy</b>	<p><b>About Geothermal Energy:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Geothermal energy is <b>natural heat from the interior of the earth</b> that can be used to generate electricity as well as to heat up buildings.</li> </ul> <p><b>Pros:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Renewable:</b> It is believed that enough heat is radiated from the center of the earth to fulfill human energy demand for all the times to come.</li> <li><input type="checkbox"/> <b>Easy to exploit in some cases:</b> Since ancient times, people have been using this source of energy for taking baths, heating homes, preparing food etc.</li> <li><input type="checkbox"/> <b>CO2 production less than with fossil fuel:</b> It does not create any pollution and helps in creating a clean environment.</li> <li><input type="checkbox"/> <b>High net energy yield:</b> The cost of electricity production is almost competitive with conventional energy sources.</li> </ul> <p><b>Cons:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Not available everywhere:</b> Geothermal hot spots are scattered and are at far away regions than the areas that need energy.</li> <li><input type="checkbox"/> <b>H2S pollution:</b> Large quantities of H2S "The rotten eggs" gas can be released and inhaling it in too many quantities is fatal.</li> <li><input type="checkbox"/> Geothermal energy harnessing produces <b>some water pollution</b> (somewhat similar to mining).</li> </ul> <p><b>India's Potential:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Geological Survey of India has found around <b>350 geothermal energy locations</b> in the country. The most promising of these is in the Puga valley of Ladakh.</li> <li><input type="checkbox"/> Geothermal resources in India have been <b>mapped by GSI</b> and a broad estimate suggests that there could be <b>10 gigawatts (GW)</b> geothermal power potential, as per the Ministry of New and Renewable Energy (MNRE).</li> <li><input type="checkbox"/> <b>India has 7 geothermal provinces</b> [viz. Himalayas, Sohna, West Coast, Cambay (Gujarat), Godavari, Mahanadi and Son-Narmada-Tapi (SONATA)] and a number of geothermal springs.</li> </ul> <p><b>Government Initiatives:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>First Geothermal power plant</b> to come in Chhattisgarh by joint cooperation of NTPC and Chhattisgarh Renewable Energy Development Agency (CREDA). Tattapani geothermal field in SONATA geothermal province.</li> <li><input type="checkbox"/> MNRE provides large incentives and subsidies for <b>Research, Design, Development and Demonstration (RDD&amp;D)</b> for harnessing geothermal energy in India.</li> </ul>

Tidal Energy	<p><b>About Tidal Energy:</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> It is a form of renewable energy that harnesses the kinetic energy from the <b>rise and fall of ocean tides</b>.</li><li><input type="checkbox"/> It converts the energy of <b>tidal currents into usable electricity</b>.</li></ul> <p><b>Pros:</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>Predictable and Reliable:</b> Unlike wind, ocean energy sources are more predictable. The endless flows create a reliable supply source for future availability.</li><li><input type="checkbox"/> <b>Energy-rich:</b> Moving water is more than 800 times denser than moving air, which multiplies the kinetic energy by the same factor and opens up the scope of huge amounts of energy.</li><li><input type="checkbox"/> <b>Unlimited usage area:</b> Land is a scarce resource but ocean energies are provided by the vast and deep oceans.</li></ul> <p><b>Cons</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Deployment is <b>currently limited</b> in our country and already deployed technologies are under utilised.</li><li><input type="checkbox"/> Either there is not much <b>research</b> done on the <b>technologies</b> or most are currently at the initial stage of <b>R&amp;D</b>, demonstration and commercialization.</li><li><input type="checkbox"/> Uncertainty of the <b>marine environment</b> and commercial scale risks like- corrosion of materials due to the <b>salinity of seawater</b>, offshore maintenance difficulties, the <b>environmental impact</b> on landscapes and the marine ecosystem and competition from other <b>marine activities</b> such as fishing.</li></ul> <p><b>India's Potential</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Total identified potential of <b>Tidal Energy</b> is about <b>12455 MW</b>, with potential locations identified at Khambat &amp; Kutch regions, and large backwaters, where barrage technology could be used.</li><li><input type="checkbox"/> The total theoretical potential of <b>wave energy</b> is estimated to be about <b>40,000 MW</b>. This energy is however less intensive than what is available in more northern and southern latitudes.</li></ul>
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## AGRICULTURE

### INDIA'S LIVESTOCK SECTOR

#### CONTEXT

Department of Animal Husbandry & Dairying (DAHD) is implementing the **Credit Guarantee Scheme** under **Animal Husbandry Infrastructure Development Fund (AHIDF)**.

#### ABOUT THE CREDIT GUARANTEE SCHEME

- The scheme aims to **strengthen the credit delivery system** and facilitate smooth flow of credit to the MSMEs engaged in Livestock sector **without hassles of collateral security**.
- Key Objectives:**
  - The main objective is to encourage lenders to focus on the viability of projects and **provide credit facilities** based on the **primary security of the assets** being financed.
  - By providing **access to financial assistance**, it promotes investments in various areas of the livestock sector, such as dairy and meat processing, animal feed plants, breed improvement technology, waste management, and veterinary vaccine and drug manufacturing facilities.
- Beneficiaries:** The scheme targets underserved sections of society, including **first-generation entrepreneurs** and **underprivileged individuals**, who often lack collateral security for their ventures.
- Funding:**
  - The DAHD has set up a credit guarantee **fund trust of Rs 750 crore**, which will cover up to **25 per cent of credit facilities** extended to eligible MSMEs by lending institutions.
  - The trust, formed in partnership with **NAB Sanrakshan Trustee Company Private Ltd**, a subsidiary of **NABARD**, ensures credit guarantee for MSMEs under the AHIDF scheme.
- Key Features of the Scheme:**
  - **Interest subvention of three per cent**,
  - Loan of up to **90 per cent of the total project cost** from any Scheduled Bank, National Cooperative Development Corporation (NCDC).

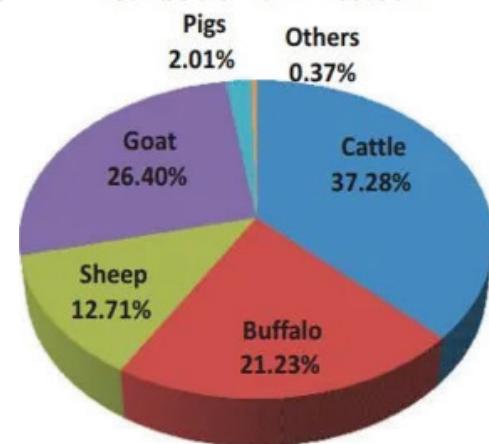
#### INDIA'S LIVESTOCK SECTOR

- India is the **highest livestock owner of the world**. As per the **20th Livestock Census**, the total Livestock population is **535.78 million** in the country showing an **increase of 4.6%** over **Livestock Census-2012**.
- Livestock plays an important role in Indian economy:**
  - About 20.5 million people **depend** upon livestock for their livelihood.
  - Livestock contributed **16% to the income** of small farm households as against an average of **14%** for all rural households.
  - Livestock provides **livelihood to two-third of rural community**. It also provides **employment to about 8.8 %** of the population in India.
  - Livestock sector contributes **4.11% GDP and 25.6% of total Agriculture GDP**. The livestock sector grew at a **CAGR of 7.9%** during 2014-15 to 2020- 21 (at constant prices).

#### SIGNIFICANCE OF LIVESTOCK SECTOR FOR INDIA

- Poverty Alleviation:** Livestock-rearing provides a valuable source of income for small and marginal farmers who might have limited access to land for crop cultivation.
- Recycling Agricultural Economy:** Livestock plays a crucial role in recycling agricultural resources. Animals and birds feed on crop residues and byproducts, converting them into valuable assets like draught power, dung manure, milk, meat, and eggs.

**Distribution of Livestock**



- Boosting Rural Economy:** The livestock sector's growth and productivity benefit the rural economy by creating employment opportunities in various aspects, such as animal husbandry, milk collection, transportation, processing, and marketing.
- Diversification of Income:** Livestock-rearing offers a diverse income stream for farmers, especially those engaged in mixed farming practices.

### CHALLENGES FACED BY THE LIVESTOCK SECTOR IN INDIA

- Disease Outbreaks:** Frequent occurrences of diseases like Black Quarter infection, influenza, and Foot and Mouth Disease have a detrimental impact on the health and productivity of livestock.
  - Cattle deaths due to **lumpy skin disease** in the country during the year 2022 stands at 1,55,366.
- Greenhouse Gas Emissions:** The substantial population of ruminants in India contributes to the generation of greenhouse gases, making it challenging to reduce emissions.
  - Livestock account for about **63% of all emissions** from the agricultural sector in India.
- Decline of Local Breeds:** Efforts to cross-breed native species with foreign stocks for genetic improvement have had limited success.
  - The availability of **artificial insemination** services is also limited due to a lack of high-quality germplasm, infrastructure, and technical expertise.
- Insufficient Credit Access:** Despite its significant contribution to the agricultural GDP, the livestock sector receives only around 12% of the overall state spending on agriculture and related industries.
  - **Financial institutions** have largely overlooked the sector, leading to reduced access to credit for livestock farmers.
- Lack of Transparency:** A considerable portion of the cattle population in India remains undocumented. Moreover, the markets for animal products are often dominated by unofficial middlemen.
- Inadequate Infrastructure and Services:** The livestock sector requires better infrastructure, including veterinary services, feed and fodder markets, and transportation facilities.
- Limited Technology Adoption:** The adoption of modern technologies and best practices in livestock management is relatively low. Farmers need better access to knowledge and training to improve their livestock-rearing techniques.
- Land Degradation and Water Scarcity:** Livestock grazing and rearing practices, if not managed sustainably, can lead to land degradation and exacerbate water scarcity issues in certain regions.

### GOVERNMENT INITIATIVES

<b>Development Programmes</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Rashtriya Gokul Mission</b> for development of cattle and buffalo breeds,</li><li><input type="checkbox"/> <b>National Programme for Dairy Development (NPDD)</b> for dairy development,</li><li><input type="checkbox"/> <b>National Livestock Mission (NLM)</b> for development of sheep, goat, pig, poultry and feed and fodder and</li><li><input type="checkbox"/> <b>Livestock Census and Integrated Sample Survey (LC &amp; ISS)</b> for carrying out of Census and sample survey.</li></ul>
<b>Disease Control programmes</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Livestock Health and Disease Control (LH&amp;DC) Scheme:</b> It is being implemented to supplement the State/UT governments efforts towards preventing, controlling and containing animal diseases of economic and zoonotic importance by vaccination.</li><li><input type="checkbox"/> <b>National Animal Disease Control Programme (NADCP):</b> It is being implemented to control Foot &amp; Mouth Disease and Brucellosis by completely vaccinating cattle, buffalo, sheep, goat and pig populations against Foot &amp; Mouth Disease and bovine female calves of 4-8 months of age against brucellosis.</li></ul>
<b>Infrastructure Development Fund</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>The Animal Husbandry Infrastructure Development fund (AHIDF).</b></li><li><input type="checkbox"/> <b>Dairy Infrastructure Development Fund (DIDF).</b></li><li><input type="checkbox"/> <b>Support to Dairy Cooperatives</b> and Farmer Producer Organizations engaged in Dairy activities.</li><li><input type="checkbox"/> The above schemes incentivize to establish and strengthen the <b>Dairy Processing and Value Addition Infrastructure</b>, Meat Processing and Value Addition Infrastructure, <b>Animal Feed Plant</b> and <b>Breed Multiplication Farms</b> which are technologically improved.</li><li><input type="checkbox"/> <b>E-Pashu Haat Portal:</b> This portal is for connecting breeders and farmers regarding availability of quality bovine germplasm.</li></ul>

## FARM MECHANISATION IN INDIA

### CONTEXT

The standing committee on agriculture, animal husbandry and food processing (2022-23) has released a report on 'R&D in farm mechanisation for small and marginal farmers in the country'.

### KEY HIGHLIGHTS OF THE REPORT

- Currently**, the overall **agricultural mechanisation level** in the country is **around 47%** which is lower than that of other developing countries such as China (59.5%) and Brazil (75%).
- The report noted that **between FY20 and FY23**, the agriculture ministry allocated **30% less funds** (Rs 217 crore in FY20 to Rs 179 crore in FY23) **for R&D** to farm mechanisation scheme.
  - The panel has urged the agriculture ministry to **strive for achieving 75%** in farm mechanisation in a much shorter period than 25 years earlier.
- The government must **increase investment in R&D** for farm mechanisation especially for the small and marginal farmers as it plays a critical role in increasing agricultural productivity, the report noted.
- The panel has noted that **contribution of agricultural mechanisation** in India leads to saving in seed (15%-20%), fertilizer (15%-20%), cropping intensity (5%-20%), increase in crop yield (13%-23%), improvement in germination rate (7%-25%), labour cost (20%-30%).

### WHAT IS FARM MECHANISATION?

- Farm mechanisation, also known as **agricultural mechanisation**, is the process of utilizing machinery and equipment to replace or supplement human and animal labor in various agricultural activities.
- It involves the adoption of technology, such as **tractors, harvesters, seeders, irrigation systems**, and other automated tools, to perform tasks that were traditionally done manually.
- The primary goals of farm mechanisation are to increase **efficiency, productivity, and profitability** in agriculture while reducing the physical burden on farmers.
- Additionally, mechanisation can have a **positive impact on sustainable agriculture practices** by optimizing resource utilization and minimizing the environmental footprint of farming activities.

### THE NEED FOR MECHANISATION IN INDIAN AGRICULTURE

- Enhanced Productivity and Cost Reduction:** Utilizing appropriate machinery can significantly boost farm productivity, potentially **increasing yields by up to 30%** while **reducing input costs** by approximately **20%**.
  - This becomes especially crucial for **small landholders** in India, where **non-tractor farm equipment** is better suited to cater to the needs of marginal farmers.
  - Currently, about **86% of the total land holdings** in India are in **small and marginal** size groups.
- Reduced Work Burden and Increased Efficiency:** Most of the workforce in agriculture in India are females, and the usage of machines can reduce their work burden and increase their efficiency.
  - Nearly **63% workers are female** in the agriculture sector at the pan-India level, according to the annual **Periodic Labour Force Survey (PLFS) Report 2021-22**.
- Environmental Sustainability:** Efficient use of land, water, and energy in mechanized farming contributes to environmentally responsible practices.
- Outward Migration of Educated Youth:** Farm mechanisation can also aid in outward migration of educated youth from the farm sector and help them to contribute better in other sectors.
- Addressing Escalating Labor Costs:** The rising cost of labor for agricultural operations necessitates the adoption of farm mechanisation to reduce labor expenses and overall cultivation costs.
- Mitigating Seasonal Labor Shortages:** During peak agricultural seasons, there is often a shortage of available labor. Farm mechanisation offers a reliable solution to cope with this labor scarcity.
- Improved Crop Quality:** Mechanised equipment is designed to perform farming operations with precision and accuracy, leading to better crop quality.

- Precision Agriculture:** Mechanisation facilitates the adoption of precision agriculture techniques, including GPS-guided systems and data-driven decision-making, resulting in optimized resource allocation and reduced wastage.

### **CHALLENGES FOR FARM MECHANISATION IN INDIA**

- Small and Fragmented Land Holdings:** Small farmers face challenges in affording even minor farming equipment, making it difficult for them to adopt mechanisation.
- High Initial Investment:** Farm mechanisation requires a significant upfront investment, which can be a deterrent for many farmers, especially those with limited financial resources.
- Low Awareness Among Farmers:** A lack of awareness about different types of machinery and their proper usage hinders the adoption of mechanization.
- Quality and after-sales service:** Since most of the equipment's are made by unorganized sectors, there is inadequate quantity and quality of service centres for proper maintenance.
- Absence of Industry-Specific Classification:** The farming machinery industry lacks a specific National Industrial Classification Code (NIC Code), leading to products being scattered across various codes and not being recognized or classified as a distinct industry.
  - **The National Industrial Classification Code** is a statistical standard for developing and maintaining a data base for various economic activities under a particular industry.
- Access to Finance:** Limited access to credit and finance options for farmers to invest in mechanised equipment can hinder the widespread adoption of modern farming technologies.
- Adaptability to Local Conditions:** Some farm machinery may not be well-suited for the diverse and challenging terrains and conditions found in different regions of India.
- Shortage of Skilled Workers:** Fabrication of agricultural tools and machinery is often done by semi-skilled workers without proper tools, thereby reducing their quality and efficiency.

### **GOVERNMENT INITIATIVES**

- Sub Mission on Agricultural Mechanization (SMAM):** Its a Centrally Sponsored scheme, launched by the Government of India in 2014-15.
  - The scheme aims at 'reaching the unreached' by making farm machines accessible and affordable for **small and marginal farmers (SMFs)** through the establishment of **Custom Hiring Centers (CHCs)**, creating **Hubs for hi-tech & high-value farm equipment**, and **Farm Machinery Banks**.
  - Under this scheme, **financial assistance @ 40% to 50%** of the cost of machines depending on the categories of farmers, is provided for purchase of agricultural machines.
- Farm Mechanisation is integrated as a key objective in schemes such as:**
  - Rashtriya Krishi Vikas Yojana (RKVY),
  - National Food Security Mission,
  - Mission for Integrated Development of Horticulture,
  - National Mission on Oilseeds and Oil Palm.

### **WAY FORWARD**

- Long-term Action plan:** A long term vision to make India a production and export hub for Non-tractor farm equipments, along with an efficient action plan to tackle the current challenges.
- Indigenization:** Make in India can be used to support local manufacturing of farm implements currently being imported.
- CSR Funding:** Corporate Social Responsibility (CSR) funds can be used for the capacity-building initiative in the farm equipment space as well as promoting a sustainable agricultural ecosystem.
- Streamlining Financing Options:** The government can work with financial institutions to ensure hassle-free access to credit for purchasing farm equipment.
- Public-Private Partnerships (PPPs):** Encouraging PPPs in the farm mechanization sector can bring together the strengths of the government, private enterprises, and farmer cooperatives.

- Skill Development and Training:** Comprehensive training programs should be initiated to equip individuals with the necessary expertise in manufacturing, servicing, and operating modern farm machinery.
- Institutionalized Framework for CHCs:** The unorganized sector of Custom Hiring Centers (CHCs) should be integrated into a well-structured institutional setup. This could involve the establishment of cooperatives or associations, providing them with access to formal credit, technology, and training to enhance their efficiency and service quality.



## SECURITY

### CYBER SECURITY REGIME IN INDIA

#### CONTEXT

The Union Home Minister highlighted the importance of **multilateral cooperation** in safeguarding nations against **emerging cyber threats** at the recently concluded **G20 conference** on “Crime and Security in the Age of NFTs, AI, and Metaverse” at Gurugram.

#### WHAT IS CYBER SECURITY?

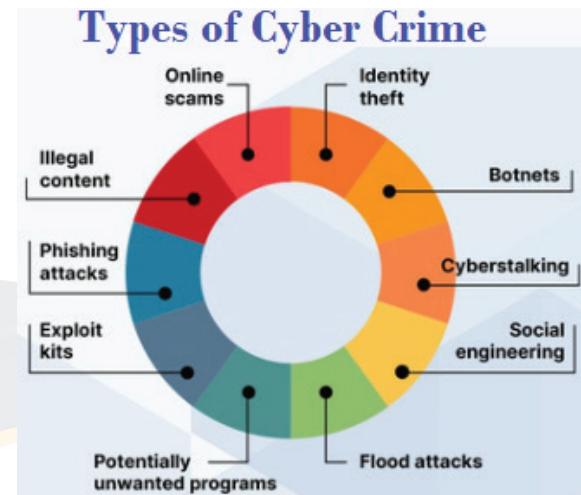
- Cybersecurity refers to the practice of **protecting computers, servers, networks, electronic systems, and digital data** from unauthorized access, theft, damage, or disruption.
- It involves implementing measures and **employing technologies** and processes to ensure the **confidentiality, integrity, and availability** of information and systems.
- Cybersecurity is necessary to protect **sensitive data**, preserve **operational continuity**, and mitigate **financial risks** posed by evolving **cyber threats and crimes** in the digital landscape.

#### VARIOUS ELEMENTS OF CYBER SECURITY

- **Application security:** Applications play an essential role in business ventures; that is why every firm needs to focus on web application security. Web application security is important in order to protect customers, their information and interests.
- **Information security:** Information includes business records, personal data, customer's data, intellectual property etc; hence, it is important for a corporation to have strong cyber security for information to prevent its leakage.
- **Network Security:** Network security consists of protecting the usability and reliability of network and data. Measures to secure networks, including firewalls, intrusion detection and prevention systems (IDPS), virtual private networks (VPNs), and network segmentation.
- **Disaster Recovery/ Business continuity planning:** It is about being prepared for any kind of interference or cyber threat by identifying threats to the systems on time and analyzing how it may affect the operations and methods to counter that threat.
- **Operational security (OPSEC):** It is used to protect organization functions. It identifies important information and assets to track down threats and vulnerabilities that exist in the functional method.
- **End-user education:** It is important for an organization to train their employees about cyber security because human error is one of the major causes of data breaches.

#### WHY INDIA NEEDS TO SECURE ITS CYBER SPACE?

- **Increasing cybercrimes:** As per the **NCRB data from “Crime in India, 2020”**, Cybercrimes have increased four times or 306 percent in the past four years and rate of cybercrime (incidents per lakh population) increased in 2020.
  - India saw a 53 per cent increase in ransomware incidents in 2022 (year-over-year), according to the **“India Ransomware Report 2022” published by the CERT-In.**
- **Digital India:** According to a report, the value of digital payments in India will grow close to 1 trillion dollars in FY26 from **300 billion dollars in FY21.**
- **Critical Infrastructure:** India's critical infrastructure, including power plants and power distribution, healthcare, railways and banking, have **witnessed increasing cyberattacks**, allegedly from Chinese state-sponsored groups.
- **Cyber Defence:** Presently, the nature of the war in Ukraine indicates that India needs to review its cyber-defence policies. India also needs to give equal attention to building a **deterritorial cyber-offensive capability.**



- Offensive cybersecurity strategies **preemptively identify vulnerabilities** and security weaknesses before an attacker exploits them.
- Terrorism:** As per a report by the **International Institute for Counter Terrorism**, hacktivism activities have **increased in Southeast Asia**, including website defacement, distributed denial-of-service (DDoS) attacks and information leaks. Such threats will increase in the coming times.

