

# THE IAS GAZETTE

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# 18TH



# SUMMIT

## Other topics

- Caste Census
- Global Innovation Index 2023
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- India-Canada Bilateral Ties

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A MONTHLY PERIODICAL FOR ASPIRANTS OF UPSC CSE



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# 1. POLITY & GOVERNANCE

## 1.1 ONE NATION ONE ELECTION

### Context

- The Central government has set up a panel headed by former President Ram Nath Kovind to explore the feasibility of the 'One Nation, One Election' (ONOE) plan.

### What is the ONOE plan?

- Simultaneous Election entails elections to all three tiers of the Constitutional institutions i.e. Lok Sabha, Vidhan Sabha, and Local bodies taking place in a synchronised manner to reduce the frequency of polls throughout the country.

### History and Background of ONOE

- After the enforcement of the Constitution on January 26, 1950, the first-ever general elections to Lok Sabha and all State Assemblies were conducted simultaneously in 1951-1952.
- The practice continued into the three subsequent Lok Sabha elections until 1967, after which it was disrupted.
- The cycle was first broken in 1959 after the Centre invoked Article 356 (failure of constitutional machinery) of the Constitution to dismiss the then-Kerala government.
- Subsequently, due to defections and counter-defections between parties, several Legislative Assemblies dissolved post-1960, which eventually led to separate polls for Lok Sabha and State Assemblies.
- Currently, the assembly polls in the States of Arunachal Pradesh, Sikkim, Andhra Pradesh, and Odisha are held together with the Lok Sabha elections. The recent push for reviving ONOE came after the idea was floated once again by Prime Minister Narendra Modi in 2016.

### Arguments in favour of ONOE

- Saves Public Exchequer. Relief from massive expenditure that is currently incurred for the conduct of separate elections.

*A whopping Rs 60,000 crore was spent on the 2019 Lok Sabha elections:*

*The report, named 'Poll Expenditure: The 2019 Elections'*

- Prevents Policy Paralysis due to the imposition of the Model Code of Conduct during election time.
- Allow political parties to focus more on policy and governance.
- Prevents duplication of the expenditure incurred during multiple elections.
- Relief from disruptions due to political rallies, road traffic, and noise pollution.
- Lessens the burden of deploying crucial manpower and security forces that would otherwise seriously affect their normal duties.
- Delivery of Public Essential Services does not get hampered.
- Reduce the unnecessary use of manpower.
- Ensure timely and better implementation of government policies.
- It will increase efficiency in the administrative set up throughout the country.
- Normal administrative duties are not affected by elections.
- Will help ensure continuity in the policies and programs of the central and state governments.
- Will boost voter turnout as it will be more convenient for them to cast votes at once.
- The government can get five stable years to focus on governance instead of winning polls.

### Drawbacks and Challenges of Implementing ONOE

- To implement new election rules, the Representation of People Act as well as other

- parliamentary procedures will need to be amended.
- Would require constitutional amendments to sync up the terms of the state legislative assemblies with that of the Lok Sabha.
  - Every recognized state and national party would have to agree to the change.
  - **Regional parties would not be able to raise their local issues** strongly as national issues take center stage.
  - Regional parties would be unable to compete with national parties in terms of election expenditure and election strategy.
  - A study conducted by the IDFC Institute in 2015 found that there is a 77 percent chance that voters will choose the same winning political party or alliance in the state assembly and the Lok Sabha if elections are held simultaneously.
  - **No provision for hung legislatures** or the premature dissolution of governments.
  - If the Centre will continue to have the power to dismiss the state government (under Article 356), there cannot be the One Nation One Poll rule eligible.
  - Voters may end up voting on national issues even for state polls which would benefit larger national parties and marginalise regional parties.
  - Under this rule, a wave of one person or one issue may give unbridled power to rule.

- Large number of police forces would be required at the same time and there are chances of riots.
- Will lead to **centralization of power and decrease the power of states (Defeating Cooperative Federalism).**
- It can lead to a monopoly of power in a few hands.
- It will be difficult to implement policies by Election Commissioner smoothly.
- Chances of some irregularities or malpractices.