### CURRENT CYBER SECURITY ARCHITECTURE IN INDIA

- National Cyber Security Policy, 2013:** It was the first comprehensive document brought out by government to create a secure and resilient cyberspace ecosystem and strengthen the regulatory framework.
  - It aims to protect information infrastructure in cyberspace, **reduce vulnerabilities**, build capabilities to prevent and **minimize damage** from cyber incidents through a combination of **institutional structures, people, processes, technology and cooperation**.
- National Cyber Security Strategy 2020:** It was conceptualized by the National Security Council Secretariat to ensure a safe, secure, trusted, resilient and **vibrant cyberspace for Nation's prosperity**.
  - **Pillars of strategy** are Secure (the National Cyberspace), Strengthen (Structures, People, Processes, Capabilities), and Synergise (Resources including Cooperation and Collaboration).
- Institutional mechanism:**
  - **Indian Cyber Crime Coordination Centre (I4C):** It was rolled out by Ministry of Home Affairs for the period 2018-2020 to combat cybercrime in the country, in a coordinated and effective manner.
  - **Indian Computer Emergency Response Team (CERT-In):** It serves as national agency for responding to cyber security incidents as per provisions of IT Act, 2000. It issues alerts and advisories regarding latest cyber threats/vulnerabilities and counter measures to protect computers and networks on regular basis.
  - **Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre):** It has been launched for detection of malicious programs and provide free tools to remove the same. o National Cyber Crime Reporting Portal: It caters to complaints pertaining to cybercrimes only with special focus on cybercrimes against women and children.
  - **National Cyber Coordination Centre (NCCC):** It is multi-stakeholder cybersecurity and e-surveillance agency, under CERT-In. It generates situational awareness of existing and potential cyber security threats and enable timely information sharing for proactive, preventive and protective actions by individual entities.
  - **National Critical Information Infrastructure Protection Centre (NCIIPC):** It is created under IT Act, 2000 (amended 2008) and designated as National Nodal Agency to facilitate safe, secure and resilient information infrastructure for critical sectors of the Nation.

### CHALLENGES AND CONCERNs IN INDIA'S PREPAREDNESS OF CYBER WARFARE

- Lack of comprehensive strategy:** Unlike the US, India still lacks a comprehensive, modern, and updated cyber warfare strategy. In the preset capacity, India can only address cybersecurity attacks and not cyber warfare.
- Lack of Strong Security Culture:** India lacks a strong security culture which is quite imperative in the cyber security domain.
- Lack of Awareness:** Women and children are increasingly becoming victims of cybercrimes such as pornography, stalking, cheating, and hacking.
- "Whack-a-mole" approach:** India's current approach adopts a reactionary "whack-a-mole" approach rather than creating deterrence.
  - "Whack – a – Mole' approach is a style of managing or leading others where a **manager waits for something he/ she believes to be wrong** to happen, and "whacks" the behavior with words and/or actions.
- Shortage of Technical Staff for the Investigation of Cybercrime:** There have been half-hearted efforts by the States to recruit technical staff for the investigation of cybercrime.
  - **A regular police officer** may be unable to understand the nuances of the working of a computer or the Internet.
  - It is only a **technically qualified staff** who could acquire and analyze digital evidence.

### WAY FORWARD

- National Cybersecurity Strategy:** The Union Government is in the process of formulating a National Cyber Security Strategy which will holistically look at addressing the issue of security of national cyberspace.

- **Increased Participation and Awareness:** There needs to be enhanced private and public sector participation along with data protection efforts to prevent frequent cyberattacks.
- **Technological Updation:** India also needs to study the evolving tactics, techniques, and procedures (TTPs) of hackers and criminals to be able to prevent these attacks. The cyber forensic laboratories of States must be upgraded with the advent of new technologies.
- **Data localisation:** Most cyber crimes are trans-national in nature with extra-territorial jurisdiction. The collection of evidence from foreign territories is not only a difficult but also a tardy process.
  - Therefore, 'data localisation' must feature in the proposed **Personal Data Protection law** so that enforcement agencies are able to get timely access to the data of suspected Indian citizens.
- **Human Resource Development:** There is a need to introduce new courses, curriculum and academic institutions in the field of cyber security, ethical hacking, cryptology etc. to boost human resource in the field of cyber warfare.
- **Synergy and Coordination:** There is a need for coordination, planning, understanding and synergy of efforts amongst all civil, military, intelligence, law enforcement and educational organisations responsible for cyber security, information assurance, cyber warfare and perception management.
- **Budget Allocation:** A Parliamentary Standing Committee has recently recommended that funds for cyber security may be increased on a year on basis to forestall any failures in this domain for sheer lack of funds.

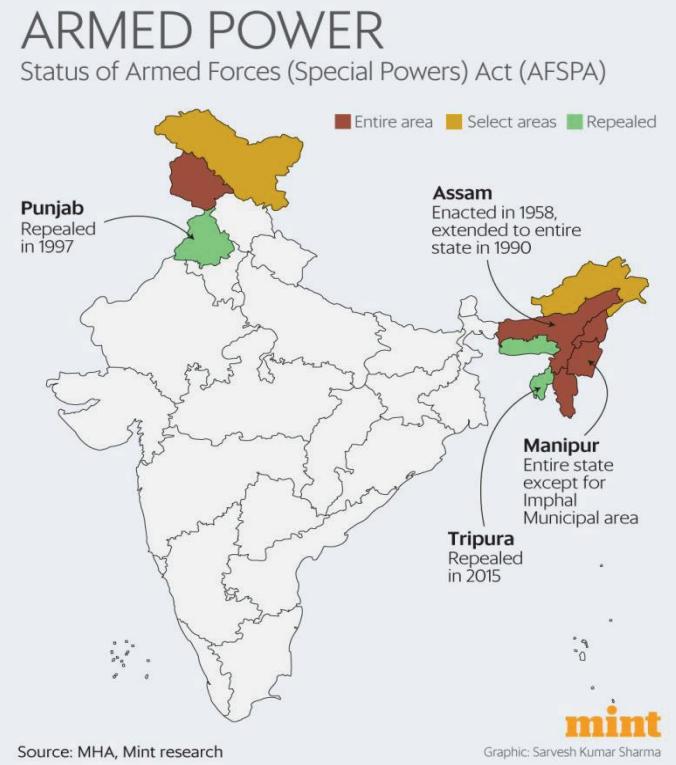
## ARMED FORCES SPECIAL POWERS ACT (AFSPA)

### CONTEXT

Operating without the legal cover provided by the Armed Forces Special Powers Act (AFSPA) is a major limitation that security forces are facing in Manipur, Army sources say.

### ABOUT THE ARMED FORCES SPECIAL POWERS ACT (AFSPA), 1958

- **Origin:** The Act in its original form was promulgated by the British in response to the **Quit India movement** in **1942**.
  - After Independence, the act was retained, **first** brought in as an **ordinance** and then notified as an **Act in 1958**.
- **Objective:** The act provides certain special powers to armed forces members operating in disturbed areas in the State of **Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura**.
- The Act is enforced by the **Ministry of Home Affairs**.
- **Reasons for imposition:**
  - **Tackle secessionist movements:** The north-eastern states of Nagaland, Mizoram, Assam, Manipur etc. witnessed a rise in secessionist activities, aiming to break away from India. The law aimed to overcome these movements by giving extraordinary powers to the armed forces.
  - **Naga movement:** The initial aim of the AFSPA was to overcome the Naga movement. The law was passed in Parliament, and subsequently imposed on the entire state. It was subsequently extended to other disturbed areas.
- **Disturbed Area:** A disturbed area is declared under **Section 3 of the AFSPA**.
  - An area can be disturbed due to **differences or disputes** between members of different religious, racial, language or regional groups or castes or communities.



- The **Union Government or the Governor** of the State or administrator of the Union Territory can **declare the whole or part of the State or Union Territory** as a disturbed area.

**Powers under AFSPA:**

- **Firing:** The **armed forces** and the **Central Armed Police Forces** deployed in specified “disturbed areas” can **fire and kill** anyone acting in accordance with law.
- **Arrest and detention:** Arrest anyone based on **suspicion**, without a **warrant**. Individuals **arrested and taken into custody** under this act have to be handed over to the **officer in charge** of the nearest police station.
- **Search:** Security forces can search any **premises** without a **warrant**. They can **stop and search** any vehicle based on suspicion.
- **Protection from prosecution:** Security forces are given **protection** from **prosecution and legal suits**. The Central government’s **sanction** is required for prosecution.
- **Destruction:** Destroy any **arms dump, hide-outs, fortified shelter** from which armed attacks are carried out.
- **Judicial review:** There shall not be any **judicial review** of the government’s **judgment** on why an area is found to be **disturbed**.

**Amendments:**

- The act was amended in 1972 to give **powers** to the **Central government**, along with the States, to declare an area as “**disturbed**”.
- Based on the mandate, the Home Ministry issues periodic “**disturbed area**” notification, to extend **AFSPA** for the states of **Nagaland and Arunachal Pradesh**.
- The notification for extending AFSPA in **Manipur and Assam** is issued by the **respective State** governments.

### **SIGNIFICANCE OF AFSPA**

- Effective Counter-Insurgency:** The fighting capability of the militants in the North-East and J&K has improved considerably. Hence, with the powers given by AFSPA, the armed forces have been able to protect the borders of the country for decades.
- Operational Hurdles:** The Armed Forces are required to operate in hostile terrain, facing an unfriendly population environment exposing themselves to grave dangers.
- Legal Battles:** Working under a challenging environment requires a protective law otherwise the forces get embroiled in legal battles and their effectiveness is reduced.
- Effective Law and Order:** The provisions of the AFSPA are invoked only when the State Government is unable to maintain peace and tranquility.
- Success of AFSPA so far:**
- **Decline in extremist incidents:** Compared to 2014, there has been a 76% reduction in the extremist incidents in the year 2022.
  - **Decline in fatalities:** Deaths of security personnel and civilians have reduced by 90% and 97% respectively during this period.
  - **Decline in areas under imposition:** The improvement in security situation has allowed Disturbed Area notification under the AFSPA to be completely withdrawn from Tripura in 2015 and Meghalaya in 2018.

### **CRITICISM OF AFSPA**

- Alienating people of north-east:** The use of force to overcome popular movements has further alienated people of north-east. Many families have lost their loved ones to military actions. People of the region feel alienated from India.
- Violation of human rights:** India’s judicial organs and other international groups have described AFSPA as a symbol of oppression. There are widespread instances of extended custody and torture by the security forces. Innocents have suffered under the draconian law.
- Misuse by armed forces:** Security forces have used the law for their own personal benefits. There were instances of them carrying out kidnapping and extortion under the protective veil of AFSPA.
- Encroaching upon the powers of the state governments:** Security personnel operating in AFSPA areas work parallel to the state security forces. Their actions sometimes encroach upon the jurisdiction of state security agencies.

**Incidents of misuse of AFSPA law**

- The Mon incident:** Armed Forces fired upon a group of civilians returning from work in 2021, assuming they were members of the banned outfit NSCN (K). Civilians lost their lives owing to the firing but Armed Forces Personnel responsible for the incident were not charged due to immunity under AFSPA.
- The Malom Incident:** In 2000, 10 civilians waiting at the bus stop were killed by the 8th Assam Rifles at Malom town, near Imphal's Tulihal airport. It was alleged to be a fake encounter. Following the incident, Irom Sharmila went on a hunger strike, demanding complete withdrawal of AFSPA.
- Tinsukia Fake encounter:** In 1994, 18 Punjab regiments picked up nine youths from their homes following the death of a Tea estate manager, who was allegedly killed by members of ULFA. Following a Habeas Corpus petition, 4 of them were released while the rest of them were shot dead in a remote location.

**JUDICIAL PRONOUNCEMENTS ON AFSPA**

- Naga People's Movement of Human Rights vs. Union of India (1998):** The Court held that the act **cannot** be considered as **violative of the Constitution** and the powers conferred under the Act are **not arbitrary and unreasonable** and therefore not in violation of the provisions of the Constitution.
  - However, the court held that the army personnel are required to **strictly follow minimum force** under Section 4 against suspicion of violating prohibitive orders.
  - Also, the act has to be **reviewed every six months** by the state.
- July 2016 judgement:** The Supreme Court directed the armed forces and police not to use "excessive or retaliatory force" in even areas declared 'disturbed' where the AFSPA is applicable.
- July 2017 judgement:** Supreme Court's judgement on alleged unlawful encounter killings in Manipur marked an important institutional step.
  - The Supreme Court **overruled the objections of the Centre and the Army** and ordered the **Central Bureau of Investigation** to set up a special investigation team to probe encounter deaths.

**RECOMMENDATIONS BY VARIOUS COMMITTEES**

- B P Jeevan Reddy Committee (2005):** The committee was also of the view that the act is inadequate in several provisions. The committee also said that the law must be reviewed and security forces must be brought under the purview of ordinary criminal law rather than under army law.
- Santosh Hegde committee (2013):** The committee was of the view that if greater power was given then greater would be the restraint and stricter would be the mechanism to prevent its misuse or abuse.
- The 5th report of the **Second Administrative Reforms Commission** on public order has also recommended the **repeal of the AFSPA**.

**WAY FORWARD**

- Building trust and community involvement:** The armed forces should actively engage with the local population and work towards building trust and understanding.
- Ensuring justice for victims:** It is important for the security forces and the government to expedite pending cases and establish a transparent process to address allegations of human rights violations by the forces.
- Strengthening local law enforcement:** State governments should focus on strengthening the local law and order machinery. If the local police can effectively handle security situations, the need for AFSPA might diminish, allowing for its withdrawal from the region.
- Case-by-case application:** The government should consider implementing and lifting AFSPA on a case-by-case basis, limiting its application to specific districts facing significant disturbances rather than applying it to the entire state.
- Restoring normalcy and development:** It is crucial to restore normalcy in the region for India to fulfill its Act East policy and leverage the Northeast as a gateway to Southeast Asia. Demilitarization and addressing the underlying issues can contribute to long-term stability, allowing for the region's socio-economic development.

## ENVIRONMENT

### FOREST (CONSERVATION) AMENDMENT BILL, 2023

#### CONTEXT

The Lok Sabha passed the Forest Conservation (Amendment) Bill 2023, which seeks to amend the **Forest (Conservation) Act, 1980**.

#### Background: The Forest (Conservation) Act, 1980

- The Forest Conservation Act 1980 is an important legislation enacted by the Government of India to regulate the **diversion of forestland for non-forestry purposes**.
- The Act was passed in response to the growing concern over the **rapid depletion of India's forests**, which had serious environmental and ecological consequences.
- Key features of the Forest (Conservation) Act, 1980:**
  - **Central government approval:** The Act mandates that the diversion of forestland for non-forestry purposes can only be approved by the central government.
  - **Consultation:** The Act mandates that state governments and tribal communities be consulted before approving the diversion of forestland. The consultation process ensures that the views of local stakeholders are taken into account, and their concerns are addressed.
  - **Compensation for loss of forest cover:** The Act requires the payment of compensation for the loss of forest cover due to the diversion of forestland. The amount of compensation is based on the net present value of the diverted forestland, and the funds collected are utilized for afforestation and reforestation activities.
  - **Mandatory undertaking for compensatory afforestation:** The Act requires that an equal area of non-forest land be afforested or reforested as a compensatory measure for the loss of forestland due to diversion. The undertaking for compensatory afforestation is mandatory and non-compliance can result in penalties.
  - **Deemed forests:** The Act recognizes the concept of "deemed forests," which refers to areas that are not officially classified as forests but are ecologically sensitive and have forest-like characteristics. Such areas are also subject to the Act's provisions and require the central government's approval for any diversion.
  - **Penalties for violation:** The Act provides for penalties, including imprisonment of up to 15 months and a fine of up to Rs. 10,000, or both, for violation of its provisions.

#### KEY HIGHLIGHTS OF THE FOREST (CONSERVATION) AMENDMENT BILL, 2023

- Land under the purview of the Act:** The Bill amends the Forest (Conservation) Act, 1980 to make it applicable to certain types of land. These include land notified as a forest under the Indian Forest Act, 1927 or in government records after the 1980 Act came into effect. The Act will not be applicable for land converted to non-forest use before December 12, 1996.
- Exempted categories of land:** It also exempts certain types of land from the purview of the Act. These include land within 100 km of India's border needed for national security projects, small roadside amenities, and public roads leading to a habitation.
- Assignment/leasing of forest land:** The state government requires prior approval of the central government to assign any forest land to a private entity. The Bill extends this to all entities, and allows the assignment to be made on terms and conditions specified by the central government.
- Permitted activities in forest land:** The Act specifies some activities that can be carried out in forests, such as establishing check posts, fencing, and bridges. The Bill also allows running zoos, safaris and eco-tourism facilities.

#### CRITICISM OF THE BILL

- Dilution of forest protection:** One of the major objections raised is that the proposed amendments dilute the Supreme Court's 1996 judgment in the Godavarman case, which extended protection to wide tracts of forests, even if they were not officially recorded as forests. Critics argue that the amendments compromise the integrity of forest protection.
- Exemptions in geographically sensitive areas:** The bill exempts the construction of highways, hydel power projects, and other projects in geographically sensitive areas within 100 km of international borders or the Line of Control from requiring forest clearance. This exemption is seen as problematic and could potentially lead to environmental degradation in sensitive regions.
- Lack of central protection for deemed forests:** The amendments remove central protection for vast tracts of so-called "deemed forest" areas, which are forests not officially recorded as forests. This removal of protection raises concerns about

the integrity of these forests and opens them up to activities such as tourism, which could further compromise their ecological balance.

- Diversion for commercial purpose:** The bill limits the application of Forest Conservation Act to ensure diversion of forests for use by public and private sector and advance the agenda for 'ease of businesses'.
- Insufficient focus on dense forests:** While the amendments encourage plantation cultivation to increase tree cover, critics argue that they fail to address the loss of dense forests. The focus on increasing tree cover through plantations may not effectively tackle the decline in regions classified as dense forest, where the canopy density is higher.

#### Evolution of Forest Laws in India

- Memorandum on forest conservation 1856:** For the first time, in 1856, **Lord Dalhousie** emphasized the need for a definite forest policy.
  - Railways were first introduced to India in 1853. Increasing difficulty of obtaining adequate **supplies of timber** was one of the main reasons for this cognisance.
- The Indian Forests Act of 1865:** The **Imperial Forest Department**, set up in 1864, attempted to establish British control over forests, by various legislations.
  - It empowered the British **government to declare any land** covered with trees **as a government forest** and make rules to manage it.
- The Forest Act of 1878:** By the Forest Act of 1878, the British Administration acquired the sovereignty of all wastelands which by definition included forests.
  - **This Act classified the forests into three** – reserved forests, protected forests and village forests.
  - Degree of protection: Reserved forests > Protected forests > Village forests
  - It attempted to **regulate the collection of forest produced** by forest dwellers and some activities declared as offenses.
- The Indian Forest Act, 1927:** This Act impacted the life of forest-dependent communities.
  - The penalties and procedures given in this Act aimed to extend the state's control over forests as well as diminishing the status of people's rights to forest use.
- Indian Forest Policy, 1952:** The Indian Forest Policy, 1952 was a **simple extension of colonial forest policy**.
- Forest Conservation Act, 1980:** It was enacted by the Parliament of India in order to control the ongoing deforestation of the forests of India.
- National Forest Policy 1988:** This was a drastic shift in the approach towards management of forests.
  - The National Forest Policy 1988 envisages to have a minimum of **one-third of the total land area of the country under forest or tree cover**.

## LIGHTNING AS A NATURAL DISASTER

### CONTEXT

The Union government has declined the request of several state governments to declare lightning as a natural disaster.

### MORE ON THE NEWS

- The union government declined the request as it **opines that deaths caused by lightning can be prevented** by making people aware of safety measures.
  - **India is among only five countries** in the world that has an **early warning system for lightning** — the forecast is available from five days to up to three hours.
- The States such as Bihar and West Bengal** have been demanding that lightning deaths be covered as a natural disaster.
  - Once this is notified, the victims will be entitled to **compensation from the State Disaster Response Fund (SDRF)**. The Centre makes 75% of the contribution to the SDRF.
  - Cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslip, avalanche, cloudburst, pest attack, frost and cold wave are now considered disasters under the SDRF.

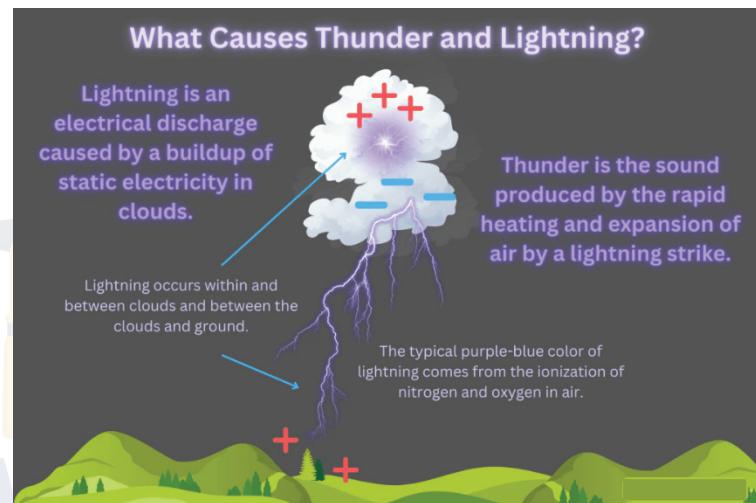
### WHAT IS A NATURAL DISASTER?

- A disaster is a result of **natural or man-made causes** that leads to **sudden disruption** of normal life, causing **severe damage to life and property** to an extent that available social and economic protection mechanisms are **inadequate to cope**.