### Election Commission on ONOE

- It said that simultaneous elections are not feasible within the existing framework of the Constitution.
- It said that the Constitution, the Representation of the People's Act 1951 and the Rules of Procedure of Lok Sabha and State Assemblies would require appropriate amendments to conduct simultaneous polls.
- The commission also recommended it receive ratification from at least 50% of the States.
- However, with respect to the advantages of holding simultaneous polls, the commission said that ONOE will lead to the saving of public money, reducing the strain on the administrative setup and security forces, timely implementation of government policies, and administrative focus on development activities rather than electioneering.

### Recommendations of Law Commission regarding ONOE

- A definition of simultaneous elections may be added to Section 2 of the 1951 Act.
- Article 83 and 172 of the constitution along with sections 14 and 15 of the 1951 Act should be amended. This would mean that the new Lok Sabha and assembly, constituted after mid-term elections, **shall be only for the remainder of the term.**
- The **'Anti-defection Law'** laid down under paragraph 2(1) (b) of the Tenth Schedule of the Constitution be removed as an exception to prevent stalemate in the Assembly due to Hung Parliament.
- Sections 14 & 15 of RPA, 1951, be amended to extend the statutory limit of 6 months for the issuance of notification of general elections to provide the flexibility to Election Commission in conducting the simultaneous elections.



- An alternative to premature dissolution of assembly due to a no-confidence motion could be that the members while moving such an option may also put forward an option for forming an alternative government.
- Prime Minister/Chief Minister may be elected to lead the Lok Sabha/Assembly, by full house like electing the speaker of the Lok Sabha, providing stability to the government.
- An amendment of the rule of no-confidence motion (Rule 198 of Rules and Conduct of Business of the Lok Sabha), on the lines of the German Constitution.

### Recommendations of the Parliamentary Panel

- Elections of legislative assemblies whose term ends six months before/after the general elections to Lok Sabha should be clubbed together.
- Elections should be held in two phases. In 1st phase, elections to almost half of the Legislative Assemblies should be held during the midterm of Lok Sabha and the remaining elections should be held at the end of the term of Lok Sabha.
- To hold early elections to state legislative assemblies along with other states/Lok Sabha, a motion for an early General Election or a No-Confidence Motion must be passed by the House.

### Moving Forward

- All the implications of ONOE, be they short-term or long-term, need to be examined in an unbiased manner by ensuring the participation of all concerned.
- In a democracy, the final decision on such national matters, whatever it may be, should emanate as a 'near consensus', if a 'total consensus' is not forthcoming.

## 1.2 FOOD PROCESSING SECTOR IN INDIA

### Context

- India's food processing sector is expected to generate 9 million jobs by 2024 and by 2030- All India Food Processors' Association (AIFPA).

### India's Food Processing Sector

- India's Food Processing Sector is a sunrise sector that has gained prominence in recent years.
- Major processed food products exported from India include processed fruits and juices, pulses, guar gum, groundnuts, milled products, cereals preparations, oil meals, and alcoholic beverages.

### Key statistics

- The food and grocery retail market, valued at US\$ 11.3 trillion in 2021, is also among the largest in the Global Economy.
- India created history in agriculture and processed food exports by exporting products worth US\$ 25.6 billion in FY22.

- This industry is expected to add 9 million jobs by 2024. Foreign direct investments in India's food industry totalled \$4.18 billion between April, 2014 and March, 2020.
- By 2030, India's annual household consumption is believed to quadruple, making it the fifth-largest consumer in the world. The sector's size is estimated to be around US\$322 billion, and it is expected to reach US\$543 billion by 2025, growing at a CAGR of 14.6%.
- The food sector is currently undergoing a transition in India. The Agricultural and Processed Food Products Export Development Authority (APEDA) forecasts that the sector will grow at a compounded annual growth rate (CAGR) of 3% between 2022 and 2030.

### Contribution to Employment

- According to the **Ministry of Food Processing Industries (MoFPI)**, the sector employs around 1.93 million people, accounting for



12.38% of employment in the registered factory sector.

- Additionally, the unregistered food processing sector provides employment opportunities to around 5.1 million workers.

### Challenges faced by the Food Processing Sector

- The food processing industry faces some challenges, such as low-cost competitiveness due to high agri-product costs, limited awareness among farmers about best farming practices, and product quality concerns resulting from the rampant use of fertilizers and pesticides.
- Other issues include limited awareness among farmers about necessary quality certifications, lack of adequate facilities for quality testing, limited brand strength of Indian products in overseas markets, lack of infrastructure for processing, storage, and logistics, and limited compliance with sustainability and ethical requirements.
- These issues hamper the growth of the sector and increase the wastage of agricultural products.

### Steps being taken to promote the Sector

- **Pradhan Mantri Kisan Sampada Yojana:** The Indian government has put in place various schemes to support the Food Processing Industry. For instance, the **Pradhan Mantri Kisan Sampada Yojana (PMKSY)** is aimed at promoting investments throughout the value chain to stimulate growth in the industry.
- Some of the other schemes implemented under PMKSY are the **Creation of a cold chain, infrastructure for Agro Processing clusters, expansion of food processing and processing capacities, operation greens, and food safety and quality assurance infrastructure.**
- **National Mission on Food Processing (NMFP):** To boost the food processing sector in India, the MOFPI has launched the **National Mission on Food Processing (NMFP)** to decentralize the implementation of food processing-related schemes to ensure

substantial participation of State Governments.

- **PM-Formalisation of Micro Food Processing Enterprises Scheme (PMFME):** Launching of a Centrally Sponsored Scheme, namely, **PM-Formalisation of Micro Food Processing Enterprises Scheme (PMFME)** for providing financial, technical, and business support for setting up/upgradation of 2 lakh micro food processing enterprises across the country for five years from 2020-21 to 2024-25 based on One District One Product (ODOP) approach with an outlay of Rs.10,000 crore.
- **Production Linked Incentive Scheme for the Food Processing Industry (PLISFPI):** The **Production Linked Incentive Scheme for the Food Processing Industry (PLISFPI)**, which is part of the Department of Animal Husbandry & Dairying in the Ministry of Agriculture & Farmers' Welfare, is another initiative aimed at promoting the industry's growth. Other schemes include the **Department of Fisheries, the National Bank for Agriculture and Rural Development, and the Mission for Integrated Development of Horticulture (MIDH).**
- **DPIIT-Recognised Startups:** There are ~3319 **DPIIT-recognised startups** in the Food Processing Sector as of 10th April 2023. These recognized startups are spread across 425 districts of the country. They employ roughly 33,000 people. Of the ~3319 startups, approximately 32% were recognized in the year 2022.
- **Mega Food Parks (MFP):** A **Special Food Processing Fund of Rs. 2000 crore** was set up with NABARD to provide affordable credit for investment in setting up Mega Food Parks (MFP) as well as processing units in the MFPs.
- **Additive-based approval process:** The **Food Safety and Standards Authority of India (FSSAI)** has shifted from product-by-product approval to an ingredient and additive-based approval process.
- **FDI:100 percent FDI under Automatic Route** was already permitted for the food processing sector. 100% FDI under the government approval route has been allowed for retail trading, including e-commerce, in

respect of food products manufactured/produced in India.

### India's Potential

- The food processing industry in India is primarily concentrated in the northern and western regions of the country.
- The states of Maharashtra, Uttar Pradesh, Andhra Pradesh, Tamil Nadu, and Gujarat are the leading contributors to the sector.
- However, there is a huge untapped potential for the sector in the eastern and north-eastern regions of the country. In comparison to more developed economies, such as the USA and EU, India's food processing industry is still in its infancy.
- The sector in these countries is more advanced and technologically sound. However, India has the unique advantage of having a vast supply of raw materials, which can be utilized for food processing.
- Additionally, India's vast population and increasing disposable income present a significant opportunity for the growth of the food processing industry.