- In India, the criteria for declaring a disaster as a **natural disaster** are typically based on the guidelines provided by the **National Disaster Management Authority (NDMA)**.
  - **Non-Anthropogenic:** The disaster should not be primarily caused by human activities or interventions and should result from natural phenomena beyond human control.
  - **Impact:** The disaster should cause significant damage, loss of life, or disruption to the environment, infrastructure, or socio-economic activities, requiring specialized response and recovery measures.
  - **Verification:** The occurrence and impact of the disaster should be verified and confirmed by relevant government authorities, scientific institutions, or disaster management agencies.
  - **Recognition:** The disaster should be recognized as a natural disaster by the concerned state or central government authorities responsible for disaster management.

## **ABOUT LIGHTNING**

- Lightning is a **natural electrical discharge** that occurs during thunderstorms.
- It is a sudden and powerful release of electrical energy **between the clouds and the ground** or between **different regions within a cloud**.
- The phenomenon is caused by the **buildup of electrical charges** within the clouds, as well as between the clouds and the Earth's surface.
- When the **electrical potential difference** between these charged regions **becomes significant**, it results in a **rapid discharge of electricity** in the form of a bright flash of light known as lightning.
- This electrical discharge can be extremely hot, reaching temperatures of up to **54,000 degrees Fahrenheit (30,000 degrees Celsius)**, which is about five times hotter than the surface of the Sun.
- The **rapid expansion of heated air** around the lightning channel creates a **shockwave** that we hear as **thunder**.
- **Thunder is the sound produced** due to the superheated air rapidly **expanding and then contracting** as it cools down.



## **LIGHTNING STRIKES IN INDIA**

- **Lightning Strikes:** There were **18.5 million lightning strikes** in the country between **April 2020 and March 2021** – 34% higher than the previous year – according to the **Climate Resilient Observing Systems Promotion Council**.
  - The **Indian Institute of Tropical Meteorology, Pune**, has also reported a sharp **uptick in strikes in the decade since 1995**.
- **Deaths due to Lightning:** According to a report by the Lightning Resilient India Campaign, **90,632 people died** by lightning between **1972 and 2019**.
  - **National Crime Records Bureau (NCRB)** data show that 2,880 people died in lightning strikes in 2021. While 2,862 people died in 2020, the number stood at 2,876 in 2019.
  - These deaths made up **40% of all accidental deaths** caused by "**forces of nature**".
  - **According to IMD**, the **frequency of lightning** was the highest in northeastern States and in West Bengal, Sikkim, Jharkhand, Odisha and Bihar, but the **number of deaths** is higher in the central Indian States of Madhya Pradesh, Maharashtra, Chhattisgarh and Odisha.

## **IMPACT OF LIGHTNING STRIKES**

- **Injuries and Fatalities:** People caught outdoors during lightning storms are at risk of being struck by lightning, which can lead to serious injuries or even death.
  - **Approximately 6000-24,000** people are killed by lightning strikes **yearly** around the world.
- **Wildfires:** When lightning strikes dry vegetation, it can start a fire that can spread rapidly, causing damage to forests, wildlife habitats, and property.

- Lightning is the major cause of the **natural ignition of wildfires** worldwide and produces the largest wildfires in some regions.
- Property and Infrastructure Damage:** Lightning strikes can damage buildings, power lines, communication systems, and other infrastructure
- Agriculture Sector:** Frequent lightning strikes adversely impact small and marginal farmers.
  - **Around 77 per cent of farmers** are killed due to lightning as they work in agricultural fields during the Kharif cropping season in the monsoon period.
- Impact on Wildlife:** Lightning strikes can harm wildlife populations, either through direct strikes or by causing wildfires that destroy their habitats and food sources.
- Rural Areas:** Mainly, rural and forest areas are the most vulnerable due to lightning because of the presence of water bodies and tall trees, with almost 96 per cent of deaths occurring in rural areas compared to urban areas.
- Tribal Population:** The Annual Lightning Report 2020-2021 confirms that 60-70 per cent of deaths occurred in tribal populations due to lightning in Jharkhand, Odisha, Madhya Pradesh, West Bengal, and other states.
- Environmental Nitrogen Fixation:** Lightning contributes to nitrogen fixation in the atmosphere, which is vital for enriching soil and supporting plant growth.

### LIGHTNING AND THE CLIMATE CHANGE

- In a 2015 study from California University, the university cautioned that a **rise in one degree Celsius** would result in a **12% increase in the frequency of lightning strikes**.
- Another study that was released in **Geophysical Research Letters** in March 2021 found connections between climate change and an **increase in lightning strikes in the Arctic**.

#### About the State Disaster Response Fund (SDRF)

- SDRF has been constituted under Section 48 (1) (a) of the **Disaster Management Act, 2005**.
- It was constituted based on the recommendations of the **13th Finance Commission**.
- It is the primary fund available with the State governments for responses to **notified disasters to meet expenditure for providing immediate relief**.
- It is audited by the **Comptroller and Auditor General of India (CAG)** every year.
- Contribution:**
  - The Centre contributes **75% of the SDRF allocation** for **general category States** and Union Territories and **90% for special category States** and Union Territories (northeastern States, Sikkim, Uttarakhand, Himachal Pradesh, Jammu and Kashmir).
  - The annual **Central contribution** is released in **two equal installments** as per the recommendation of the Finance Commission.
- Disaster (s) Covered under SDRF:** Cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves.
- Local Disasters:** A State Government may use up to **10% of the funds available** under the SDRF for providing immediate relief to the victims of natural disasters that they consider to be '**disasters**' within the **local context in the State** and which are not included in the notified list of disasters of the Ministry of Home Affairs.

## URBAN FLOODS

### CONTEXT

Delhi has been experiencing severe floods due to intense rainfall in the past few days. Experts have cited concerns such as floodplain encroachment and the lack of wetlands.

### WHAT IS URBAN FLOODING?

- Urban flooding refers to the **inundation of land or built-up areas**, particularly in **densely populated locations** such as cities, due to excessive rainfall that surpasses the capabilities of **drainage systems to handle the water**.
- Urban flooding is a major problem in **many parts of the world** and it is the **leading cause of global flood losses**.

## HOW IS URBAN FLOODING DIFFERENT FROM RURAL FLOODING?

- Flood intensity:** Urban flooding is significantly different from rural flooding as urbanization leads to developed catchments, which increases the flood peaks from 1.8 to 8 times and flood volumes by up to 6 times. Consequently, flooding occurs very quickly due to faster flow times.
- Vulnerability:** As urban areas are densely populated; people are more vulnerable to flooding and secondary effects of exposure to infection.
- Economic impact:** Urban areas being centers of economic activities have key infrastructure that has a bearing on the national and global economy.

## CAUSES OF URBAN FLOODS

- Meteorological factors:**
  - **Heavy rainfall:** Intense and prolonged rainfall events can overwhelm the capacity of urban drainage systems to handle the volume of water, leading to floods.
  - **Cyclonic storms and thunderstorms:** They can bring heavy rainfall, strong winds, and intense downpours, resulting in rapid runoff leading to urban flooding.
  - **Climate change:** Climate change has resulted in extreme weather events, exacerbating the frequency of heavy rainfall episodes characterized by short durations.
- Hydrological factors:**
  - **Overbank flow channel networks:** The presence or absence of well-designed and maintained drainage systems, such as canals, rivers, and stormwater channels, affects the capacity of an area to handle excess water during heavy rainfall.
  - **High tides in coastal cities:** Coastal cities face additional challenges, as high tides can impede the drainage of rainfall water into the ocean or other bodies of water. This can cause water to back up and flood urban areas.
- Anthropogenic Factors:**
  - **Land use changes and urbanization:** Extensive urbanization and land use changes, such as replacing natural surfaces with impermeable materials like concrete and asphalt, reduce the land's ability to absorb rainfall. This increases surface runoff and the risk of urban flooding.

**Example: Chennai Floods 2015** - The rapid and unplanned urbanization in Chennai, particularly the conversion of wetlands and water bodies into built-up areas, played a significant role in exacerbating the flooding.

- **Occupation of floodplains and obstruction of flood flows:** Building structures in flood-prone areas or obstructing natural watercourses can disrupt the natural flow of water during heavy rainfall events. This can cause water to accumulate and lead to flooding.

**Example: Mumbai Floods 2005** - The flood event in Mumbai was partly attributed to the occupation of floodplains and the obstruction of flood flows due to encroachments and improper land use.

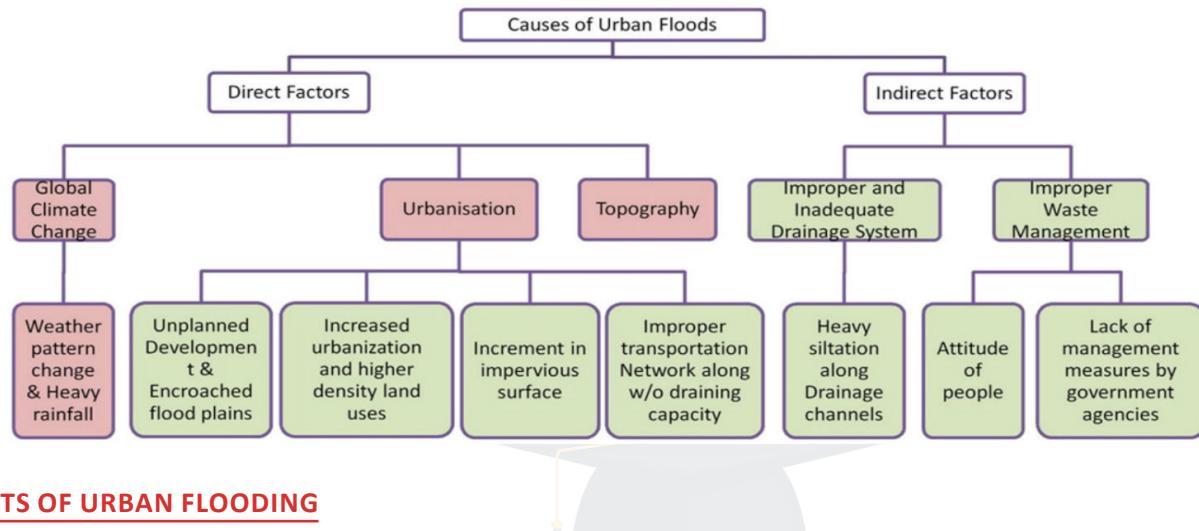
- **Urban heat island effect:** Urban areas often experience higher temperatures than surrounding rural areas, creating what is known as the urban heat island effect. This can influence weather patterns and increase localized rainfall, which can contribute to urban flooding.
- **Dam operations:** Sudden releases of water from upstream dams can result in a surge of water downstream, overwhelming urban areas. Conversely, failure to release water from dams during heavy rainfall can cause a backwater effect, where water cannot flow freely, leading to flooding.

**Example: Uttarakhand Floods 2013** - The devastating flood event in Uttarakhand was exacerbated by the sudden release of water from dams located upstream. Heavy rainfall combined with the release of water from dams caused flash floods and landslides, resulting in significant loss of life and infrastructure damage in the region.

- **Improper waste disposal:** Indiscriminate disposal of solid waste, such as garbage and debris, into urban water drains and channels can clog the drainage system. This obstruction impedes the flow of water during the monsoon season and increases the likelihood of urban flooding.

**Example: Bengaluru Floods 2017** - The improper disposal of solid waste, particularly the clogging of stormwater drains with garbage and debris, contributed to urban flooding in Bengaluru.

- **Illegal Mining Activities:** Illegal mining of river sand and quartzite for use in building construction deplete the natural bed of the rivers and lakes. It causes soil erosion and reduces the water retention capacity of the waterbody increasing the speed and scale of water flow.

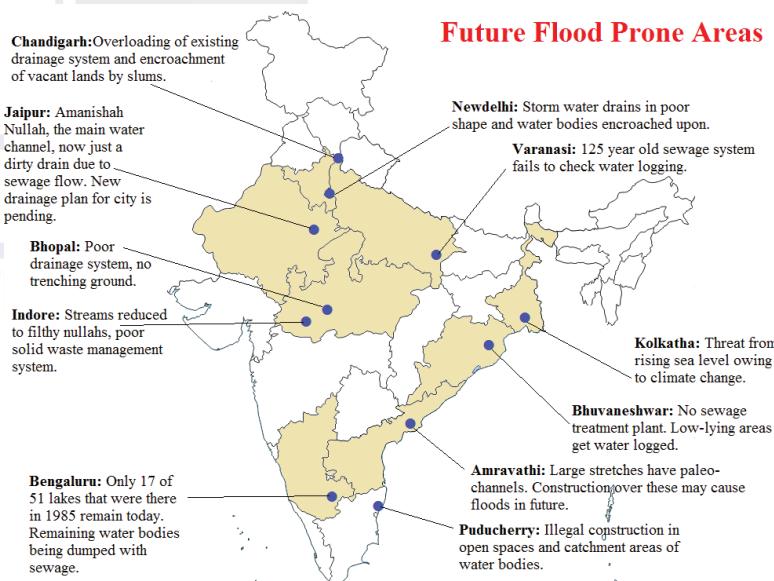


## IMPACTS OF URBAN FLOODING

- **Loss of Life and Property:** Urban flooding poses a direct threat to human life and can result in casualties and injuries. It also leads to damage and destruction of buildings, infrastructure, and personal property.
- **Disruption of City Functions:** Urban flooding can damage water supply systems, sewerage networks, power transmission lines, communication networks, transportation infrastructure (roads and railways), and other essential services.
- **Environmental Impact:** The force of floodwaters can uproot trees, destroy vegetation, and lead to soil erosion. It also washes pollutants, debris, and waste into rivers and other water bodies, harming aquatic ecosystems and contributing to water pollution.
- **Health Impacts:** Urban flooding increases the risk of waterborne diseases and the spread of infections. Contaminated flood water can carry pathogens, chemicals, and pollutants that pose health hazards to humans and animals.
- **Psychological Impacts:** loss of shelter, personal belongings, and the trauma of witnessing the destruction and potential loss of lives can lead to long-lasting emotional distress and post-traumatic stress disorder (PTSD).

## URBAN FLOOD RISK IN INDIA

- There has been an **increasing trend of urban flood disasters** in India over the past several years whereby major cities in India have been severely affected.
- **Recent events of urban floods** include Chennai floods of 2015 Mumbai floods of 2017, Guwahati floods of 2010, Bengaluru floods 2017 and Hyderabad floods of 2020.



- There will be a **rise in the frequency of floods** in India due to rise in temperatures **between 2070 and 2100**, according to **Climate Change and India: A 4x4 Assessment**, a report by the Union Ministry of Environment and Forest.
- Regions susceptible to floods**, according to the National Disaster Management Authority (NDMA), lie mostly along the **Ganga-Brahmaputra river basin**, from the **northern states of Himachal Pradesh and Punjab**, covering **Uttar Pradesh and Bihar** and stretching to **Assam and Arunachal Pradesh** in the northeast.
- The coastal states of Odisha and Andhra Pradesh**, parts of Telangana and Gujarat also witness yearly floods, NDMA observed.

### **NATIONAL DISASTER MANAGEMENT (NDMA) GUIDELINES ON URBAN FLOOD MANAGEMENT**

In 2010, NDMA had issued guidelines on Urban Flood Management in India:

- Create a **National Hydro-meteorological Network**.
- The guidelines say that for providing **early warning**, the Central Water Commission (CWC) should maximize the real-time **hydro-meteorological network** to cover all urban centers to **effectively deal with the problem of urban flooding**.
- Use of **Doppler Weather Radars** to be expanded to cover all urban areas in the country.
- An inventory of the existing stormwater drainage system to be prepared. The inventory will be both watershed-based and ward-based.
- Catchment to be the basis for planning** and designing the stormwater drainage systems in all ULBs (Urban Local Bodies).
- All future road and rail bridges** in cities crossing drain to be designed such that they do not block the flows resulting in **backwater effect**.
- Every building in an urban area must have **rainwater harvesting as an integral component** of the building utility.
- Low-lying areas in cities have to be reserved for parks** and other low-impact human activities.
- Encroachments** on the drain should attract **penal action**.
- Pre-monsoon desilting** of all major drains to be completed by March 31 each year.
- Urban Flooding** has to be dealt with as a **separate disaster**, de-linking it from riverine floods which affect the rural areas.
- Suitable interventions** in the drainage system like **traps, trash racks** can be provided to reduce the amount of **solid waste** going into the storm sewers.
- Inlets to be provided on the roads** to drain water to the roadside drains and these have to be designed based on current national and international practices.
- Concept of Rain Gardens** to be incorporated in planning for public parks and on-site stormwater management for larger colonies and sites that are to be developed.
- Flood hazard assessments** should be done on the basis of projected future scenarios of intensities and duration of the rainfall and land-use changes.

### **WAY FORWARD**

- Climate-Resilient Infrastructure:** Develop climate-resilient infrastructure that can withstand extreme weather events and effectively manage water runoff. This includes incorporating green infrastructure, such as bioswales, permeable pavements, and rooftop gardens, which can absorb and store rainwater.
- Early Warning Systems and Communication:** Establish robust early warning systems that utilize advanced technologies to disseminate flood warnings in real-time. This helps residents and authorities to take necessary precautions and evacuate if required.
- Developing Sponge Cities:** The idea of a sponge city is to make cities more permeable so as to hold and use the water which falls upon it. The approach aims to enhance the capacity of cities to absorb, store, and utilize rainwater to mitigate flood risks and improve water resource management.
- Urban Drainage Systems:** Implement proper watershed management and develop emergency drainage plans. Regular maintenance and cleaning of drains and stormwater channels are essential to ensure smooth water flow and prevent blockages caused by solid waste and debris.
- Conservation of Water Bodies:** Protect and restore urban water bodies like lakes, tanks, and ponds, as they play a crucial role in managing urban flooding. These water bodies can act as natural retention basins, reducing stormwater runoff and preventing flooding.

- Role of Science and Technology:** This includes the use of predictive precipitation modeling, geospatial frameworks for vulnerability assessments, and innovative tools for analyzing and planning effective flood management strategies.
- Urban planning with nature-based solutions:** urban flood management in India continues to focus only on improving grey infrastructure, rescue & relief, instead of building solutions to increase flood resilience. Therefore, urban planning should adopt a hybrid approach of integrated green and grey infrastructure solutions.

**FIGURE 5.2** Urban Planning with Nature-Based Solutions for Adaptation



## MARINE HEAT WAVES

### CONTEXT

At present, Marine Heat Waves are occurring in several oceans, including the northern two-thirds of the Pacific Ocean, the southern Indian Ocean, and some parts of the Atlantic Ocean, as well as the Mediterranean Sea.

### WHAT ARE MARINE HEAT WAVES (MHWS)?

- A MHW is an **extreme weather event**. It occurs when the surface temperature of a particular region of the sea rises to **3 or 4 degree Celsius above the average temperature for at least five days**.
- MHWs can last for **weeks, months or even years**, according to the US government's agency National Oceanic and Atmospheric Administration (NOAA).
- According to the **International Union for Conservation of Nature (IUCN)**, MHWs have **increased by 50% over the past decade** and now last longer and are more severe.
- Projections suggest that by **2100 MHWs** will occur as many as **50 times as often** as in pre-industrial times, and increase **20-50 times in frequency** and **10 times in intensity**.

### FACTORS BEHIND MARINE HEAT WAVES (MHWS)

- Global Warming:** A 2018 study, 'Marine heatwaves under global warming', published in the journal Nature, showed that with the soaring global temperatures, **MHWs have become longer-lasting, more frequent and intense in the past few decades**.

- Research suggests that the **oceans have absorbed 90 per cent of the additional heat** caused by the release of greenhouse gases which has increased the global mean sea surface temperature by close to 0.9 degree Celsius since 1850.
- El Nino:** El Nino further worsens MHWs by triggering more heating of the ocean surface.
  - El Nino is a weather pattern that refers to an abnormal warming of surface waters in the **equatorial Pacific Ocean**.

## IMPACT OF MARINE HEAT WAVES ON OCEAN LIFE

- Biodiversity Loss:** Marine heatwaves can disrupt marine ecosystems, leading to changes in the distribution and abundance of species.
  - **For instance,** MHWs along the **Western Australian coast** during the summer of 2010 and 2011 caused some "**devastating**" fish kills.
- Kelp Forest Degradation:** A different study revealed that the same MHWs destroyed kelp forests and fundamentally altered the ecosystem of the coast.
  - Kelps usually grow in cooler waters, providing habitat and **food for many marine animals**.
- Coral Bleaching:** Corals are very sensitive to the temperature of the water in which they live. When water gets too warm, they expel the algae known as **zooxanthellae**, living in their tissues, causing them to turn entirely white. This is called coral bleaching.
  - **For example,** when high ocean temperatures in the tropical Atlantic and Caribbean in 2005 led to a massive coral bleaching event.
  - Coral bleaching has **severe consequences** as it reduces the reproductivity of corals and makes them more vulnerable to fatal diseases.
  - Also, thousands of **marine animals depend on coral reefs** for survival and damage to corals could, in turn, threaten their existence.
- Invasive Species:** MHWs also fuel the growth of invasive alien species, which can be destructive to marine food webs.
- Behavioural Changes in Species:** MHWs force species to change their behaviour in a way that puts wildlife at increased risk of harm.
  - MHWs have been linked to **whale entanglements** in fishing gear, according to a report by the IUCN.
- Impact on Ocean Chemistry:** MHWs are not the only threat to marine ecosystems; often they occur alongside other stressors such as ocean acidification, deoxygenation, and overfishing.
  - In such cases, MHWs not only further damage habitats, but also **increase the risk of deoxygenation and acidification**.
  - **Ocean acidification** refers to a reduction in the pH of the ocean over an extended period of time, caused primarily by uptake of carbon dioxide (CO<sub>2</sub>) from the atmosphere.
  - **Deoxygenation** is the overall decline in the oxygen content of oceanic and coastal waters. As, warm water holds less oxygen, MHWs can trigger deoxygenation.

## IMPACTS OF MARINE HEAT WAVES ON HUMANS

- Extreme Weather Events:** Higher water temperatures associated with MHWs can cause extreme weather events such as tropical storms and hurricanes, and disrupt the water cycle; making floods, droughts and wildfires on land more likely.
- Sea level rise:** As the oceans warm, they expand and cause sea levels to rise, which can flood coastal communities and damage infrastructure.
- Socio-economic Impacts:** MHWs have other profound socio-economic impacts for coastal communities.
  - **Impact on Aquaculture:** Several fish species relocate in response to changing ocean temperatures leading to reduced fish catches and affecting coastal livelihoods.
  - A study found that MHWs reduced the productivity of economically important species including **lobster and snow crab** in the northwest Atlantic and scallops off **Western Australia**.
  - **Impact on Tourism:** MHWs can also harm regional tourism, particularly in areas that rely on marine-based attractions and activities.
  - **Impact on Human Health:** As temperatures rise, certain types of harmful microorganisms can multiply, which can contaminate seafood and make it unsafe to eat.

- Ocean warming is a positive feedback loop for global warming.** As the oceans warm, they release more heat and moisture into the atmosphere, leading to changes in global precipitation patterns as well as temperatures.

### WAY FORWARD

- Mitigation:** Reducing greenhouse gas emissions is crucial to slow down global warming and the frequency of MHWs.
  - Governments and industries should invest in **renewable energy sources**, promote energy efficiency, and adopt sustainable practices to mitigate climate change.
- Adaption:** National and sub-national governments should design and implement measures to protect communities and build regional ocean resilience.
  - **Examples of such measures** include creating and protecting **marine protected areas** to act as refuges for species of coral, kelp and seagrass; and enforcing catch management or fishing restrictions to help limit economic losses linked to MHWs.
- Nature Based Solutions:** Governments must invest in nature-based solutions alongside ambitiously reducing fossil fuel-based emissions to achieve the goals agreed to under the Paris Agreement.
  - Nature-based solutions refer to a suite of actions or policies that **harness the power of nature to address** some of our most **pressing societal challenges**, such as threats to water security, rising risk of disasters, or climate change.
- Research and Monitoring:** Invest in research and monitoring programs to **better understand MHWs**, their impacts, and their future projections.
- International Collaboration:** Foster international collaboration and networks, such as the **Marine Heatwave International Group**, to share knowledge, data, and best practices in addressing MHWs on a global scale.

## THE BIOLOGICAL DIVERSITY (AMENDMENT) BILL, 2021

### CONTEXT

The Lok Sabha passed the Biological Diversity (Amendment) Bill, 2021 to amend the Biological Diversity Act of 2002.

#### Background: Biological Diversity Act, 2002

- The Act was brought with an **aim to conserve India's biological diversity** and ensure **sustainable use of biological resources**.
- The Act ensures that the benefits accrued from the **use of traditional and genetic resources** are shared with the **local communities** with prior and informed **consent-approval of local communities** in a fair and equitable manner.
- The Act was introduced to fulfill India's obligations under the **Convention on Biological Diversity (CBD)**, an international treaty signed during the **Earth Summit held in Rio de Janeiro in 1992**.
- The act envisaged a **three-tier structure to regulate** the access to biological resources:
  - The National Biodiversity Authority (NBA),
  - The State Biodiversity Boards (SBBs),
  - The Biodiversity Management Committees (BMCs) (at local level).
- The act stipulates all offences under it as **cognizable and non-bailable**.
  - **Cognizable offences** are those for which a police officer can make an **arrest without a warrant, or permission from the magistrate**.
- Any grievances related to the determination of benefit sharing or **order of the National Biodiversity Authority or a State Biodiversity Board** under this Act, shall be taken to the **National Green Tribunal**.

### SALIENT FEATURES OF THE BIOLOGICAL DIVERSITY (AMENDMENT) BILL, 2021

- Exemption for AYUSH Practitioners:** The Bill exempted registered AYUSH medical practitioners from the requirement of giving **prior intimation to State Biodiversity Boards** for accessing biological resources for certain purposes.
  - This exemption aimed to facilitate **easier access for traditional medicine practitioners** to biological resources for medicinal purposes.
- Exemption for Cultivated Medicinal Plants:** The Bill excluded cultivated medicinal plants from the purview of the Biological Diversity Act.
  - This meant that access to cultivated medicinal plants for various purposes **would not be subject** to the regulations and **requirements of the Act**.

- Fast-tracking of Research and Patent Application:** The Bill proposed to fast-track the process of research and patent applications related to biological resources.
  - This provision aimed to encourage and **expedite research and innovation** in the field of biodiversity and its applications.
- Change in Offences Classification:** The Bill proposed to change the nature of violations of the law related to access to biological resources and benefit-sharing with communities.
  - Currently treated as **criminal offences that are non-bailable**, the Bill sought to make these violations **civil offences**.
- Foreign Investment in Biodiversity Research:** The Bill allowed foreign investment in research related to biodiversity.
  - However, it stipulated that such investment should be made **through Indian companies** involved in biodiversity research exclusively.
- Introduction of Member-Secretary Post:** The Bill introduced the post of 'Member-Secretary' to be appointed by the Central Government.
  - The Member-Secretary would serve as the **chief coordinating officer and convener of the National Biodiversity Authority (NBA)** and assist the Authority in discharging its functions under the Biological Diversity Act.

## SIGNIFICANCE OF THE BILL

- Boosting Indian Medicine System:** The Bill is expected to give a boost to the "Indian system of medicine," also known as AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy).
- Promoting Cultivation of Medicinal Plants:** The Bill is designed to reduce the pressure on wild medicinal plants by encouraging the cultivation of medicinal plants.
- Expansion of National Biodiversity Authority (NBA):** This move is expected to facilitate greater coordination and integration of biodiversity considerations in national policymaking and decision-making processes.
- Conducive Business Environment:** The proposed changes in the Bill aim to create a more conducive business environment by simplifying the patent application process.
- Fast-Tracking Research and Investments:** This move can lead to quicker innovation and technological advancements in the field of biodiversity.

## CRITICISM OF THE BILL

- Risk of Biopiracy:** One of the main concerns is that easing the norms and giving exemptions could open the door to biopiracy.
  - Biopiracy refers to the unauthorized **commercial exploitation** of biological resources or traditional knowledge belonging to indigenous and **local communities**.
- Exemption of AYUSH Companies:** This exemption is seen as a violation of a 2018 judgement by the Uttarakhand High Court that mandated all companies, both foreign and Indian, to seek prior consent and approval for access and benefit-sharing with local communities.
- Violation of Forest Rights Act:** The Bill is seen to be in violation of the Forest Rights Act, 2006, which recognizes and authorizes the Gram Sabha (village council) for prior permission and approval in case of any access to forests.
- Dilution of Penal Provisions:** The Bill has been criticized for diluting the penalty provisions.

## THREATS TO CORAL REEFS

### CONTEXT

Recent studies and reports have warned about severity of **coral bleaching events**, and the impact it has on coral reef ecosystems.

### KEY HIGHLIGHTS OF THE STUDY

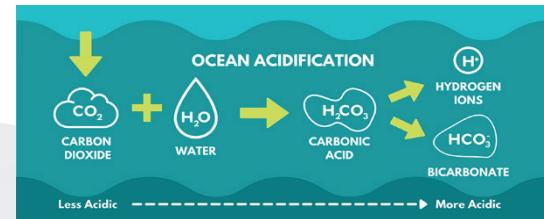
- Vulnerability to environmental changes:** Corals are highly susceptible to bleaching when the water temperature rises beyond a certain point. This vulnerability is a result of global warming and the increasing temperatures experienced worldwide.
- Appearance-based definition:** When corals bleach, they lose their vibrant colors and turn white. This **change in color serves as a visible indicator** that something has changed in the surrounding water, making it valuable for observers to recognize and assess the health of coral reefs.

- **Causes of zooxanthellae expulsion:** When the ocean environment undergoes changes such as excessive temperature increase, acidity, or increased brightness, the **zooxanthellae living within the coral leave**. As a result, the coral loses its color and appears bleached.
  - Corals have a **symbiotic relationship with algae called zooxanthellae**.
  - The zooxanthellae provide essential nutrients such as amino acids and sugars to the corals, while receiving minerals and carbon dioxide in return.
- **Additional stressors:** Besides temperature, other stressors like low tides, water pollution, and ecosystem changes resulting from the climate crisis can further impact the health of corals and increase their susceptibility to bleaching.
- **Survival and recovery:** While coral bleaching can be detrimental and even fatal for many coral colonies, some have shown the ability to survive and recover from bleaching events.
  - **Example:** Japan's Iriomote Island experienced bleaching in 2016 but displayed signs of recovery by 2020, indicating the potential for resilience and restoration in certain coral populations.

### **GLOBAL WARMING AND THREATS TO CORAL REEF**

Global warming poses a more significant threat to coral growth and reef accretion than ocean acidification.

- **Ocean acidification (OA) as a threat to coral reefs:** OA is the gradual decrease in the pH of the Earth's oceans due to the **uptake of carbon dioxide (CO<sub>2</sub>)** from the atmosphere.
  - **Reduced calcification:** The lower pH of ocean water affects the growth and survival of coral reefs by reducing calcification rates in **reef-building organisms i.e. coral polyps**.
  - **Affects coral reproduction:** Coral reefs reproduce by spawning eggs and sperm into the water. When the water is more acidic, the development and **survival of coral larvae** may be affected.
- **Global warming as a threat to coral reefs:** The study has found that coral reefs are more affected by global warming-related **heat-stress** than by ocean acidification.
  - The study also found that the **effects of temperature on the metabolism** of corals were stronger than the effects of increased CO<sub>2</sub>.
  - **Coral bleaching:** As global warming continues, the frequency and severity of bleaching events will increase, making it harder for coral reefs to recover from these disturbances.



#### **Case Study: 2016 & 2017 Mass coral bleaching in the Great Barrier Reef**

- The Great Barrier Reef, located off the **coast of Australia**, is the largest coral reef system in the world.
- In 2016 and 2017, the Great Barrier Reef experienced mass bleaching events, which were caused by a combination of **high ocean temperatures and El Niño**.
- Both the events collectively affected almost **two thirds of the Great Barrier Reef**.



- **Disease outbreaks:** High temperatures can also increase the incidence and severity of coral diseases.
- **Changes in storm patterns:** This leads to stronger and more frequent storms that can cause the destruction of coral reefs.
- **Sea level rise:** may lead to increases in sedimentation for reefs located near land-based sources of sediment. Sedimentation runoff can lead to the **smothering of coral**.
- **Reduced growth and reproduction:** Increased water temperatures can also negatively affect the growth and reproduction of coral reefs.
- **Changes in coral community composition:** High temperatures can cause **certain coral species to become more dominant or extinct**, altering the composition of coral communities.

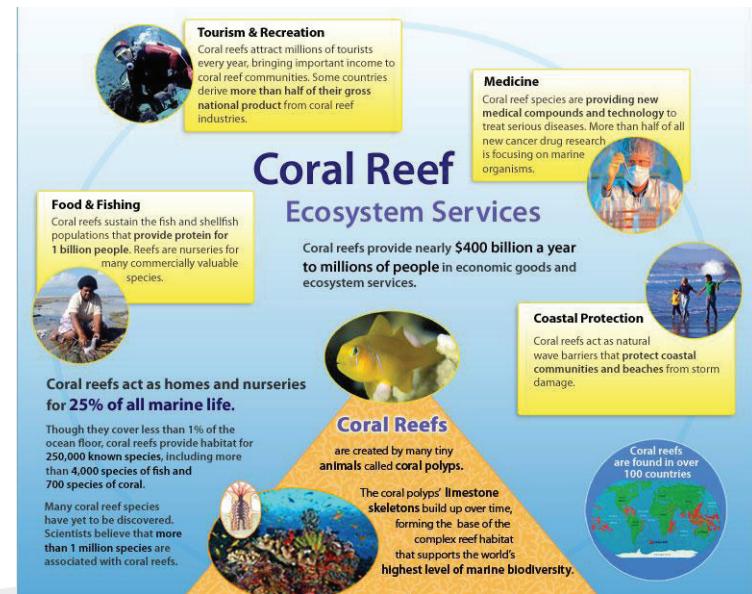
## ABOUT CORAL REEFS

- Coral reefs are **diverse underwater ecosystems** formed primarily by the accumulation of calcium carbonate exoskeletons secreted by corals.
- They are often referred to as the “**rainforests of the seas**” due to their rich biodiversity and importance in supporting a wide range of marine life.
- Coral reefs **provide habitats, breeding grounds, and food sources for countless species**, making them crucial for the overall health of ocean ecosystems.

## TYPES

There are two main types of coral reefs:

- Fringing Reefs:**
  - Fringing reefs are **located close to the shorelines of continents or islands**.
  - They develop directly from the coastline, and their shallow, nearshore environments make them easily accessible.
  - Fringing reefs typically grow parallel to the shorelines, forming a border or fringe along the coastline.
- Barrier Reefs:**
  - Barrier reefs are found farther offshore, separated from the mainland by a lagoon or deep water.
  - These **reefs are characterized by a continuous and extensive reef structure** parallel to the coastline, forming a barrier between the open ocean and the shoreline.
  - Barrier reefs can be quite large, with the **Great Barrier Reef in Australia** being the most famous and largest example.
- Atoll:**
  - There is another type of coral reef called an “atoll,” **which is a circular or oval-shaped reef** that surrounds a central lagoon.
  - Atolls are typically found in the open ocean, often formed on the remnants of submerged volcanic islands.



## CORAL BLEACHING AND CONSEQUENCES

- Coral bleaching is a phenomenon where **corals expel the symbiotic algae-zooxanthellae** from their tissues due to stress caused by changes in environmental conditions such as elevated sea temperatures, increased solar radiation, **ocean acidification, infectious diseases, chemical pollution, increased sedimentation**, and human-induced threats.
- When the zooxanthellae are expelled, the corals lose their colourful appearance and turn completely white, **revealing the translucent tissues of calcium carbonate**.
- Disruption of the food chain:** Changes in coral communities can impact species that depend on them, such as fish and invertebrates that rely on corals for food and shelter. This can disrupt the entire food chain in coral reef ecosystems.
- Loss of biodiversity:** When corals die due to bleaching, genetic and species diversity decline, leading to a loss of biodiversity within coral reef ecosystems.
- Economic impact:** Healthy coral reefs are important attractions for tourism, including activities like diving. Bleached and degraded reefs can deter tourists, negatively affecting local economies that depend on reef-based tourism.
- Food availability:** Coral bleaching can cause significant shifts in fish communities, resulting in reduced catches for fishers. This can have implications for the availability of seafood and impact the livelihoods of communities dependent on fishing.
- Coastal protection:** Coral reefs serve as natural barriers, absorbing wave energy and protecting coastlines from erosion, storm damage, and flooding. The loss of healthy coral reefs due to bleaching can leave coastal communities more vulnerable to these natural hazards.

## THREATS TO CORAL REEFS OTHER THAN OCEAN ACIDIFICATION AND GLOBAL WARMING

- Pollution:** Pollution from sources such as agricultural runoff, sewage, and industrial discharges can damage coral reefs by smothering them with sediment, increasing the growth of harmful algae, and reducing the water's oxygen levels.
- Overfishing:** Overfishing can disrupt the balance of coral reef ecosystems by removing key herbivores and predators.
- Coastal development:** Coastal development can damage coral reefs by destroying their habitats and increasing the amount of sediment and pollution in the water.
- Unsustainable tourism:** Overuse of coral reefs for tourism and recreation can lead to physical damage to the coral, sedimentation, pollution, and overfishing.
- Invasive species:** Invasive species such as the crown-of-thorns starfish and the lionfish can damage coral reefs by eating coral and competing with native species.

### Stats IQ: Current scenario of degradation of coral reefs

- In 2019, the **Global Coral Reef Monitoring Network (GCRMN)** reported that coral reefs have declined by **50% in the last 30 years** and it is expected that, this rate of decline could reach **70% by 2030**.

## METHODS TO PROTECT AND RESTORE CORAL REEFS

**01**

**Biorock technology:** This involves using low-voltage electricity to create an electrochemical environment that encourages coral growth.

**02**

**Cryopreservation:** This involves collecting and freezing coral sperm and eggs, and then using them to repopulate degraded reefs at a later time.

**03**

**Coral gardening:** This involves cultivating coral fragments in a nursery and then transplanting them to a degraded reef.

**04**

**Reforestation:** This method involves using fast-growing coral species to reforest degraded reefs.

**05**

**Ecosystem-based management:** This method involves using a holistic approach to manage the entire ecosystem, rather than just focusing on coral restoration.

**06**

**Marine Protected Areas:** This method involves protecting a specific area of the ocean to allow coral and other marine life to thrive.

## MAJOR INITIATIVES

Several initiatives and programs that aim to protect and conserve coral reefs include:

- International Coral Reef Initiative (ICRI):** ICRI is a partnership between governments, international organizations, and non-governmental organizations (NGOs) that aims to promote the sustainable management and conservation of coral reefs worldwide. It provides a platform for collaboration, knowledge exchange, and policy development.
- Global Coral Reef Monitoring Network (GCRMN):** GCRMN is a network supported by the United Nations Environment Programme (UNEP) and other partners. It coordinates global monitoring efforts to assess the status and trends of coral reefs, facilitating data sharing and providing scientific information for conservation decision-making.
- Global Coral Reef Alliance (GCRA):** GCRA is an international organization focused on coral reef restoration, research, and education. It works to develop and implement innovative techniques to restore damaged coral reefs and promotes sustainable management practices.
- The Global Coral Reef R&D Accelerator Platform:** This platform aims to accelerate the development and implementation of cutting-edge science and technology solutions to address the threats facing coral reefs. It fosters collaboration between scientists, policymakers, and innovators to drive innovation and action for reef conservation.
- National Coastal Mission Program:** In the case of India, the National Coastal Mission Program is an initiative aimed at protecting and sustaining coral reefs in the country. This program focuses on the conservation of coastal and marine ecosystems, including coral reefs, through various strategies such as research, awareness campaigns, and community engagement.
- Local and regional conservation efforts:** Many countries and communities have implemented their own conservation initiatives, including the establishment of **marine protected areas (MPAs)** and the adoption of sustainable fishing practices.

## SCIENCE AND TECHNOLOGY

### ONLINE GAMING

#### CONTEXT

The GST council at its 50th meeting agreed to impose 28 percent GST on the full value of online gaming, horse racing and casinos.

#### MORE ON THE NEWS

- The uniform levy of 28 per cent tax will be applicable on**
  - the face value of the **chips purchased** in the case of **casinos**,
  - the full value of the **bets placed with bookmaker/totalisator** in the case of **horse racing**, and
  - the full value of the **bets placed** in case of **online gaming**.
- Now, the government will make suitable **amendments** to include online gaming and horse racing in Schedule-III of **the Central GST Act 2017**, deeming them as **taxable actionable claims**.
  - **An actionable claim refers** to a claim to an unsecured debt or a claim to any beneficial interest in movable property that is not in the possession of the claimant.
- So far, **lottery, betting, and gambling** were classified as actionable claims. Now, horse racing and **online gaming will be added**.
- Concerns with the move:**
  - Several online gaming companies expressed that the GST Council's decision is "**unconstitutional and irrational**", and will wipe out the entire Indian gaming industry and lead to lakhs of job losses.
  - They have also expressed that the only people benefitting from this will be **anti-national illegal offshore platforms**.
- Arguments by the government:**
  - **Moral Question:** The government believes that it is a moral question of whether the gaming industry, including online gaming, should receive greater encouragement than essential goods.
  - **Addressing Social Concerns:** The government's decision is driven by concerns over the potential negative impacts of excessive gaming, including addiction, health issues, and social dysfunction.

#### WHAT IS ONLINE GAMING?

- The term "**online gaming**" refers to games that can only be played with an **internet connection**. This is a part of the sunrise industry with a growing demand for game access.
- Across the world, the **popularity of online gaming** has grown significantly in recent years, driven by various factors such as technological advancements, increased internet accessibility, the proliferation of smartphones, and the rise of esports.

#### INDIA'S ONLINE GAMING INDUSTRY

- India's gaming market is expected to grow from **\$2.8 billion in 2022** to a whopping **\$5 billion by 2025**, growing at a compounded annual growth rate (CAGR) of 28-30 percent.
- The number of gamers in the country** is expected to expand from 420 million in 2022 to hit 500 million by 2025.
- Between 2017 and 2020, the country's gaming industry expanded at a **CAGR of 38 percent**, compared to **8 percent in China and 10 percent in the US**.
- According to the World Economic Forum (WEF), **mobile devices are the primary drivers** of India's gaming industry.

#### KEY GROWTH DRIVERS OF INDIA'S ONLINE GAMING INDUSTRY

- Large and Young Population:** India has a significant young population, with about half of its population under the age of 25. This demographic segment is more likely to engage in online gaming, contributing to the industry's growth.
- Increasing Smartphone Penetration:** The availability of affordable smartphones has led to a significant increase in smartphone users in India. Easy access to smartphones enables more people to participate in online gaming.
- Rising Internet Users:** India is the second-largest country in terms of internet users. The growth in internet users creates a larger potential user base for online gaming platforms.

- The Pandemic Push:** The growth was significantly aided by the pandemic, which allowed people to explore all kinds of gaming choices within the confines of their homes.
- Localization and Regional Content:** Games and in-game content that are tailored to the Indian market have gained popularity. Localization efforts, such as incorporating Indian themes, festivals, and regional languages, have made online games more appealing to the Indian audience.
- Booming IT Sector:** The country has seen a significant increase in the number of online game developers, which has contributed to the development of innovative games and technologies.
- Digital Payment Adoption:** The widespread adoption of digital payment methods has facilitated online transactions in the gaming industry.