### Way Ahead

- The food processing industry's vision for the next five to ten years should be to increase the sector's contribution to the GDP from the current 8% to 20%. This can be achieved by focusing on the development of backward and forward linkages, increasing the share of processed foods in total food consumption,

and expanding the sector's reach in the eastern and North-Eastern regions of the country.

- The industry should also aim to reduce food wastage and increase the utilization of by-products and waste generated during food processing.
- To achieve this vision, the industry should adopt modern technologies such as AI, IoT, and blockchain to improve the supply chain's efficiency and reduce wastage.
- The premier technical institutions, such as the IITs, can play a significant role in developing these technologies and providing training to industry professionals.
- The government should provide support in the form of incentives and subsidies to promote the adoption of these technologies.
- The industry should also focus on developing new and innovative products, especially in the organic and health food categories, to cater to the changing consumer preferences.
- The farm sector should also focus on increasing the production of raw materials suitable for food processing and adopt modern farming practices to improve the quality of the produce.
- In conclusion, the Food Processing Industry is an important contributor to India's economy, providing employment opportunities to millions of people. With the right support ecosystem, the food processing industry in India has the potential to become a major player in the global market.

## 1.3 THE JOURNEY OF INDIAN PARLIAMENT

### Context

- The five-day special session of the Parliament of India (beginning Sept 18) discussed "Parliamentary Journey of 75 years starting from Samvidhan Sabha - Achievements, Experiences, Memories and Learnings".

### Details

#### History of the Parliament of India

#### Pre-Independence Period

- **1858-1947:** During the British colonial rule, India had no sovereign parliament of its own. Instead, British India was governed by the British Parliament in London. India was represented in the British Parliament by a Secretary of State for India.

#### Post-Independence Period

- **1947:** India gained independence from British rule on August 15, 1947. The Indian Independence Act of 1947 led to the partition

of India and the creation of two independent nations, India and Pakistan.

- **1947-1949:** The Constituent Assembly of India, composed of elected representatives, drafted the Constitution of India. This process culminated in the adoption of the Indian Constitution on January 26, 1950.
- **1950:** The Parliament of India was inaugurated on January 26, 1950, concurrent with the adoption of the Indian Constitution. This date is celebrated annually as Republic Day in India.

### Structure of the Indian Parliament

- The Parliament of India is a **bicameral legislature, consisting of two houses: the Rajya Sabha (Council of States) and the Lok Sabha (House of the People).**
- The Rajya Sabha is the upper house, representing the states and union territories of India. Its members are not directly elected by the people but are chosen by the elected members of the state legislatures and appointed by the President of India.
- The Lok Sabha is the lower house, with members directly elected by the people through a general election.
- The President of India is the ceremonial head of the Parliament.

### Key Functions and Powers

- The Parliament of India is responsible for making and passing laws, scrutinizing government policies, approving the budget, and representing the interests of the people.
- It **exercises legislative, financial, and oversight powers, ensuring the checks and balances of the democratic system.**

### Important Milestones

- **1950:** The first general elections were held in India, and the first Lok Sabha was constituted.
- **1966:** The fourth Lok Sabha saw the first woman Speaker, Indira Gandhi, who later became the Prime Minister.
- **1986:** The Anti-Defection Law was enacted to prevent members of Parliament from changing parties without losing their seats.
- **1993:** The 73rd and 74th Amendments to the Constitution introduced local self-governance through Panchayats and Municipalities.

## Performance, Operational Dynamics of the Indian Parliament

### Demographic Shifts in Parliament

#### *Decline in Young MPs*

- **In the First Lok Sabha, there were 82 MPs aged 35 and below, but in the 17th Lok Sabha, this number has decreased to 21.**
- Despite a rising youth population, the average age of Lok Sabha members has increased from 46.5 years in the First Lok Sabha to 55 years in the 17th Lok Sabha.