### **LEGAL AND REGULATORY FRAMEWORK FOR ONLINE GAMING IN INDIA**

- Any online gaming platform (domestic or foreign) offering real money online games to users of India will have to be a **legal entity incorporated under Indian law**.
  - The **Prevention of Money Laundering Act of 2002** will treat these platforms as “reporting entities.”
  - These platforms will be required to notify the **Financial Intelligence Unit India** of any suspicious transactions.
- Most states allow **skill-based games** but some don't allow **games of chance**, which are considered gambling and immoral.
  - A **game of skill** refers to a type of game where the outcome is primarily determined by the skill, **knowledge, strategy**, or expertise of the player rather than chance or luck.
  - A game of chance, also known as a game of luck, is a game in which the outcome is predominantly determined by random or unpredictable elements.
- Online gaming has always been **regulated by the state**, but state governments find it tough for them to enforce rules like geo-blocking certain apps or websites within their borders.
- Games of skill have been restricted** in Assam, Andhra Pradesh, Nagaland, Odisha, Tamil Nadu, and Telangana.
- MeitY** may serve as the **nodal ministry** for the regulation of **online gaming**, except for the **e-sports** category, which falls under the purview of the **Department of Sports**.
  - **Esports, short for electronic sports**, refers to organized competitive video gaming where professional players or teams compete against each other in various video games.

### **BENEFITS OF ONLINE GAMING**

- Economic Growth:** The growth of the online gaming industry contributes to economic development by generating revenue through taxes and creating opportunities for infrastructure improvement.
- Promotion of Innovation:** Online gaming drives innovation and technological advancements, particularly in immersive technologies like augmented reality (AR) and virtual reality (VR).
- Employment Opportunities:** Online gaming creates a significant number of jobs, particularly in technology startups, animation, live streaming, and video-on-demand sectors.
- Enhanced Education:** Educational online games can facilitate learning and engagement for children by incorporating interactive elements and cultural aspects.
- Expansion of Sports:** The rise of esports and online gaming introduces a new dimension to sports. Esports events and competitions allow users to represent their nations and win accolades.
  - For example, esports were included as medal events in the **2022 Asian Games**.
- Combatting Illegal Activities:** Online fantasy games with regulated betting and wagering elements can help curb illegal betting, gambling, and money laundering activities.
- Substance Abuse Reduction:** Online gaming provides a convenient and accessible platform for entertainment, allowing people to play from the comfort of their homes. This can reduce the likelihood of substance abuse, which is often associated with physical betting places or casinos.

### **CONCERNs ASSOCIATED WITH ONLINE GAMING**

- Physical and Psychological Harms:** Some online games can contribute to aggressive behavior and extreme attachment to technology, leading to increased violence and self-harm in society.

- Examples include instances like the **Blue Whale Challenge**, an online suicide game.
- Gaming Addiction:** The constant availability and accessibility of online games can lead to addiction, which can result in social dysfunction, poor social skills, and financial losses.
- Health Issues:** Excessive gaming results in stress, anxiety, depression, disrupted sleep patterns, and unhealthy eating habits.
- Poor Educational Performance:** Easy access to online games, particularly among children, can interfere with school and educational performance.
- Technological Risks:** In online gaming, there is huge potential for technological risks such as data thefts, privacy invasions, cyber-attacks, and financial frauds.
- Negative Impact on Vulnerable Sections:** The rise in violence, financial losses etc. can increase violence/crimes against women and children at home and outside.
  - In 2022, a 16-year-old boy from Lucknow shot dead his mother for scolding him for playing the **online game PUBG**.
- Lack of Uniformity:** Different states in India have different laws regarding betting and gambling. This lack of uniformity can create confusion and limited legal awareness among players and authorities, leading to inconsistencies in the regulation of online gaming activities.

## GOVERNMENT INITIATIVES

- Digital Gaming Research Initiative:** To support the Indian digital gaming research space and industry. The **Science and Engineering Research Board (SERB)** of the Department of Science and Technology has identified three main directions for its Digital Gaming Research:
  - **R&D in learning** and leisure gaming platforms,
  - **Immersive game prototypes** with an emphasis on Indian culture and values, and
  - **A collaborative technical design** process, which was made by SERB Game Labs.
- AVGC Promotion Task Force:** The Ministry of Information and Broadcasting has established the **Animation, Visual Effects, Gaming and Comic (AVGC)** Promotion Task Force.
  - The government recognizes that the Indian AVGC industry has the ability to carry the "**Make in India**" and "**Brand India**" banners.

## WAY FORWARD

- MeitY Taskforce Report:** The Ministry of Electronics and Information Technology (MeitY) has constituted a taskforce to suggest recommendations for regulating India's online gaming industry. In its report, the taskforce recommended the following:
  - **Central-Level Law** for Online Gaming,
  - **A regulatory body** for the Online Gaming Industry, and
  - Three-Tier Dispute Resolution Mechanism.
- Curbing Economic Losses:** Introduce measures to curb excessive financial losses in online gaming.
  - For example, implementing a **cap on the number of transactions** an individual can make across platforms or within a single platform can help prevent significant economic losses.
- Information, Education, and Communication (IEC):** To raise awareness about the potential risks and benefits of online gaming.
- Parental Supervision:** Parents should actively supervise their children's online gaming activities. This includes monitoring the type of games they play, the time spent gaming, and ensuring that gaming does not negatively impact their education and well-being.

## ROLE OF AI IN HEALTHCARE

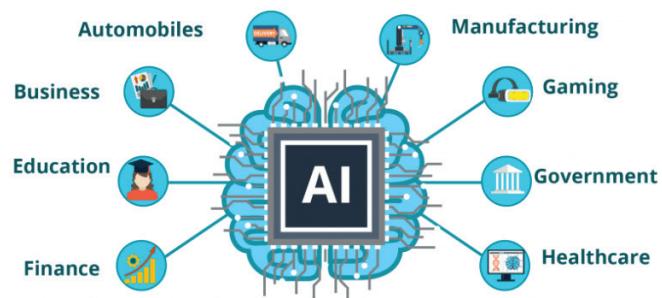
### CONTEXT

Artificial Intelligence (AI) has emerged as a groundbreaking technology transforming numerous industries, and healthcare is no exception.

## ABOUT THE ARTIFICIAL INTELLIGENCE (AI)

- Artificial Intelligence (AI) is a **simulation of human intelligence** into a computer machine so that it can think and act like a human.
- AI systems are designed to simulate or replicate human cognitive abilities, such as **perception, reasoning, learning, and problem-solving**.
- AI rely on **algorithms and computational models** to process and analyze large amounts of data, extracting patterns and making predictions or decisions based on that information.
- AI can be classified into **two main categories**:
  - **Narrow AI or Weak AI:** This type of AI is designed to perform **specific tasks** and is limited to a narrow domain. Examples include voice assistants like **Siri and Alexa**.
  - **General AI or Strong AI:** It refers to a system that possesses the ability to **understand, learn, and apply its intelligence** across a wide range of tasks and domains, similar to **human intelligence**.

### Applications of Artificial Intelligence



## VARIOUS APPLICATIONS OF AI IN HEALTHCARE

- Disease Diagnosis:** Machine learning algorithms can analyze patient data, including symptoms, medical records, and genetic information, to identify patterns and predict diseases.
- Medical Imaging:** AI can assist in the interpretation of medical images such as X-rays, CT scans, MRIs, and mammograms to detect abnormalities, tumors, or other signs of diseases with high accuracy.
- Personalized Treatment Plans:** By considering a patient's medical history, genetic information, and current condition, AI systems can recommend the most effective treatment options and dosages.
- AI Powered Virtual Assistants and Chatbots:** They can provide patients with 24/7 access to medical information, answer questions about symptoms, medications, and provide healthcare guidance.
- Drug Discovery and Development:** AI can accelerate the process of drug discovery by analyzing vast amounts of biological and chemical data.
- Remote Patient Monitoring:** AI-enabled devices can collect and analyze real-time patient data, such as vital signs, activity levels, and sleep patterns, allowing healthcare providers to remotely monitor patients.
- Robotics and Surgery:** AI-powered robots can assist surgeons during complex procedures by providing real-time feedback, precision, and enhanced visualization.

## RISKS AND CHALLENGES WITH AI IN HEALTHCARE

- Data Privacy and Security:** The use of AI in healthcare involves the collection, storage, and analysis of sensitive patient data. Protecting this data from unauthorized access, breaches, and misuse is crucial.
- Bias and Discrimination:** AI systems learn from data, and if the data used to train these systems is biased or unrepresentative, it can lead to biased outcomes and unequal treatment.
- Lack of Transparency:** Many AI algorithms, such as deep learning models, operate as "black boxes" where it is challenging to understand how they arrive at specific conclusions, which can make it difficult to trust and validate AI systems in critical healthcare decisions.
- Limited Regulation and Standards:** Clear guidelines and regulations are needed to address issues related to data usage, algorithmic accountability, validation, and safety.
- Integration with Existing Healthcare Systems:** Integrating AI technologies into existing healthcare systems can be complex and challenging.
- Liability and Accountability:** Determining liability and accountability in cases where AI systems are involved in medical decisions or errors can be complicated.

- **Overreliance on AI:** While AI can augment healthcare practices, it should not replace human expertise and judgment entirely. There is a risk of overreliance on AI systems, which could lead to medical errors or missed diagnoses if human oversight and critical thinking are neglected.

### CURRENT STATE OF AI HEALTHCARE IN INDIA

- India is one of the few developing countries leading the way on AI in health.
- Data and AI in healthcare have the potential to add \$25-\$35 billion to India's GDP by 2025.
- As per the Indian AI Healthcare Market 2019-2025 report, AI in the Indian healthcare industry is estimated to grow at a CAGR of 50.9% during the forecast period.
- **Current scenario:** Indian start-ups are continuing to refine and prioritize increased personalized medical care by using AI tools.
- **Some of the AI healthcare start-ups in India** that are reshaping the industry are:
  - **HealthifyMe:** Harnesses AI to provide personalized diet and fitness information and coaching.
  - **Dozee:** Contactless health monitors that enable early detection of any health deterioration.
  - **Niramai:** Early-stage detection of breast cancer.
  - **Tricog:** Offer virtual cardiology services to distant clinics.

### ICMR GUIDELINES FOR AI USE IN THE HEALTH SECTOR

Indian Council of Medical Research (ICMR) issued a guiding document- "The Ethical Guidelines for Application of AI in Biomedical Research and Health care", which outlines **10 key patient-centric ethical principles** for Artificial Intelligence (AI) application in the health sector.

- **Accountability and Liability Principle:** It underlines the importance of regular internal and external audits to ensure optimum functioning of AI systems which must be made available to the public.
- **Autonomy Principle:** It ensures human oversight of the functioning and performance of the AI system. Before initiating any process, it is also critical to attain consent of the patient who must also be informed of the physical, psychological and social risks involved.
- **Data Privacy Principle:** It mandates AI-based technology should ensure privacy and personal data protection at all stages of development and deployment.
- **Collaboration Principle:** This principle encourages interdisciplinary, international collaboration and assistance involving different stakeholders.
- **Safety and Risk Minimization Principle:** This principle aimed at preventing "unintended or deliberate misuse", anonymized data delinked from global technology to avoid cyber-attacks, and a favorable benefit-risk assessment by an ethical committee among a host of other areas.
- **Accessibility, Equity and Inclusiveness Principle:** This acknowledge that the deployment of AI technology assumes widespread availability of appropriate infrastructure and thus aims to bridge the digital divide.
- **Data Optimization:** Poor data quality, inappropriate and inadequate data representations may lead to biases, discrimination, errors and suboptimal functioning of the AI technology.
- **Non-Discrimination and Fairness Principles:** In order to refrain from biases and inaccuracies in the algorithms and ensure quality AI technologies should be designed for universal usage.
- **Trustworthiness:** In order to effectively use AI, clinicians and healthcare providers need to have a simple, systematic and trustworthy way to test the validity and reliability of AI technologies. In addition to providing accurate analysis of health data, a trustworthy AI-based solution should also be lawful, ethical, Reliable and valid.

## BIOFORTIFIED FOODS

### CONTEXT

The Federation of Indian Chambers of Commerce and Industry (FICCI) has released a report titled '**Biofortification- A Pathway to Improve India's Nutritional Outcomes**', highlighting the steps needed to promote the biofortification market in India.

## WHAT ARE BIOFORTIFIED FOODS?

- Biofortified foods are crops that have been deliberately bred and developed to have higher nutritional content compared to their conventional counterparts.
- The process of biofortification involves using conventional plant breeding techniques to enhance the concentration of essential vitamins, minerals, and other nutrients in food crops.
- The goal is to address micronutrient deficiencies, also known as hidden hunger, which affect millions of people around the world, particularly in developing countries.

## TECHNIQUES OF BIOFORTIFICATION

- Conventional Breeding:** This approach involves traditional plant breeding methods to crossbreed crops with naturally higher levels of specific nutrients with locally adapted and widely grown varieties. The aim is to transfer the desired traits, such as increased vitamin or mineral content, to the new crop varieties.
  - **Selective Breeding:** Researchers identify and select crop varieties with naturally higher nutrient content, known as donor or parent lines. These lines are then crossbred with local varieties to create new hybrids with improved nutritional profiles.
  - **Backcrossing:** This technique involves crossing a biofortified crop with a locally adapted variety for several generations while selecting for the desired nutrient content.
  - **Marker-Assisted Selection (MAS):** To speed up the breeding process, genetic markers associated with the desired nutrient traits are identified and used to select and track the presence of these traits in the offspring.
- Biotechnology:** In some cases, genetic engineering techniques are used to introduce specific genes responsible for nutrient production into the crop's genome. This approach allows for more precise control over the nutrient content, but it is subject to rigorous regulatory scrutiny.
  - **Transgenic Approach:** Scientists introduce genes from other organisms into the plant's genome, which encode enzymes or proteins involved in the synthesis of specific nutrients. This leads to the production of the desired nutrient in the crop itself.
  - **Gene Editing (CRISPR-Cas9):** This advanced biotechnological tool allows for targeted modifications of specific genes in the crop's genome to enhance nutrient content.
- Hybridization:** This technique involves crossing two genetically distinct parent lines to produce hybrid seeds with improved nutritional characteristics compared to the original varieties.
- Mutagenesis:** In this approach, plants are exposed to mutagenic agents (e.g., radiation or chemicals) to induce random genetic mutations. These mutations can sometimes lead to beneficial traits, such as increased nutrient content, which are then selected and propagated.

## BENEFITS OF BIOFORTIFIED FOODS

The significance of food fortification lies in its potential to address and alleviate various nutrient deficiencies in populations, contributing to improved public health and well-being.

- Combating Micronutrient Deficiencies:**
  - Food fortification targets specific micronutrients that are crucial for human health, such as iron, folic acid, vitamin A, iodine, and others.
  - Micronutrient deficiencies can lead to a range of health issues, including impaired cognitive development, weakened immune systems, and increased susceptibility to diseases.
- Improved Overall Health:**
  - By fortifying staple foods with essential nutrients, the overall health of the population can be enhanced.
  - For example, fortifying wheat flour or rice with iron and other micronutrients can help combat anemia and improve cognitive function.
- Cost-Effective and Sustainable:**
  - Food fortification is a cost-effective and sustainable approach to improving nutrition.
  - Once the fortified seed or product is developed, it can be easily replicated and distributed without significant additional costs, making it accessible to broader populations, including low-income groups.

- No Behavior Change Required:**
  - Unlike other interventions that may require behavior change, such as dietary modifications or adherence to supplement regimens, food fortification doesn't demand any change in eating habits.
- Reach Vulnerable Populations:**
  - Fortified foods can be particularly beneficial for reaching vulnerable groups, such as pregnant women, infants, and children, who are more susceptible to nutrient deficiencies.
  - It can also help address malnutrition in regions with limited access to diverse and nutritious food options.
- Complementary to Other Interventions:** Food fortification complements other nutrition interventions, such as supplementation and dietary diversification, creating a comprehensive approach to combat malnutrition.

### BIOFORTIFIED FOODS IN INDIA

- Scientists at the **Indian Council of Agricultural Research (ICAR)** have been developing biofortified crops in India with a view to eradicating malnutrition amongst the poor sections of the society.
- As per the ICAR website, they had developed **21 varieties** of biofortified staples including **wheat, rice, maize, millets, mustard, groundnut by 2019-20**.
- These biofortified crops have **1.5 to 3 times higher levels of protein, vitamins, minerals and amino acids** compared to the traditional varieties.

### NEED FOR BIOFORTIFICATION IN INDIA

- India faces a development paradox**—of being one of the fastest-growing global economies in the world and contrast—of having an estimated 189.2 million people i.e. **14% of the population as undernourished**.
- Further, the percentage of **children under the age of five** who are **stunted, wasted and are underweight** are 38.4, 21.0 and 42.5 respectively.
- Also, 53.1% of **women of reproductive age** between 15 to 49 years are **Anaemic**. These metrics highlight the prevalence of chronic malnourishment of women, girls and children in India.
- Furthermore, **COVID-19 has exacerbated the malnutrition status** of vulnerable communities in India weakening their immunity.

### CHALLENGES FOR BIOFORTIFIED FOODS IN INDIA

- Consumer Acceptance:** One of the significant challenges is the lack of consumer acceptance, particularly when it comes to changes in the **appearance, taste, or texture of biofortified foods**.
  - For example, the “golden rice,” which is genetically modified to produce beta-carotene (provitamin A), faced resistance due to its yellowish color, even though it addresses vitamin A deficiency.
- Last Mile Reach and Accessibility:** Ensuring that biofortified foods reach the most vulnerable and nutritionally deficient populations in remote and rural areas can be a **logistical challenge**.
- Farmer Adoption and Cost:** Farmers may be hesitant to switch from their traditional crops to new biofortified varieties due to **uncertainties about crop performance, market demand, and potential changes in farming practices**.
  - Additionally, the initial costs of acquiring biofortified seeds or materials might be a concern for resource-limited farmers.
- Time and Resources for Non-GMO Methods:** While biofortification using non-genetically-modified methods is generally considered safe and more widely accepted by some consumers, it can be a **slower and resource-intensive process** compared to genetic modification.
- Risk of Excess Iron:** For certain segments of the population, such as men and individuals with certain medical conditions like thalassemia and sickle cell anemia, **excessive iron intake through fortified foods may pose health risks**. High iron levels have been associated with an increased risk of chronic diseases like diabetes and hypertension.

### GOVERNMENT INITIATIVES RELATED TO BIOFORTIFICATION:

- National Agricultural Research System (NARS):** The government collaborates with NARS to develop and release biofortified crop varieties that are rich in essential micronutrients such as iron, zinc, and vitamin A. These varieties are aimed at improving the nutritional content of commonly consumed staple crops.

- HarvestPlus:** HarvestPlus is a global initiative working in partnership with national and international organizations to promote biofortification. In India, HarvestPlus works with research institutions and agricultural organizations to develop and disseminate biofortified crop varieties.
- National Nutrition Strategy (NNS):** The NNS recognizes the significance of biofortification in addressing malnutrition and aims to promote the cultivation and consumption of biofortified crops to improve the nutritional intake of vulnerable populations.

#### **WAY FORWARD: RECOMMENDATIONS BY THE FICCI REPORT**

- Marketing-supply-policy support-institutional strengthening (MSPI)** strategy to achieve the goal of scaling up biofortification is the need of the hour.
- Market drive** for sustainable growth is **critical** and can be achieved through solutions such as **direct farm gate purchase**, increase **consumer awareness**, **proper labelling** and **packaging**;
- While the **supply drive** can be strengthened through improving **farmer acceptance** and awareness, developing a **robust value chain** and a brand differentiator through **logo to label biofortified foods**.



## SOCIAL ISSUES

### GLOBAL REPORT ON THE FOOD CRISES (GRFC) 2023

#### CONTEXT

The Global Report on the Food Crises (GRFC) 2023 released recently estimated that between 691 million and 783 million people in the world suffered from hunger in 2022.

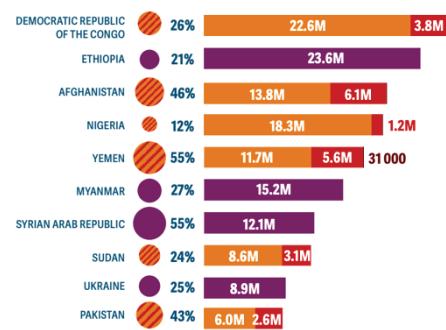
#### ABOUT THE REPORT

- Published by the **Food Security Information Network (FSIN)** in support of the **Global Network against Food Crises (GNAFC)**, the GRFC is the reference document on **global, regional and country-level acute food insecurity in 2022**.
- It provides analysis of the key drivers of acute food insecurity in food-crisis contexts and presents an overview of food-crisis trends since 2016.
- The GRFC 2023 is the result of a collaborative effort among 16 partners to achieve a joint consensus-based assessment of acute food insecurity in countries with food crises.
- The report aims to **inform humanitarian and development action** by providing the global and national food security community with independent and consensus-based evidence and analysis.

#### KEY FINDINGS OF THE REPORT

- Hunger levels:**
  - Hunger is no longer increasing at a global level, but it remains far above pre-COVID pandemic levels.
  - The world is still off track **towards achieving Sustainable Development Goal 2**, which aims for Zero Hunger.
- Food insecurity:**
  - New estimates of the **Food Insecurity Experience Scale (FIES)** show that in 2022, no progress was made on food insecurity globally.
  - The global prevalence of moderate or severe food insecurity remained unchanged for the second consecutive year, with an **estimated 2.4 billion** people lacking access to adequate food.
  - This is **391 million more people than in 2019**.
- Prevalence of undernourishment:**
  - Global hunger, as measured by the prevalence of undernourishment, remained relatively unchanged from 2021 to 2022 but is still significantly higher than pre-COVID-19 levels.
  - **Around 9.2% of the world's population was affected by undernourishment** in 2022, compared to 7.9% in 2019.
- Child malnutrition:**
  - **Stunting, which is being too short for one's age**, among children under five years of age, has declined steadily from 204.2 million in 2000 to 148.1 million in 2022.
  - **Child wasting**, caused by insufficient nutrient intake or absorption, also declined from 54.1 million in 2000 to 45 million in 2022.
  - However, the number of **children who are overweight or obese increased slightly** from 33 million in 2000 to 37 million in 2022.
- Affordability of healthy diets:**
  - The **report reveals that almost 3.2 billion people** worldwide could not afford a healthy diet in 2020, although there was a slight improvement in 2021.

Countries/territories with the highest numbers of people in IPC/CH Phase 3 or above or equivalent in 2022 and the share of analysed population in these phases



Numbers of people in:  
█ IPC/CH Phase 3   █ IPC/CH Phase 4   █ IPC/CH Phase 5   █ Non IPC/CH moderate + severe acute food insecurity

Share of analysed population in:  
● IPC/CH Phase 3+   ● Non IPC/CH moderate + severe acute food insecurity

- The cost of a healthy diet increased globally by 6.7% between 2019 and 2021.
  - It projects that almost 600 million people will be chronically undernourished in 2030.
- Key drivers of food insecurity:**
- The report identifies various reasons responsible for food insecurity, including pandemic-related disruptions in 2020 due to lockdowns and economic downturns, conflicts like the Ukraine war, governmental policies, and the impact of urbanization on food systems.
- Solutions:**
- **Supporting Healthier Food Outlets:** The report emphasizes the importance of policy incentives to encourage shops to sell fresh and minimally processed foods. Making healthy diets more accessible, this measure can positively impact food security.
  - **Addressing Street Food Safety:** Street foods, consumed by approximately 2.5 billion people worldwide daily, play a significant role in food consumption. Improving infrastructure and regulations surrounding street food will enhance nutritional safety and quality.
  - **Building Rural Infrastructure:** Investments in rural infrastructure, such as quality rural roads and linkages to main networks, can improve connectivity for small farms and enterprises, bolstering food production and distribution.
  - **Empowering Local Governments:** Local governments play a crucial role in implementing policies that ensure healthy diets are available and affordable for all. Their active involvement can lead to effective multilevel and multi-stakeholder mechanisms.

## UNDERSTANDING FOOD SECURITY

- Food security** is defined (from the World Food Summit of 1996) thus: “**When all people, at all times, have physical and economic access to sufficient, safe and nutritious food** that meets their dietary needs and food preferences for an active, and healthy life”.
- It includes the following dimensions:
- (1) **Availability:** It means food production within the country, food imports and the stock stored in government granaries.
  - (2) **Accessibility:** It means food is within reach of every person without any discrimination.
  - (3) **Affordability:** It implies that having enough money to buy sufficient, safe and nutritious food to meet one's dietary needs.

## FRAMEWORK FOR FOOD SECURITY IN INDIA

India ranked **107 among the 121 countries** on the Global Hunger Index 2022 and according to FAO, the **Food Price Index** has increased by 30% in the year 2021-22.

- Constitutional Provision:** While the Indian Constitution does not explicitly mention the right to food, Article 21, which enshrines the fundamental right to life, can be interpreted to include the right to live with human dignity, encompassing access to food and other basic necessities.
- Buffer Stock:** The **Food Corporation of India (FCI)** plays a crucial role in food security by procuring food grains at minimum support prices (MSP) and storing them in warehouses across the country. The food grains are then supplied to state governments based on their requirements.
- Public Distribution System (PDS):** The PDS has evolved into a significant aspect of the government's food economy management.
  - Currently, **essential commodities like wheat, rice, sugar, and kerosene** are allocated to states/union territories (UTs) for distribution through the PDS.
  - Some states also distribute **additional items like pulses, edible oils, iodized salt, and spices** through the PDS outlets.

## GOVERNMENT SCHEMES ON FOOD SECURITY

1. **National Food Security Act (NFSA), 2013**
- Launch:** The Union government has notified the National Food Security Act (NFSA), 2013 on **10th September 2013**.
- Objective:** To provide for **food and nutritional security** in human **life cycle approach**, by ensuring access to adequate quantity of quality food at affordable prices to people to live a **life with dignity**.
- Implementing agency:** The Act provides for **State Food Commission (SFC)** in **every State/UT**, for the purpose of monitoring and review of implementation of the Act.

**Salient features of the NFAS, 2013:**

Coverage	<ul style="list-style-type: none"> <li>75% of the rural population and upto 50% of the urban population for receiving subsidized foodgrains under Targeted Public Distribution System (TPDS).</li> <li>Overall, NFSA caters to 67% of the total population.</li> </ul>
Beneficiaries and Entitlement	<p>There are two categories of beneficiary households under the NFSA:</p> <ul style="list-style-type: none"> <li><b>Antyodaya Anna Yojana (AYY):</b> AAY households are entitled to 35 kg of foodgrains per month irrespective of the number of family members.</li> <li><b>The Priority Households:</b> the priority households get food grains depending on the number of family members (each member 5 kg per month).</li> <li>The identification of eligible households is to be done by States/UTs.</li> <li>The beneficiaries will be provided with food grains at <b>subsidized prices of Rs. 3/2/1 per kg for rice, wheat and coarse grains</b> under TPDS.</li> </ul>
Nutritional Support to women and children	<ul style="list-style-type: none"> <li>Pregnant women and lactating mothers and children (6-14 years) will be entitled to meals as per prescribed nutritional norms under Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes.</li> <li>Higher nutritional norms have been prescribed for malnourished children upto 6 years of age.</li> </ul>
Maternity Benefit	Pregnant women and lactating mothers will also be entitled to receive maternity benefit of <b>not less than Rs. 6,000</b> .
Women Empowerment	Eldest woman of the household of age 18 years or above to be the <b>head of the household</b> for the purpose of issuing ration cards.
Assistance by central government	The Central Government will provide assistance to States in meeting the expenditure incurred by them on transportation of foodgrains within the State, its handling and <b>FPS dealers' margin</b> as per norms to be devised for this purpose.
Food Security Allowance	Provision for food security allowance to entitled beneficiaries in case of <b>non-supply of entitled foodgrains or meals</b> .

**2. Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**

- Launch:** It is a food security welfare scheme announced by the Government of India in **March 2020**, during the **COVID-19 pandemic** in India.
- It was announced as a part of the **Pradhan Mantri Garib Kalyan Yojana**, which is a comprehensive relief package of **Rs 1.70 Lakh Crore** for the poor to help them fight the battle against Coronavirus.
- Implementing agency:** The program is operated by the **Department of Food and Public Distribution** under the Ministry of Consumer Affairs, Food and Public Distribution.
- Objective:** It is aimed at providing **free foodgrains — 5 kg per person per month** — to eligible beneficiaries of the National Food Security Act (NFSA), 2013. This is **over and above** their monthly entitlement under the NFSA.
- How is the PM-GKAY different from the NFSA?**
- The **NFSA is a right-based scheme** under a law of Parliament, while the **PM-GKAY** is a scheme announced by the **executive** as a **top-up** to the entitlements under the NFSA.
  - The **PM-GKAY** provides additional benefits to NFSA beneficiaries but **does not cover additional beneficiaries** beyond the accepted limit of 81.35 crore persons under the **NFSA**.
- 3. Atmanirbhar Bharat Rozgar Yojana:** This scheme focuses on generating employment opportunities and promoting self-reliance among the workforce, indirectly impacting food security.
- 4. Pradhan Mantri Kisan Samman Nidhi:** This program provides income support to small and marginal farmers, contributing to their economic well-being and food security.
- 5. Intensified Mission Indradhanush 3.0 Scheme:** This initiative aims to boost vaccination rates among children and pregnant women, indirectly impacting child nutrition and health.

## MANUAL SCAVENGING IN INDIA

### CONTEXT

Over the past five years, there have been 339 deaths reported during sewer and septic tank cleaning activities, despite the ban on manual scavenging, as stated by the Minister of State for Social Justice and Empowerment.

### WHAT IS MANUAL SCAVENGING?

- Manual scavenging is a dehumanizing practice that involves the manual cleaning and handling of human excreta from dry latrines, sewers, septic tanks, railway lines, and other such places, typically using basic tools like brooms.
- It is predominantly a caste-based and forced occupation in India.
- The eradication of manual scavenging is of utmost importance for achieving various Sustainable Development Goals (SDGs).
  - Manual scavenging undermines SDGs related to clean water and sanitation (Goal 6), decent work and economic growth (Goal 8), reduced inequalities (Goal 10), and peace, justice and strong institutions (Goal 16).
- This practice not only violates various international conventions but also contradicts India's legislative and constitutional mandates.



### Prevalence of Manual Scavenging in India

- Currently, there are approximately 58,098 individuals identified as "eligible manual scavengers" across the country, according to the survey by the Social Justice and Empowerment Ministry.
- More than 55% of the 58,098 manual scavengers identified were from Uttar Pradesh.
- Of the 58,098 manual scavengers identified, more than 40,000 workers belong to the Scheduled Castes, while fewer than 1,000 belong to the Scheduled Tribes and OBCs combined.

### FACTORS RESPONSIBLE FOR THE PERSISTENCE OF MANUAL SCAVENGING IN INDIA

- Informal Economy and Lack of Recognition:** The practice of manual scavenging often occurs within the informal economy, making it challenging to identify and provide associated rights and protections to those involved.
- Continuance of Unsanitary Latrines:** Many parts of India still have unsanitary dry latrines that require manual cleaning. Lack of modern, hygienic toilet facilities leads to continued reliance on manual scavenging for waste disposal.
- Increasing Urbanization:** Urbanization has led to the construction of toilets under initiatives like 'Swachh Bharat Mission,' but many of these toilets require manual cleaning due to poor planning and lack of long-term waste disposal solutions.
- Weak Legal Framework:** The Manual Scavenging (Prohibition) Act of 2013 does not consider the cleaning of human excreta with protective gear as manual scavenging, creating loopholes in the law and failing to address the issue comprehensively.
- Ineffective Implementation:** Despite the ban on manual scavenging since 1993, the practice persists due to inadequate enforcement and implementation of the laws and regulations.
- Social Deprivation:** Manual scavengers, often from certain marginalized castes, have faced social stigma for generations. Despite welfare measures and laws, they have been shunned and despised, leading to limited opportunities for them to escape this occupation.
- Water Scarcity and Sanitation Issues:** In certain rural areas of India, inadequate access to proper water supply results in the manual removal of excreta from toilets, as alternative sanitation facilities are lacking.

- Challenges in Restoration and Rehabilitation:** The complex procedures for procuring loans through different schemes, such as the **National Safai Karamcharis Finance and Development Corporation (NSKFDC)**, create barriers for manual scavengers to access funds for restoration and rehabilitation.
- Lack of Organized Representation:** Manual scavengers often lack organized representation, such as trade unions or advocacy groups, which could amplify their voices and protect their rights. They belong to **highly marginalized sections of society**, perpetuating their exploitation.
- Absence of Mechanization:** The design of septic tanks often requires manual cleaning, as they are not equipped with mechanisms for safe and automated disposal of waste, further perpetuating the need for manual scavenging.

### **INITIATIVES TAKEN TO PREVENT MANUAL SCAVENGING**

The Government of India has undertaken several initiatives to address the issue of manual scavenging and improve the lives of those involved.

- National Action for Mechanized Sanitation Ecosystem (NAMASTE):** It is a **Central Sector Scheme**, launched to **promote 100% mechanization**, specially cleaning of sewers, septic tanks, desilting of drains, garbage lifting, sludge handling, solid and medical waste disposal etc.
- The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013:** This Act supersedes the 1993 Act and prohibits all forms of manual excrement cleaning of insanitary latrines, open drains, or pits.
  - It also focuses on the **rehabilitation of manual scavengers** and provides measures for their welfare.
- The Prohibition of Employment as Manual Scavengers and their Rehabilitation (Amendment) Bill, 2020:** This proposed amendment aims to mechanize sewer cleaning, introduce on-site protection for workers, and provide compensation to manual scavengers in case of sewer-related deaths. However, it is still awaiting cabinet approval.
- The Building and Maintenance of Insanitary Latrines Act, 2013:** This Act prohibits the construction or maintenance of unsanitary toilets and the hiring of individuals for manual scavenging.
  - It also places a **constitutional responsibility** on the government to provide alternative jobs and assistance to manual scavenging communities as reparation for historical injustice and indignity.
- Changed terminologies:** Prohibiting use of the word ‘manhole’ anymore and instead using only ‘machine-hole’ to support the government’s decision to eradicate manual scavenging.
- Safai-mitra Suraksha Challenge across 243 cities:** It aims to ensure that no life is ever lost while cleaning sewer or septic tanks.
  - Under the campaign, sewers and septic tanks in **243 cities will be mechanized** and a **helpline created to register complaints** if manual scavenging is reported. Cities which reach the end result will receive prize money.
- Swachhta Abhiyan App:** Developed to identify and geotag insanitary latrines and manual scavengers, this app helps in replacing insanitary latrines with sanitary latrines and facilitating the rehabilitation of manual scavengers, thereby promoting a life of dignity for them.
- Safai Karamchari vs Union of India, 2014:** The Supreme Court has ruled that the continuance of manual scavenging in the country is in blatant **violation of Article 17 of the Constitution of India** by which, “untouchability is abolished and its practice in any form is forbidden”.
  - The court was emphatic about the **duty cast on all states and union territories** “to fully implement the law and to take action against the violators”.

### **WAY FORWARD**

- Eliminating the demand:**
- Promoting **scientific waste disposal** and raising awareness to prevent the clogging of sewer lines.
- Replicating **successful models like the Kerala model**, which employs technology-driven solutions for manhole cleaning.
- Encouraging **behavioural change** through information, education, and communication campaigns, along with effective implementation of laws.
- Ensuring access to **Water, Sanitation, and Hygiene (WASH)** facilities to facilitate behavioural changes.
- Eliminating the supply:**
- Ensuring proper identification of manual scavengers through accurate **data collection and surveys**.
- Recognizing and **prioritizing the needs of women** engaged in manual scavenging and empowering them.

- Facilitating **easy access to rehabilitation measures**, including loans and skill development programs, and providing legal support in case of violations of the law.
- Mobilizing manual scavengers into **trade unions, self-help groups, cooperatives, and pressure groups** to protect their interests and give them a voice.
- Inclusive policy-making** by actively involving manual scavengers as stakeholders to identify loopholes in the system and shape effective policies.

## MOB LYNCHING

### CONTEXT

The Supreme Court has asked the Ministry of Home Affairs and the governments of six States to respond for their failure in the past five years to act against lynching and mob violence.

### WHAT IS MOB LYNCHING?

- Mob lynching is a **form of violence in which a mob**, under the pretext of administering justice without trial, executes a **presumed offender**, often after inflicting torture.
- It is an **illegally authorized way** of punishing somebody by an informal group. It is most often also referred as **informal public executions** by a mob who wish to punish an alleged transgressor, or to intimidate a group.
- Such incidents are egregious **manifestations of prejudice, intolerance, and contempt** towards the rule of law.

### THE RISING TREND OF MOB LYNCHING IN INDIA

- According to an **India Spend analysis**, the number of incidences of mob lynching is **increasing every year**.
- In 2020, India witnessed 23 incidents** of mob lynching as against **107 incidents in 2019** as per the reportage in the media. These 23 incidents claimed 22 lives.

#### Case studies on mob lynching

- Palghar mob Lynching case:** On April 16, 2020, a driver and two Sadhus were brutally killed by an angry mob in Maharashtra's Palghar district. The incident was triggered by a WhatsApp rumor claiming the presence of thieves in the village during the COVID-19 lockdown.
- Dadri Lynching case:** It took place in Bisra Village, Uttar Pradesh in 2015, involved the brutal killing of Mohammad Akhlaq. He was accused of slaughtering a cow for consumption, and the incident stemmed from regional and communal differences.

### FACTORS RESPONSIBLE FOR MOB LYNCHING IN INDIA

- Mob Psychology:** People feel less fear of punishment when acting in groups, as it becomes harder to identify individual culprits.
- Administrative Failure:** The perception that culprits often go unpunished, particularly in heinous crimes like rape, child abduction, and cow slaughter, contributes to vigilantism.
- Rumors on social media:** Misinformation and propaganda spread through platforms like Facebook and WhatsApp have led to impulsive acts of violence.
- Political Patronage:** Competitive electoral politics has led to the mobilization of voters based on social divisions and the use of violence to gain support and intimidate opponents.
- Societal factors:** The concept of "instant" justice is popular, and the sociopolitical framework of the country involves deep fissures, prejudices, and biases based on factors such as caste and religion.
- Cattle Protection Laws:** In certain states, laws related to cattle protection place the burden of proof on the victims, leading to a presumption of guilt. This results in cases being filed against the victims themselves, criminalizing certain professions such as transportation, butchery, and leather work.

### WHY MOB LYNCHING IS A CAUSE OF CONCERN?

- Rise of a retributive society:** The increasing cases of lynching indicate the emergence of a retributive society in India, where instead of seeking legal justice, people resort to taking revenge to satisfy themselves.
- Violation of the rule of law:** Lynching acts directly challenge the established rule of law and undermines the authority of the legal system and creates a sense of lawlessness and vigilantism.

- Violation of Rights:** Mob lynching is a violation of human dignity, Article 21 of the Constitution, and a gross infringement of the Universal Declaration of Human Rights.
  - Such incidents also violate the Right to Equality and Prohibition of discrimination, which are enshrined in Articles 14 and 15 of the Constitution of India.
- Fear psychosis:** Lynchings are intended to instill fear and serve as warnings to others. They create a climate of fear in society, particularly for minority communities.
- Fueling communalism and casteism:** The majority of lynching victims belong to vulnerable sections of society, such as religious minorities, lower castes, and nomadic tribes. This perpetuates communal and caste tensions, posing a threat to India's secular fabric and diversity.
- Contradiction to Indian societal values:** Mob lynching goes against the core values of Indian society, including peace, harmony, and tolerance.
- Sign of an immature society:** Mob lynching incidents reflect an immature society where differences in opinions are not tolerated or accommodated by its members.
- Economic impact:** The stricter laws on cow slaughter, transportation of cattle, and mob attacks by cow protection groups have disrupted not only the cattle trade and rural agricultural economy but also industries linked to farming, dairy, leather, and meat exports.

### **LEGAL PROVISIONS ON MOB LYNCHING IN INDIA**

- Section 223(a) of the Criminal Procedure Code, 1973** contains the provision for persons being charged for an offense jointly when they are accused of the same offence committed in the course of the same transaction which is applicable on two or more people.
- The Indian Penal Code (IPC), 1860** also has some proximate sections related to hate speech and hate crimes under Sections 153A (promoting enmity between different groups and doing acts prejudicial to maintenance of harmony), 153B (imputation, assertions prejudicial to national integration).
  - **Section 34 of the Indian Penal Code** provides punishment for acts done by several persons in furtherance of common intention, where each person is equally liable for the act.
  - **Section 120B (criminal conspiracy), 147 (rioting), 148 (rioting armed with deadly weapons) and 143/149 (unlawful assembly)** of Indian Penal Code are some other provisions related to offences against public tranquility.
  - Punishment for lynching may come under **Section 302** (murder), **304**(culpable homicide not amounting to murder), **307** (attempt to murder) etc.

### **SUPREME COURT OBSERVATIONS ON MOB LYNCHING**

- In **Tehseen Poonawalla vs Union of India, 2018**, Supreme Court condemned the incidents of lynching and mob violence as "**horrendous acts of mobocracy**", and asked Parliament to pass law establishing lynching as a separate offence with punishment.
  - Such a law should be effective enough to instill a **sense of fear in the perpetrators**.
  - SC said that such incidents "**threaten rule of law** and the country's social fabric."
  - The court said the **growing numbness of the ordinary Indian** to the frequent incidents of lynching happening right before his eyes in a society based on rule of law is shocking.
  - It is also the **obligation of the Centre and the States** to ensure that "nobody takes the law into his hands nor become a law into himself".

### **GOVERNMENT STEPS TAKEN SO FAR**

- States such as **Manipur, West Bengal and Rajasthan** have passed laws against mob lynching.
- The **State Law Commission of UP** recommended **jail terms ranging from seven years to life imprisonment** for those convicted for mob lynching. In its draft legislation, the commission also recommended, "up to three-year term for **derection of duty** by a police officer or a district magistrate."
- Schemes like **Ek Bharat Shrestha Bharat** also help strengthen communal harmony and reduce such tensions' incidence.

## WAY FORWARD

Supreme Court issued directions on the preventive, remedial and punitive measures to be adopted by the central and the state governments.

- The state governments shall designate a **senior police officer** in each district for taking measures to prevent incidents of mob violence and lynching.
- The state governments shall **immediately identify** districts, sub-divisions and villages where instances of lynching and mob violence have been reported in the recent past.
- The nodal officers shall bring to the notice of the DGP any **inter-district co-ordination** issues for devising a strategy to tackle lynching and mob violence related issues.
- It shall be the **duty of every police officer** to cause a mob to disperse, which, in his opinion, has a tendency to cause violence in the guise of vigilantism or otherwise.
- Central and the state governments should **broadcast on radio and television** and other media platforms including the official websites that lynching and mob violence shall invite serious consequences.
- Curb and **stop dissemination of irresponsible and explosive messages**, videos and other material on various social media platforms. **Register FIR** under relevant provisions of law against persons who disseminate such messages.
- Ensure that there is **no further harassment** of the family members of the victims.
- State governments shall prepare a lynching/mob violence **victim compensation scheme**.
- Cases of lynching and mob violence shall be specifically tried by **designated court/fast track courts** earmarked for that purpose in each district. The trial shall preferably be concluded within six months.
- To set a stern example in cases of mob violence and lynching, the trial court must ordinarily award **maximum sentence upon conviction** of the accused person.
- If it is found that a police officer or an officer of the district administration has failed to fulfill his duty, it will be considered as an act of deliberate negligence.