#### *Representation of Women*

- **Women's turnout in elections has increased steadily, with women outvoting men in recent years.**
- The number of women candidates has risen, but women's representation in Lok Sabha remains low at 14.36%.
- The Women's Reservation Bill, aimed at increasing women's representation, has faced challenges in passing.

### Parliamentary Functioning

- *Absence of Deputy Speaker*
- **The 17th Lok Sabha is poised to become the first without a Deputy Speaker, raising questions about its functioning.**
- The election of the Deputy Speaker usually follows the Speaker's election.

#### *Decrease in Sittings and Legislative Output*

- **The Lok Sabha has seen fewer sittings per year since the 1970s, with the lowest in 2020 due to the COVID-19 pandemic.**
- Legislative productivity has declined, with fewer bills being passed.

#### *Rise in Ordinances*

- **The decrease in parliamentary sittings has led to an increase in the number of ordinances issued by the Union government.**
- This trend has been especially noticeable since 2013.

### Electoral Trends

#### *Increase in Voters*

- **The electorate has grown significantly, from 173.2 million in 1951 to 912 million in 2019.**
- The Election Commission has expanded the number of polling stations to accommodate the increased number of electors.

#### *Multiplicity of Political Parties*

- The number of parties participating in Lok Sabha elections has grown 12-fold, from 53 in 1951 to 673 in 2019.
- Similarly, the number of contestants has increased over the years.

### Voting Patterns and Majorities

#### *Voting Patterns*

- India has witnessed both clear majorities and fractured mandates in its Lok Sabha elections.
- In some instances, the party with the highest number of seats received a lower vote share than the runner-up.

#### *Recent Voting Trends*

- Since 2004, parties in power have received a higher vote share than the runner-up.

### Decline in Time Spent on Questions

- *Question Hour*
- The time allocated to questions in Lok Sabha has declined over the years.
- While the First Lok Sabha spent 15% of its time on questions, this figure fell to 11.42% during the 14th Lok Sabha.

### **Conclusion**

- The Indian Parliament has evolved in response to changing demographics, political dynamics, and legislative priorities.
- These trends have implications for governance, representation, and the effectiveness of parliamentary processes.

## 1.4 FRATERNITY IN INDIA

### **Context**

- How fraternity in India is different from the idea enshrined in the Constitution.

context, given the complex and diverse nature of Indian society.

### **Introduction**

- **Definition of Fraternity in Political Context:** Fraternity, as discussed in this context, pertains to the concept of social and political unity, emphasizing the importance of bonds and relationships among individuals within a society.
- **Importance in Liberal Political Philosophy:** Fraternity is recognized as a crucial tenet of liberal political philosophy, often overshadowed by the more prominent principles of liberty and equality.

### **Neglect of Fraternity**

- **Fraternity's Relative Neglect in Politics and Ideas:** Despite its importance, fraternity has often been overlooked in both political discourse and intellectual discussions. This neglect has led to a gap between the theoretical recognition of fraternity and its practical application.

### **Fraternity in India's History**

- **Role in India's Struggle for Independence:** During India's struggle for independence, the concept of fraternity played a significant role. Leaders and thinkers emphasized the need for unity among diverse communities to achieve freedom from colonial rule.
- **Dr. B.R. Ambedkar's Emphasis on Liberty, Equality, and Fraternity:** Dr. Ambedkar, one of the key architects of the Indian Constitution, stressed the inseparability of liberty, equality, and fraternity in the Indian

### **Historical Origins of Fraternity**

- **Fraternity in Ancient Greece:**
  - Plato's "Lysis": In ancient Greece, Plato introduced the concept of fraternity as a strong desire for wisdom and knowledge, emphasizing the idea that love and friendship with others become more meaningful through the sharing of knowledge.
  - Aristotle's Perspective: Aristotle's political philosophy highlighted the significance of the polis (city-state) as the natural habitat of human beings. He argued that individuals are inherently political beings and that justice and friendship among citizens are central features of the polis.