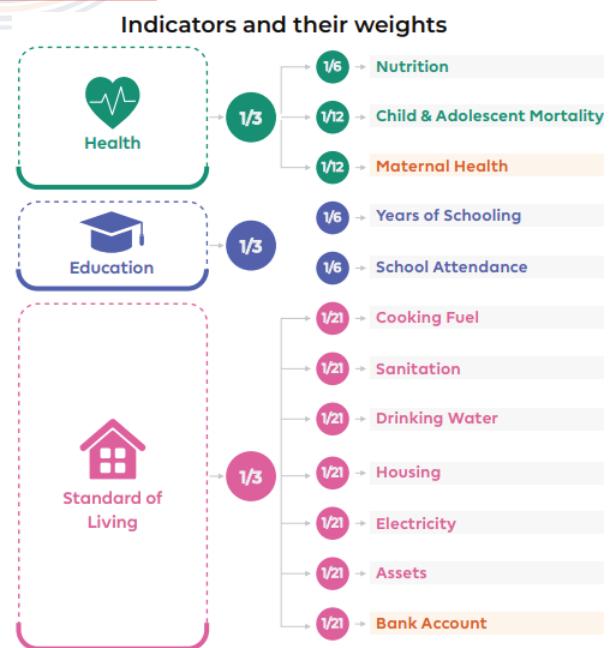
## NITI AAYOG'S REPORT ON MULTIDIMENSIONAL POVERTY

### CONTEXT

India has registered a significant decline in the number of multidimensionally poor, according to the 'National Multidimensional Poverty Index 2023', released by the NITI Aayog.

### ABOUT THE 'NATIONAL MULTIDIMENSIONAL POVERTY INDEX (MPI) 2023'

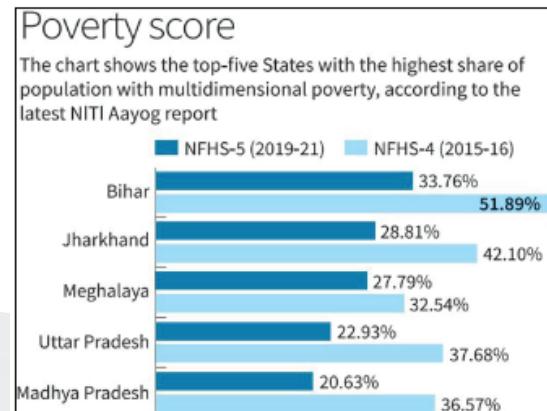
- The National MPI 2023 presents the **second edition of the national MPI** and is a follow-up to the Baseline Report published in November 2021.
  - It provides multidimensional poverty estimates for India's **36 States & Union Territories**, along with **707 administrative districts across 12 indicators**.
  - These estimates have been computed using data from the 5th round of the **NFHS (NFHS-5)** conducted in **2019-21**.
  - This edition also presents the **changes** in multidimensional poverty between the survey periods of **NFHS-4 (2015-16)** and **NFHS-5 (2019-21)**.
- **Methodology:** Like the global MPI, India's national MPI has three equally weighted dimensions – **Health, Education, and Standard of living** – which are represented by **12 indicators**.
  - The **global MPI Report** is jointly published by the Oxford Poverty and Human Development Initiative (OPHI) and the United Nations Development Programme (UNDP).
- **Aggregation of the Index:** The indices of the national MPI comprise:



- **Headcount ratio (H):** It is the proportion of multidimensionally poor in the population, which is arrived at by dividing number of multidimensionally poor persons by total population.
  - **Intensity of poverty (A):** It is the average proportion of deprivations which is experienced by multidimensionally poor individuals. To compute intensity, the weighted deprivation scores of all poor people are summed and then divided by the total number of poor people.
  - **Final calculation of MPI:** MPI value is arrived at by multiplying the headcount ratio (H) and the intensity of poverty (A), reflecting both the share of people in poverty and the degree to which they are deprived.

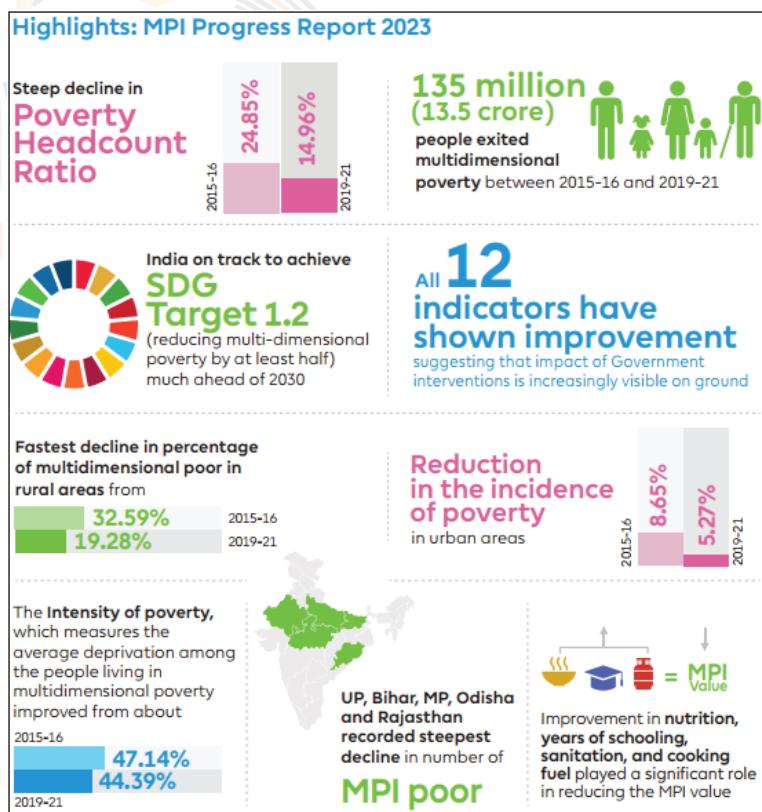
## KEY HIGHLIGHTS OF THE NATIONAL MULTIDIMENSIONAL POVERTY INDEX (MPI) 2023

- ☐ **Steep Decline in Poverty:** India has registered a significant **decline of 9.89 percentage points** in the number of multidimensionally poor, from **24.85% in 2015-16 to 14.96% in 2019-2021.**
    - The report claims that about **13.5 crore people came out of multidimensional poverty** during the period from 2015-16 to 2019-21.
    - According to the report, between 2015-16 and 2019-21, the **MPI value has nearly halved** from 0.117 to 0.066 and the **intensity of poverty** has reduced from **47% to 44%.**
    - It is a **major contribution towards achieving SDG target 1.2** that aims to reduce “at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions”. This indicates that India is well on course to achieve the SDG target 1.2 much ahead of 2030.



- #### State/UT-Wise Performance:

- **Delhi, Kerala, Goa and Tamil Nadu** have the least number of people facing multidimensional poverty along with the Union Territories.
  - **Bihar, Jharkhand, Meghalaya, Uttar Pradesh and Madhya Pradesh** top the chart where the percentage of total population who are multidimensionally poor is high.
  - **Uttar Pradesh** registered the **largest decline in number of poor** with 3.43 crore people escaping multidimensional poverty.
  - **Bihar saw the fastest reduction in MPI value** in absolute terms with the proportion of multidimensional poor reducing from 51.89% to 33.76% in 2019-21.



- ☐ **Rural-Urban Disparity:** The report said **rural areas** witnessed the **fastest decline** in poverty from 32.59% to 19.28%, primarily due to decrease in the number of multidimensionally poor in States such as Bihar, Uttar Pradesh, Madhya Pradesh, Odisha, and Rajasthan.
    - **Multidimensional poverty in urban areas,** during the same period, saw a decrease from 8.65% to 5.27%.

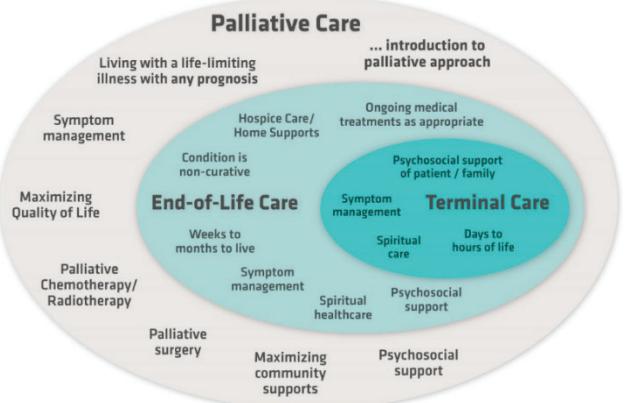
## PALLIATIVE CARE IN INDIA

### CONTEXT

Given the increasing burden of non-communicable diseases in India, there is a need for strengthening the palliative care system in the country.

### WHAT IS PALLIATIVE CARE?

- Palliative care is a **specialized approach to healthcare** that focuses on **improving the quality of life** for individuals suffering from **life-limiting diseases** like heart failure, kidney failure, certain neurological diseases, cancer, etc.
- WHO defined palliative care** as the active total care of patients whose disease is **not responsive to curative treatment**.
- It is often misinterpreted as **end-of-life care**. However, palliative care aims to improve the quality of life by addressing the **physical, psychological, spiritual, and social domains** of the patients.
- When is palliative care most effective?**
  - Palliative care is most effective when considered **early in the course of the illness**.
  - Early palliative care not only **improves quality of life** for patients but is also a **cost-saving public health intervention** that reduces unnecessary hospitalizations and use of health-care services.



### PALLIATIVE CARE AT GLOBAL LEVEL

- The 67th World Health Assembly in 2014 called for palliative care to be **integrated into health systems at all levels**.
- Furthermore, WHO explicitly recognizes that palliative care is **part of the comprehensive services required for noncommunicable diseases (NCDs)**, and fundamental to improving the quality of life, wellbeing, comfort, and human dignity for individuals.
- Additionally, palliative care is encompassed in the **definition of universal health coverage** and the WHO global strategy on people-centered and integrated health services.

### CURRENT STATE OF PALLIATIVE CARE IN INDIA

- According to Health Ministry data analysis report, palliative care is accessible to **only 1-2% of the estimated 7-10 million people** who require it in the country, compared to the **global average of 14%**.
- Also, palliative care in India has largely been available at **tertiary healthcare facilities in urban areas**.
- The analysis also shows that while **India stands at number three in terms of cancer incidence** in the world, most States in the country do not even have **enabling legislation or policy** to integrate palliative care with treatment offered to cancer patients.
  - The **financial burden for cancer treatment** is highest compared to all diseases, making it unaffordable for over 80% of the population.
  - The **cost of single hospitalization for cancer care** is three times that of any other non-communicable disease.
- Currently only three States in India (Kerala, Karnataka and Maharashtra) have a **palliative care policy**.

### BARRIERS TO PALLIATIVE CARE IN INDIA

#### Policy related gaps:

Lack of a dedicated policy	<ul style="list-style-type: none"> <li>- While there are national health programs and schemes that aim to improve healthcare services, there is a need for a comprehensive policy framework <b>specifically focused on palliative care</b>.</li> <li>- The <b>National Programme for Prevention &amp; Control of Non-Communicable Diseases (NP-NCD)</b>, launched in 2010 to counter the rising burden of non-communicable diseases in the country.</li> <li>- The NP-NCD emphasizes promotive, preventive, and curative care, but it <b>lacks sufficient focus on palliative care</b>.</li> </ul>
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<b>Lack of home-based care</b>	<ul style="list-style-type: none"> <li>- In the recently revised guidelines of NP-NCD, there is a specific mention of palliative care service delivery starting from <b>the district hospital</b>, but <b>no mention</b> is made regarding the provision of <b>home-based care</b>.</li> <li>- The lack of home-based care <b>exacerbates the burden on hospitals</b>, limits <b>patient comfort and choice</b>, and adds unnecessary <b>financial challenges</b> for patients and their families.</li> </ul>
<b>Funding and resources</b>	<ul style="list-style-type: none"> <li>- The lack of dedicated funding and resources for <b>palliative care programs</b> hinders their implementation and expansion. The <b>National Programme for Palliative Care (NPPC)</b>, announced in 2012, has faced challenges in implementation due to inadequate budgetary allocation.</li> </ul>

- Lack of Awareness and Recognition:** Palliative care is often misunderstood or overlooked, resulting in a lack of awareness among healthcare providers, policymakers, and the general public.
- Insufficient Integration:** Palliative care is not adequately integrated into the healthcare system, particularly at primary and community levels
- Cultural and Social Barriers:** Misconceptions and stigma associated with palliative care, such as the perception that it is only for patients with cancer or limited to the last weeks of life, can hinder access and understanding.
- Disease-Focused Healthcare System:** The healthcare system in India tends to be focused on disease treatment rather than comprehensive, patient-centered care.
- Lack of Trained Medical Staff:** Palliative care requires specialized training in pain management, care, and empathy. However, there is a shortage of well-trained doctors and medical staff in palliative care, which hampers the delivery of quality services.
- Neglected Pediatric Palliative Care:** There is a significant gap in pediatric palliative care services. Children facing chronic and life-limiting conditions often do not receive the specialized care and support they require, highlighting the need for urgent attention in this area.

#### Case Study: Kerala's Exemplary Model of Palliative Care

- Kerala has emerged as a **global leader in palliative care**. Despite **limited resources** and a challenging healthcare landscape, Kerala has developed a comprehensive and **community-based approach**.
- Key Elements of Kerala's Palliative Care Model:**
  - **Community Engagement:** Local communities, volunteers, and non-governmental organizations (NGOs) play a pivotal role in delivering care.
  - **Government Support:** It has implemented policies and initiatives that prioritize palliative care services, ensuring accessibility and affordability.
  - **Comprehensive Training Programs:** Kerala has established extensive training programs to equip healthcare professionals, volunteers, and family caregivers with the knowledge and skills required for effective palliative care.
  - **Integration into Primary Healthcare:** Palliative care is integrated into the existing primary healthcare system in Kerala, ensuring that it reaches patients at all stages of their illness.
  - **Collaboration and Networking:** Kerala's success in palliative care is attributed to effective collaboration and networking among various stakeholders.

#### WAY FORWARD

- Systemic approach:** India needs a systematic approach to improving palliative care. These improvements include increasing the workforce, better application of policies, good political support, and educating health care workers and patients requiring palliative treatment.
- Role of states:** Each state needs to develop its own policy that suits its needs and its social and cultural background. Community models for the provision of home-based palliative care need to be implemented all over the country.
- Palliative medicine in curriculum:** Introduction of palliative medicine into the curriculum of undergraduate education of doctors and nurses is recommended as an efficient way to broaden the base of palliative care coverage at the national level.
- Trained professionals:** Palliative care requires end-of-life conversations. So, there is a need for training professionals to work in a collaborative manner. People must also make a living will to designate a surrogate who can take decisions on their behalf when they are incapacitated.
- Rehabilitation of family members:** Apart from the patient, the survival and safety of members left behind is also a concern that should be addressed, especially in the case of India where it is missed.

- The 67th World Health Assembly in 2014 called for **palliative care** to be integrated into **health systems at all levels**. However, the realities on the ground are **a far cry from what is desirable**. It is crucial that we acknowledge the ongoing **pandemic of non-communicable diseases** in India and take immediate steps to **strengthen our palliative care services**.

## TRANSGENDER COMMUNITY AND THEIR RIGHTS IN INDIA

### CONTEXT

The Telangana High Court struck down the Telangana Eunuchs Act of 1919, terming it “unconstitutional” and an intrusion into the privacy and dignity of transgender people.

### ABOUT THE TELANGANA EUNUCHS ACT OF 1919

- Previously called the Andhra Pradesh (Telangana Area) Eunuchs Act, it was first enacted in 1919 in the **Hyderabad Nizam's dominions** and was applicable to “eunuchs”.
- It defined “eunuchs” as “all persons of the **male sex** who admit to be **impotent** or who clearly appear to be impotent on **medical inspection**”.
- Mandatory registration:** The Act mandated that all eunuchs had to register with the authorities. They were required to provide information such as their places of residence.
  - This provision was primarily aimed at monitoring eunuchs who were suspected of engaging in activities such as **kidnapping or castrating boys, or committing unnatural offenses**.
- Arrest and imprisonment:** The Act allowed for the arrest of transgender individuals **without a warrant**.
  - The Act also sought to imprison them for **up to two years** if they were found “in **female clothing** or ornamented or **singing, dancing**, or participating in **public entertainment** with a boy below the age of sixteen years.”

### ABOUT TRANSGENDERS

- According to the **World Health Organization**, Transgender is an umbrella term for people whose gender identity and expression does not conform to the norms and expectations traditionally associated with the sex assigned to them at birth.
- They are referred to as **transsexuals** if they desire medical assistance in order to make the transition from one biological sex to another.
- As per the Census of India 2011**, the total population of Transgenders in India is 4.9lakh
  - The highest proportion of the trans-gender population, about **28%**, **has been identified in Uttar Pradesh** followed by Andhra Pradesh, Maharashtra, Bihar, Madhya Pradesh and West Bengal.
- In India, there are a wide range of transgender related identities which includes **the Hijras, Aravanis, Kothis, Jogtas/ Jogappas, Shiv Sakthis**.
  - ‘**Hijra**’ is a Persian word translated as eunuch which is used in common parlance for transgender community in India.
  - ‘**Aravani**’ is a term used for male-to-female transgender who undergo genital modification through SRS (Sex Reassignment Surgery) or perform Nirwaan which is a traditional mode of castration.
  - **Kothi** is used for those who adopt a feminine role in same sex relationships, but do not live in communes as Aravanis.
  - **Jogtas/ Jogappas** found in Maharashtra and Karnataka are male to female transgender who devote themselves to the service of a particular god.
  - **Shiv Shakthis** found in Andhra Pradesh are males who are considered married to gods particularly Lord Shiva. They usually work as spiritual healers or astrologers.

### CHALLENGES FACED BY THE TRANSGENDER COMMUNITY IN INDIA

- Discrimination:** These people experience discrimination at work, in educational institutions, and in their own homes, which has a negative impact on their general well-being.
- Social Stigma:** Transgender individuals often face social stigma and exclusion, making it difficult for them to adopt children, inherit property, or access basic rights and services. They may be marginalized and forced into menial jobs or pushed into sex work as a result of limited opportunities.
- Unemployment:** Due to the associated societal stigma, the community has few employment options and experiences severe discrimination at work.

- Lack of public amenities:** They have trouble accessing public restrooms and other public areas. In hospitals, schools, and prisons, they frequently encounter issues.
- Gender-based violence:** Transgenders are often subjected to sexual abuse, rape and exploitation.
- Healthcare Disparities:** Transgender people often encounter challenges in accessing adequate healthcare services that are sensitive to their specific needs.
- Lack of Representation:** They are often underrepresented in media, politics and governance and are not included in mainstream society. This can make it difficult for them to have their voices heard and for their needs to be addressed.

### **TRANSGENDER RIGHTS IN INDIA**

- Third Gender:** The Supreme Court in 2014 officially declared ‘transgender’ as the ‘third gender’ in India via the landmark judgment **NALSA V. Union of India & Ors (2014)**.
  - The court held that all transgender persons are entitled to fundamental rights under **Article 14** (Equality), **Article 15** (Non-Discrimination), **Article 16** (Equal Opportunity in Public Employment), **Article 19(1)(a)** (Right to Free Speech) and **Article 21** (Right to Life) of the Indian Constitution.
  - **In 2020, the parliament** legally recognized ‘transgender’ as an **official gender in India**.
- Liberty to Choose Sexual or Gender Identity:** In the case of **G. Nagalakshmi v. Director General of Police (2014)**, the Madras High Court observed that in the absence of any special law, any person has the liberty to choose their sexual or gender identity and upheld the petitioner’s right to choose their own gender.
- Right to Privacy:** In **Puttuswamy v. Union of India (2017)**, the Supreme Court noted the constitutional right to privacy inherent in the right to life, equality and fundamental freedoms. This includes the right to have intimate relations of one’s choice and the right to sexual orientation and gender identity.
- Decriminalisation of Section 377 of IPC:** In **Navtej Singh Johar v. the Union of India (2018)**, the Supreme Court (SC) decriminalised homosexuality by striking off parts of Section 377 of the Indian Penal Code (IPC) which were held violative of Fundamental Rights of LGBTQ Community.
- Transgender Persons (Protection of Rights) Act, 2019:** The Act aims to end discrimination against transgender persons in accessing education, employment and healthcare.
  - **The Act defines transgender** as “whose gender does not match with the gender assigned at birth and includes trans-men, trans-women, genderqueers, and other sociocultural identities.”
  - **Certificate of Identity:** Transgender person has to obtain a Certificate of Identity which will confer rights and be proof of recognition of identity as a transgender person.
  - **Right of Residence:** No transgender person shall be separated from parents or immediate family on the ground of being a transgender.
  - **Health Care:** The Act also seeks to provide rights of health facilities to transgender persons including separate HIV surveillance centres, and sex reassignment surgeries.

### **INITIATIVES FOR TRANSGENDER COMMUNITY IN INDIA**

- Transgender Persons (Protection of Rights) Rules, 2020:** The rules seek to recognise the identity of transgenders and prohibit discrimination in the fields of education, employment, healthcare, holding or disposing of property, holding public or private office, and access to and use of public services and benefits.
- National Council for Transgender Persons:** It advises the Union Government for the formulation and monitoring of policies and redress the grievances of transgender persons.
- SMILE (Support for Marginalized Individuals for Livelihood and Enterprise):** This scheme has been launched by the Ministry of Social Justice and Empowerment. Key features include:
  - Counseling, basic documentation, **education, skill development, financial assistance** to transgender students.
  - **Composite medical health** and setting up of **Garima Grehs** in each state for providing shelter facility for abandoned and orphaned transgender persons.
  - **Transgender protection cells** in India for providing quick redressal of offences & crimes against transgender persons.
- National Education Policy 2020:** NEP 2020 identifies transgender children as Socio-Economically Disadvantaged Groups and provides for equitable quality education for all such students.

- A 'Gender-Inclusion Fund' will be constituted under the new policy to build the nation's capacity to provide equitable quality education for all girls as well as transgender students.
- PM-DAKSH:** The Ministry of Social Justice and Empowerment is imparting skill development training to the Transgender beneficiaries of the SMILE Scheme through PM-DAKSH.