- **Fraternity in Medieval Christian Society:** Fraternity found expression in medieval Christian society through religious bonds and shared moral values.
- **Emergence in Politics during the French Revolution:**
  - "Liberté, égalité, fraternité" – The Triptych: The French Revolution of 1789 popularized the slogan "liberté, égalité, fraternité" (liberty, equality, fraternity), underscoring the revolutionary dimension of fraternity in politics.

### Friendship among Equals

- **Western Concept of Fraternity Rooted in Community and Moral Values:** In Western thought, fraternity evolved around the idea of community and the moral values associated with it. It stressed the importance of shared experiences and a sense of belonging.
- **Challenges in India:**
  - **Shared Past Marred by Caste Divisions:** In India, the shared past is often complicated by deep-seated caste divisions, making the development of fraternity challenging.
  - **Necessity of a Secular Conception of Fraternity:** Given the diverse and hierarchical social structures in India, the concept of fraternity needs to be approached from a secular standpoint, with a focus on political unity rather than shared communal histories.
  - **Political Bonding Over Ideological Differences:** To foster fraternal bonding in India, it becomes imperative to bridge ideological differences through political engagement.

### Fraternity and Equality

- **Political Approach to Fraternity in India:** Fraternity in India is primarily seen as a political goal, rooted in the principles of equality and aimed at overcoming divisions within society.
- **Role of Affirmative Actions, Including Reservations:** Measures such as reservations were introduced to address social inequalities

and promote equality among diverse social groups. These actions play a critical role in achieving fraternity by creating a more level playing field.

### Limits to Fraternity

- **Preconditions for Achieving Political Fraternity:** To achieve political fraternity, certain preconditions must be met:
  - **Avoiding Glossing Over Social Inequalities:** Fraternity should not be used as an excuse to ignore or perpetuate social inequalities.
  - **Guarding Against Belligerent Nationalism:** Fraternity should not morph into belligerent nationalism, which targets religious or ethnic minorities.
  - **The Incompatibility of Fraternity with Fundamentalism:** Fundamentalism, of any kind, is fundamentally opposed to true fraternity as it often leads to exclusion and hostility.

### Caste and Political Fraternity in India

- **Coexistence Challenges:** The coexistence of the caste system and political fraternity in India poses significant challenges. The deeply entrenched caste divisions hinder the realization of true political unity.
- **The Ongoing Political Struggle to Determine the Future:** The future of fraternity in India's politics remains uncertain, and there is an ongoing struggle to determine whether caste or fraternity will dominate the political landscape.

### Conclusion

- The Ongoing Relevance and Challenges of Fraternity: Fraternity remains an important and relevant concept in both political philosophy and India's complex social context. However, it faces substantial challenges in practice, especially in a society marked by deep-seated inequalities and divisions. The future of fraternity in India's politics will depend on how these challenges are addressed and resolved.

## 1.5 WOMEN'S RESERVATION BILL 2023

### Context

- The recent passage of the Women's Reservation Bill (2023), officially known as the **128th Constitutional Amendment Bill or Nari Shakti Vandan Adhiniyam**, marks a significant milestone in India's quest for gender equality in political representation.

### Details

- This legislation seeks to reserve one-third of the seats in the Lok Sabha, State legislative assemblies, and the Delhi assembly for women, including seats reserved for Scheduled Castes (SCs) and Scheduled Tribes (STs).

### Background and need for the Women's Reservation Bill (2023)

#### Background

- 1996:** The First Women's Reservation Bill was introduced in the Parliament.
- 1998 - 2003:** The government made four subsequent attempts to table the bill but faced repeated failures.
- 2009:** Amid protests and debates, the government once again introduced the bill.
- 2010:** A significant breakthrough occurred when the Union Cabinet passed the bill, and the Rajya Sabha successfully passed it.

#### Need for the Women's Reservation Bill (2023)

The need for such legislation becomes evident when examining the current representation of women in Indian politics:

- In the Lok Sabha, there are 82 women Members of Parliament, **constituting 15.2% of the total membership.**
- In the Rajya Sabha, there are 31 women members, **representing 13% of the total membership.**
- While these numbers have increased significantly since the first Lok Sabha, where women represented only 5% of all MPs, they still fall far short of international benchmarks.

- Comparing India's representation of women to other countries reveals the pressing need for increased female political participation:
  - Rwanda:** Leads the world with 61% women representation.
  - Cuba:** Boasts 53% women representation.
  - Nicaragua:** Follows closely with 52% women representation.
  - Bangladesh:** Surpasses India with 21% women representation.
  - Pakistan:** Also outpaces India with 20% women representation.
- These statistics highlight the urgency of the Women's Reservation Bill (2023) in addressing gender disparities in Indian politics and bringing the nation closer to global standards of women's political empowerment.

### Why Women's Reservations are needed?

- Gender Disparities in Political Representation:** Despite incremental progress over the years, women's representation in Indian politics remains alarmingly low. This underrepresentation perpetuates gender inequality, as women have limited influence over policies and decisions that impact their lives.
- The Decline in Women's Political Empowerment:** Recent data from the Global Gender Gap Report 2021 shows a drop in India's political empowerment index and a sharp decrease in the proportion of women ministers. This decline underscores the urgency of addressing gender disparities in politics.
- Success in Local Governance:** The WRB builds on the success of the 72nd and 73rd constitutional amendments, which reserved one-third of seats and chairmanships in rural and urban local governments for women. Women who have served in these roles have made significant contributions to their communities, highlighting the potential impact of increased female representation at higher levels of government.

## Features of the Women's Reservation Bill

- **Reservation Quota:** The WRB proposes to reserve 33% of seats in both the Lok Sabha and state legislative assemblies for women. This quota is a form of affirmative action aimed at rectifying historical gender imbalances in political representation.
- **Constitutional Amendment:** Implementing this reservation quota requires a constitutional amendment, which entails obtaining a special majority in both houses of Parliament. This underscores the significance of the bill's legal and institutional impact.
- **Rotation System for Reserved Seats**
  - *Purpose and Benefits:* The WRB incorporates a rotation system for reserved seats to prevent the concentration of women representatives in specific constituencies. This approach ensures that women from various regions have the opportunity to participate in the political process, promoting geographic and demographic diversity.
  - *Preventing Concentration:* The rotation system prevents the creation of a permanent women's quota in particular areas, which could lead to an imbalance in representation.
  - *Promoting Fairness and Inclusivity:* By avoiding the permanent allocation of seats, the rotation system fosters fairness and inclusivity in women's political representation, enabling women from diverse backgrounds to participate.

## Significance of the Women's Reservation Bill

- **Advancing Gender Equality:** The WRB is a critical step toward achieving gender equality in political representation. It addresses historical disparities and ensures that women have a fair opportunity to participate in decision-making processes.
- **Empowering Women:** The bill empowers women by granting them equal access to the political arena, breaking down traditional barriers that may have discouraged women from entering politics.

- **Enhancing Political Skills:** Increased participation of women in politics helps build their leadership and governance skills. Successful women politicians can serve as role models, inspiring greater female participation across various fields.
- **Diverse Perspectives:** Women in politics bring attention to gender-specific issues, including maternal health, childcare, gender-based violence, and economic opportunities. Their diverse perspectives contribute to more balanced and comprehensive decision-making.
- **Social and Cultural Change:** Female political leaders can challenge traditional gender norms, inspire social and cultural change, and break down stereotypes, ultimately creating a more inclusive and gender-equal society.