### **STATE LAWS TO PROTECT THE TRANSGENDER POPULATION**

- Odisha - 'Sweekruti':** To secure the rights of transgender persons and ensure equitable justice. Skill up-gradation, legal aid, health care provision.
- Kerala:** Transgender policy in 2015, Schools, Justice board for welfare of transgenders, Fully Transgender run metro station, G-Taxis: entirely owned and run by transgenders, free sex-reassignment surgeries.
- Tamil Nadu:** Transgender welfare policy, free surgeries, the first state to form a Transgender board with members from the community.
- Chandigarh:** Transgender board comprising members from all departments viz., police, health, social welfare, education and the law department.

### **WAY FORWARD**

- Acceptance:** The social stigma attached to the transgender community needs to be eliminated through a multifaceted strategy with a focus on public awareness initiatives.
  - To recognize the transgender community as an **essential part of societal life**, there needs to be widespread **sensitization, beginning at the school level**.
- Education:** It's crucial to develop an efficient system for educating students at colleges and universities on the needs and makeup of the transgender community.
- Financial Security:** To begin their career as an entrepreneur or businessman, it is important to guarantee liberal credit facilities and financial help.
- Employment:** Plans and initiatives should focus on enhancing the skills of transgender communities. The hiring, retention, and promotion processes must successfully abide by anti-discrimination policies.
- Transgender-Inclusive Policies:** Legal and the law enforcement systems need to be empowered and sensitized on the issues of Transgender community.

## **DRUG REGULATION IN INDIA**

### **CONTEXT**

Since October last year, Indian pharma companies have been under constant international scrutiny for exporting allegedly contaminated drugs, which have led to deaths of children.

### **MORE ON THE NEWS**

- Recently, **Nigeria** raised the red flag on two oral drugs; **Cameroon** too sounded an alarm over another cough syrup reportedly made in India when several children died.
- Sri Lanka** called out two drugs manufactured in India linking them to adverse reactions in patients.
- In the latest move, **Gambia** has declared that from July 1, it is running strict quality control checks on all pharma products shipped into the country, before they leave Indian shores.
- In December 2022, **Uzbekistan's** health ministry has said that several children have died after drinking a cough syrup manufactured by Indian drug maker Marion Biotech.

### **HOW DRUG REGULATION WORKS IN INDIA?**

- The Indian drug system is mainly regulated under the ambit of the Drugs and Cosmetics Act of 1940, and by multiple ministries, including the Ministry of Health and Family Welfare.
- The Act and its corresponding rules allow the Centre and State to regulate different aspects of the drugs ecosystem.

Main functions of the Central Government	Main functions of State Governments
<input type="checkbox"/> Approval of new drugs. <input type="checkbox"/> Registration and control of imported drugs. <input type="checkbox"/> Approvals for clinical trials. <input type="checkbox"/> Laying down standards for drugs, cosmetics, diagnostics, and devices. <input type="checkbox"/> Coordinating activities of the states.	<input type="checkbox"/> Licensing of manufacturing establishments and sale premises. <input type="checkbox"/> Undertaking inspections of such premises to ensure compliance with license conditions. <input type="checkbox"/> Drawing samples for testing and monitoring of quality of drugs. <input type="checkbox"/> Taking actions like suspension/cancellation of licenses, surveillance over sale of spurious and adulterated drugs.

**Key authorities under the Drugs and Cosmetics Act of 1940:**

- **Central Drugs Standard Control Organisation (CDSCO):** The CDSCO is the regulatory body responsible for the regulation and control of the import, manufacture, and sale of drugs in India. It operates under the Ministry of Health and Family Welfare. However, it's not a statutory body.
- **Drug Controller General of India (DCGI):** The DCGI is the head of the CDSCO and serves as the principal regulatory authority for drugs in India. The DCGI is responsible for granting licenses for the import, manufacture, and sale of drugs, as well as monitoring their safety, quality, and efficacy.
- **Drug Technical Advisory Board (DTAB):** The DTAB is an advisory body that provides technical advice to the DCGI on matters related to drug regulation. It consists of experts from various fields, including medicine, pharmacy, and toxicology.
- **Drug Consultative Committee (DCC):** The DCC is another advisory body that assists the DCGI in formulating policies and regulations concerning drug control.
- **State Drug Regulatory Authorities (SDRAs):** which are statutory bodies created under the Drugs and Cosmetics Act, 1940, regulate drug policies at the state level. Falling under the ambit of the respective Health Departments of each state, SDRAs are tasked with limited aspects of drug regulation.

### **CHALLENGES IN INDIA'S DRUG REGULATORY ECOSYSTEM**

- Ambiguous Distribution of Powers and Responsibilities:** The Centre and the States lack clearly codified distribution of powers and responsibilities.
  - For instance, with **Health being a State subject** under the **7th schedule of the Constitution**, states also exercise substantial drug regulation in addition to the provisions of the Act of 1940.
- Lack of Independence and Autonomy:** The Central Drugs Standard Control Organisation (CDSCO) is not a statutory body, which limits its independence and autonomy.
  - Similarly, **State Drug Regulatory Authorities (SDRAs)** face issues of lack of uniformity and proper demarcation of responsibilities, often being combined with food regulation departments.
- Insufficient Resources:** The command-and-control architecture of drug regulation in India requires significant resources in terms of human capital and physical infrastructure.
  - However, **both the CDSCO and SDRAs** lack adequate resources to effectively regulate the numerous pharmaceutical manufacturing units and drug companies across the country.
- Lack of Transparency:** The decision-making process within the drug regulatory system in India is often opaque, and there is a lack of mandatory and comprehensive information sharing from the regulator.
- Outsourcing:** There have been instances of Indian pharmaceuticals and big companies often outsourcing their manufacturing to smaller units. This creates a bigger problem as the country lacks the resources to maintain a regular quality check on these products.
- Corruption:** Instances of corruption have been reported in the drug regulatory ecosystem.

### **WAY FORWARD**

- Streamlined Regulation System:** Develop a clear and comprehensive regulation system that defines the roles and responsibilities of all stakeholders involved in drug regulation.
- One quality one standard:** All state drug regulatory bodies should be merged with the Central Drugs Standard Control Organisation (CDSCO) to ensure "one quality one standard" for Indian drugs.

- Statutory Recognition for CDSCO:** Grant statutory recognition to the Central Drugs Standard Control Organisation (CDSCO) to enhance its regulatory independence and autonomy.
- International Cooperation:** Strengthen collaboration and cooperation with international bodies like the World Health Organization (WHO) to align regulatory standards and promote adherence to Good Manufacturing Practices (GMP).
- Allocation of Sufficient Resources:** Allocate adequate financial resources to ensure the regulatory bodies, such as the CDSCO and State Drug Regulatory Authorities (SDRAs), have the necessary physical infrastructure and human resources for effective regulation.
- Enhance Transparency and Accountability:** Promote transparency in the drug regulatory process by making information sharing mandatory and comprehensive.
- Strengthen Capacity Building:** Invest in continuous training and capacity-building programs for regulatory officials to enhance their knowledge and expertise in areas such as scientific evaluation, risk assessment, and regulatory compliance.

## UNESCO GLOBAL EDUCATION MONITORING REPORT 2023

### CONTEXT

The UNESCO has warned against the use of digital products in educational settings in its latest publication titled 'Global Education Monitoring Report - Technology in education: a tool on whose terms?'

### KEY HIGHLIGHTS OF THE REPORT

- Increased Access to Learning Resources:** Digital technology has dramatically increased access to teaching and learning resources.
  - Examples include digital libraries, educational portals, and open educational resources.
  - The report cited the examples of **National Academic Digital Library of Ethiopia** and **National Digital Library of India**.
- Improved Learning Outcomes in Some Contexts:** Some education technology has shown small to medium-sized positive effects on certain types of learning.
  - In China, high-quality lesson recordings delivered to **100 million rural students** improved student outcomes by 32% and reduced urban-rural earning gaps by 38%
- Distance Learning During COVID-19:** Online learning became a lifeline during the COVID-19 school closures, offering a potential reach of **over 1 billion students**. It allowed students to continue their education remotely during times of crisis.
- Bridging Gaps in Hard-to-Reach Populations:** Technology, such as radio and mobile phones, has been used to deliver education to hard-to-reach populations.
  - In Mexico, a program of televised lessons combined with in-class support increased secondary **school enrollment by 21%**.
- Accessible Technology for Learners with Disabilities:** Technology has opened up opportunities for learners with disabilities by providing accessible devices and tools, reducing barriers to learning.
  - **About 87% of visually impaired adults** indicated that accessible technology devices were replacing traditional assistive tools.

### CHALLENGES POSED BY TECHNOLOGY TO EDUCATION

- Little Impact:** The report highlighted that there is little robust evidence on digital technology's added value in education.
  - At the same time, there was ample evidence of a **negative link between excessive screen time** and a **child's educational performance** and emotional stability, it said.
- Unequal Access:** Technology offers an education lifeline for millions but excludes many more.
  - Access to the internet and digital devices remains highly unequal, especially in **low-income and marginalized communities**. This digital divide exacerbates existing educational inequalities.
- Limited Learning Outcomes:** In certain cases, technology is implemented without proper incorporation into pedagogy, leading to limited improvements in learning.
- Detrimental Impact:** Technology can have a detrimental impact if used inappropriately or excessively.
  - **Excessive ICT use** has been linked to lower student performance, and mere proximity to mobile devices can distract students and negatively affect learning.

- Challenges in Teacher Preparedness:** Teachers often feel unprepared and lack confidence in integrating technology into their teaching practices.
  - Only half of countries have standards for **developing teacher ICT skills**, and few teacher training programs cover **cybersecurity**.
- Issues with Digital Data Management:** Various issues impede the potential of digital data in education management.
  - Many countries lack the capacity to effectively use digital data, and data systems struggle to link and analyze information effectively.
- Lack of Regulation in Online Content:** Online content has grown without sufficient regulation of quality control or diversity.
  - Nearly 90% of content in higher education repositories with open education resource collections was created in **Europe and Northern America**;
  - 92% of content in the OER Commons global library is in **English**.
  - Massive open online courses (**MOOCs**) mainly benefit educated learners and those from **richer countries**.
- Ethical and Regulatory Challenges in Higher Education:** Higher education is rapidly adopting digital technology through platforms like MOOCs, challenging traditional roles and posing ethical and regulatory challenges, including data privacy concerns.
- Short-Term Approach to Technology Investments:** Technology is often bought to plug a gap without considering long-term costs.
  - The cost of moving to digital learning in **low-income countries** and connecting all schools to the internet in lower-middle-income countries would add significantly to their **current financing gap** for achieving national education targets.
- Impact on Children's Well-being and the Environment:** Children's data privacy is not adequately protected, and some education technology products have been associated with uses that risk or infringe on children's rights.
  - Moreover, technology contributes to **e-waste and carbon emissions**, affecting the environment.

## RECOMMENDATIONS BY THE REPORT

- Establish a Broad Curriculum and Assessment Framework for Digital Competences:**
  - The curriculum and assessment framework should not be tied to specific technologies but should focus on **digital competences** that are applicable in various contexts, including education, work, and citizenship.
  - Recognize and integrate **informal learning** that occurs outside of formal educational settings, acknowledging the skills and knowledge students acquire through technology use beyond the classroom.
  - Enable teachers and learners to fully benefit from technology's potential in education while promoting **digital literacy** and responsible use.
- Implement Legislation and Standards to Protect Human Rights and Online Safety:**
  - Adopt and enforce legislation, standards, and good practices to safeguard the **human rights, well-being, and online safety** of learners and educators.
  - Consider factors such as screen and connection time, **data privacy, and data protection** to ensure responsible and ethical use of technology in education.
  - Prevent student and teacher surveillance and regulate the use of **artificial intelligence** in education to maintain privacy and data protection.
- Consider Short- and Long-Term Implications for the Physical Environment:**
  - Policymakers should carefully assess the short- and long-term implications of deploying digital technology in education, particularly its impact on the **physical environment**.
  - Avoid applications that are unsustainable in terms of their **energy and material requirements**, taking into account **environmental sustainability** when making decisions about technology adoption in education.
- Leverage Technology for Long-Term, Sustainable Benefits:**
  - Rather than viewing technology as a short-term project, policymakers should leverage it to yield **long-term, sustainable benefits for education**.
  - Avoid being driven solely by **narrow economic concerns** and vested interests, and instead prioritize the long-term impact of technology on education and society.

## NURSING CRISIS IN INDIA

### CONTEXT

According to the data from Health Ministry, there are no nursing colleges in 40 percent of districts across India.

### KEY HIGHLIGHTS OF THE DATA

- **Shortage of Nurses:** India currently has close to 35 lakh nurses, but its nurse-to-population ratio is only 2.06:1000 against a global benchmark of 3:1000.
- **Regional Disparities:** Though there has been a 36% growth in the number of institutions offering undergraduate nursing education since 2014-15, resulting in a 40% growth in nursing seats, there is a regional skew within these statistics.
  - There are **no nursing colleges in 40 percent of districts** across India.
  - About **64% of the nursing workforce** is currently trained in **just eight States**.
  - **42% of nursing institutions** are concentrated in Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Telangana, **while 17%** are in the western States of Rajasthan, Gujarat, and Maharashtra.
  - **Only 2% of nursing colleges** are in the **northeastern States**.
- **Growth of Nursing Colleges vis-à-vis Medical Colleges:** The growth of nursing colleges also lags far behind the 81% growth rate of medical colleges, with the number of undergraduate and postgraduate medical seats surging at 110% and 114%, respectively, since 2014-15.

### NURSING AND ITS SIGNIFICANCE IN HEALTHCARE

- Nursing is a healthcare profession that focuses on the **care of individuals and their families** to help them recover from illness and maintain optimal **health and quality of life**.
- Nurses are **distinct from other healthcare providers** as they have a **wide scope** of practice and approach to medical care. They play a **vital role in ensuring** that **patients receive the best treatment** and care.
- According to the WHO, approximately **27 million men and women** make up the global nursing and midwifery workforce, accounting for nearly **50% of the global health workforce**.

### REASONS FOR THE SHORTAGE OF NURSES IN INDIA

- **Lack of Nursing Colleges:** Lack of institutions offering nursing education makes it challenging for aspiring nurses from these regions to access proper training and education.
- **Inadequate Training Infrastructure:** Even in states with nursing colleges, the quality and capacity of training infrastructure may not be sufficient to meet the demand for nursing education.
- **Limited Awareness and Perception:** Nursing is still often perceived as a less desirable career option compared to other professions in the medical field, such as becoming a doctor.
- **Working Conditions:** Nurses in India often face challenging working conditions, including long working hours, less remuneration and high patient-to-nurse ratios.
- **Migration of Nurses:** Many qualified nurses from India choose to seek better opportunities and higher salaries abroad.

### GOVERNMENT INITIATIVES

- **Scheme for Setting up of Nursing Colleges:** The Central government has announced a scheme in April 2023 to set up 157 new nursing colleges co-located with medical colleges in the next two years, with financial support of ₹10 crore a college.
  - The scheme is aimed at correcting the **regional disparities** in the distribution of nursing colleges across the states and districts in India.
- **Guidelines to improve Working conditions:** The Union health ministry has issued draft guidelines, proposing annual **health check-ups**, a **creche facility** and **work hours** not exceeding 40 in a week, among other measures, to improve the **working conditions** of nurses in all healthcare institutions.
  - It has also recommended that all healthcare establishments may, as far as possible, provide **accommodation to their nursing staff** within or near their premises.
- **The International Council of Nurses:** It is a federation of more than 130 national nurses' associations, of which **India is a part**. was founded in **1899** and has its headquarters in **Geneva, Switzerland**.

### WAY FORWARD

- The Indian government's decision to set up **157 new nursing colleges** is a positive step in addressing the healthcare crisis in the country. However, it is essential to ensure that the **education imparted** in these colleges is of **high quality**, and students have access to the **latest technologies** and trends in the field.
- It is equally crucial to ensure that nursing professionals are given **proper communication training**, familiarized with rapidly **changing technologies** in medical care, and equipped to work autonomously.
- Additionally, the **upskilling of nurses** to take on leadership positions must be done through continuous training.
- The nursing curriculum** in India needs to be revamped to ensure that it is in line with the latest **healthcare trends and technologies**.
- Institutes should focus on providing **theoretical and practical knowledge** to nursing students, **covering all aspects of healthcare**, including geriatric care, pediatrics, and critical care.



## ETHICS - CASE STUDY OF THE MONTH

You are a municipal commissioner of a large city, having the reputation of a very honest and upright officer. A huge **multipurpose mall** is under construction in your city in which a large number of daily **wage earners** are employed. One night, during monsoons, a big chunk of the **roof collapsed causing** instant death of **four labourers** including **two minors**. Many more were seriously **injured** requiring immediate medical attention. The mishap resulted in a big hue and cry, forcing the government to institute an **enquiry**. Your preliminary enquiry has revealed a **series of anomalies**. The **material** used for the construction was of poor **quality**. Despite the approved building plans permitting only one basement, an **additional basement** has been constructed. This was **overlooked** during the periodic inspections by the building **inspector** of the municipal corporation. In your enquiry, you noticed that the construction of the mall was given the green signal despite **encroaching on** areas earmarked for a **green belt and a slip road** in the Zonal Master Plan of the city. The permission to construct the mall was accorded by the **previous Municipal Commissioner** who is not only your **senior** and well known to you professionally, but also a **good friend**.

Prima facie, the case appears to be of a widespread **nexus** between officials of the Municipal **Corporation** and the **builders**. Your **colleagues** are putting **pressure** on you to go slow in the enquiry. The **builder**, who is rich and influential, happens to be a close relative of a **powerful minister** in the state cabinet. The builder is persuading you to hush up the matter, promising you a fortune to do so. He also hinted that if this matter is not resolved at the earliest in his favour then there is somebody in his office who is waiting to file a case against you **under the POSH Act**.

Discuss the **ethical** issues involved in the case. What are the **options** available to you in this situation? Explain your **selected course** of action. (250 words)

### **CONTEXT-**

In India there are various incidents of man-made disasters happening in urban ecosystems especially disasters like collapse of buildings, bridges, and fire accidents etc. This is due to institutionalization of corruption in the Municipal Corporations and nexus between the builders, Municipal corporation staff and politicians. In such man-made disasters innocents like daily wage laborers, child laborers and other vulnerable sections are losing their lives, and they are the most vulnerable to such man-made disasters.

### **INTRODUCTION-**

As a Municipal Commissioner, I need to understand the gravity of the situation. In this case, the collapse of Multi-purpose Mall's roof is classic example of negligence, lack of integrity among the municipal staff and builder, low social responsibility and civic sense etc. As a Municipal Commissioner, I need to understand the gravity of the situation because there have similar incidents happened in India in the past such as- Collapse of Darjeeling bridge in 2011, Vivekananda flyover collapse in Kolkata, 2016, Mumbai foot over bridge collapse in 2019 etc.

But as a Municipal Commissioner, it is inevitable to have cognitive dissonance and so following ethical issues are involved as shown below-

### **ETHICAL ISSUES INVOLVED IN THIS CASE ARE-**

- Loyalty vs Duty bounded:** Conflict between loyalty towards my senior and friend who was the previous Municipal Commissioner and towards doing my duty of investigating the case.
- Personal vs public interests:** Conflict between my personal interest and public responsibilities. If I go slowly, I may get personal benefits while discharging my duties honestly may put me into personal difficulties.
- Personal-interests vs personal and professional ethics:** Personal ethics induced by parents, friends and teachers and professional ethics of code of conduct, duty bounded, upholding institutional integrity etc. leads to dilemma between personal and professional ethics, and personal interests.
- Honesty & Courage vs. Flattering:** Honesty is a facet of moral character that connotes truthfulness and straightforwardness of conduct. Similarly, courage means the ability to control fear by ignoring consequences while critical decision making. Flattery, on the other hand, is done to seek attention or try to win favor for unethical reasons.

### **THE DIFFERENT OPTIONS AVAILABLE IN THIS CASE ARE:**

- Go Slow and Hush Up the Matter:** If the enquiry is conducted slowly, the accident would soon fade away from public memory. It can then be closed without incriminating any officer or builder. This will make the officers of the Municipal Corporation happy and please the builder. I may also get a good reward for helping them.

2. **Proceed on Leave or Seek Transfer:** I can seek transfer from the charge or proceed on leave citing personal reasons or on medical grounds. This will save me from the trouble of getting into illegal action.
3. **Conduct a Proper Enquiry:** I must conduct a proper enquiry of the case and book all the culprits of the department as well as the builder. So I need to remain stuck to my moral principles of impartiality, integrity and probity thereby conducting a fair and transparent enquiry. If the builder and my senior officers are found guilty, a report regarding their conduct can be sent to the judicial and quasi-judicial authorities for further course of action.

#### **MY SELECTED COURSE OF ACTION:**

In this case, the third option is the best option. Such an action shall be in accordance with the duties and responsibilities assigned to me as a Municipal Commissioner. The poor people who lost their lives shall get justice and the recurrence of such incidents in future can be stopped.

So, the course of action is as follows:

- Expressing condolence to those who died and injured in this accident, and visiting them to express solidarity with them. Make formal arrangements for financial and livelihood compensation to the families
- Proceed with the investigation and speed up that process to ensure the justice delivery to the poor people and to not to repeat such incidents in the future. Because justice delayed is justice denied.
- I shall take due caution to avoid anyone making a POSH case against me by persuading my staff with the gravity of such kind of situations. However, if such an allegation is made, I shall face an enquiry and expose the conspiracy to malign me.
- Blacklisting the poor material supplier and builder/contractor also if any previous such violations are there. Or else warning will be given for such low quality materials and constructions.
- Geo-tagging of Assets of Municipality to avoid any future encroachment of government and public property
- Voluntary disclosure of information of Municipal commission decisions and strengthening of Social audit mechanism to prevent any kind of nexus between the Municipal Corporation, builder and politicians.

#### **CONCLUSION:**

Taking such course of action will prevent such incidents in future. Character of a leader need reflect in its institutions. As a Municipal Commissioner, I need to leave my foot prints to improve the good governance of the city and to ensure the welfare of citizens.