## Challenges hindering the Bill's Passage

- **Political Opposition:** Some political parties and leaders express concerns about the WRB's potential impact on existing reservations for marginalized communities, such as Scheduled Castes, Scheduled Tribes, and Other Backward Classes. Balancing these interests can lead to political opposition.
- **Lack of Consensus:** Building a consensus among India's diverse political parties has proven challenging. Different parties have varying stances on the WRB, with some advocating strongly for it and others opposing or remaining hesitant.
- **Social Norms and Gender Biases:** Deep-rooted patriarchal norms and gender biases in Indian society continue to discourage women from participating in politics. Overcoming these norms is a complex and ongoing process.
- **Family and Societal Pressures:** Women often face family and societal pressures that dissuade them from pursuing political careers. Concerns about safety, traditional gender roles, and societal expectations can act as deterrents.
- **Gender-Based Violence and Harassment:** The political arena in India is not immune to gender-based violence and harassment, which

can discourage women from participating and perpetuate a hostile environment.

### Way forward for Women's Political Empowerment

- **Consensus Building:** Efforts to bring different political parties together to find common ground are crucial. Negotiations, compromises, and discussions can help address concerns and interests.
- **Public Awareness:** Raising public awareness and support for the WRB is essential. Public campaigns, seminars, workshops, and social media initiatives can highlight the positive impact of increased female representation in politics.
- **Advocacy:** Women's rights organizations, activists, and civil society groups play a vital role in advocating for the bill. Lobbying efforts, rallies, and using their platforms to

push for the WRB's passage can influence policymakers.

- **Addressing Concerns:** Acknowledging and addressing concerns raised by political parties opposing the bill is important. Research and data can demonstrate that the WRB won't negatively impact existing reservations. Developing a fair rotation system is also crucial.

### Conclusion

- The Women's Reservation Bill represents a critical step toward achieving gender equality in Indian politics. Overcoming political challenges and societal norms is essential for its successful implementation. Women's political empowerment is not just a matter of representation but a catalyst for more inclusive and diverse governance in India.

## 1.6 DIGITAL PERSONAL DATA PROTECTION (DPDP) ACT, 2023

### Context

- The government said that companies/entities may be given around a year's time, and even some more to smaller organisations or startups, to comply with norms of Digital Personal Data Protection (DPDP) Act, 2023.

### Highlights of the act

- **Applicability:**
  - It applies to the processing of digital personal data within India where such data is: (i) collected online, or (ii) collected offline and is digitised.
  - It will also apply to the processing of personal data outside India if it is for offering goods or services in India.
  - Personal data is defined as any data about an individual who is identifiable by or in relation to such data.
    - Processing has been defined as wholly or partially automated operation or set of operations performed on digital personal data. It includes collection, storage, use, and sharing.

- **Consent:**
  - Personal data may be processed only for a lawful purpose after obtaining the consent of the individual. A notice must be given before seeking consent.
  - The notice should contain details about the personal data to be collected and the purpose of processing.
  - Consent may be withdrawn at any point in time. Consent will not be required for 'legitimate uses'.
- **Rights and duties of data principal:**
  - An individual, whose data is being processed (data principal), will have the right to: (i) obtain information about processing, (ii) seek correction and erasure of personal data, (iii) nominate another person to exercise rights in the event of death or incapacity, and (iv) grievance redressal.
  - Data principals will have certain duties. They must not: (i) register a false or frivolous complaint, and (ii) furnish any false particulars or impersonate another person in specified cases. Violation of



duties will be punishable with a penalty of up to Rs 10,000.

- **Obligations of data fiduciaries:**
  - The entity, determining the purpose and means of processing, (data fiduciary), must: (i) make reasonable efforts to ensure the accuracy and completeness of data, (ii) build reasonable security safeguards to prevent a data breach, (iii) inform the Data Protection Board of India and affected persons in the event of a breach, and (iv) erase personal data as soon as the purpose has been met and retention is not necessary for legal purposes (storage limitation).
- **Significant data fiduciaries:**
  - Certain data fiduciaries may be designated as significant data fiduciaries. Certain factors must be taken into regard such as: (i) volume and sensitivity of personal data processed, (ii) risks to the rights of data principals, (iii) security of the state, and (iv) public order.
  - These entities will have certain additional obligations including: (i) appointing a data protection officer, and (ii) undertaking impact assessment and compliance audit.
- **Exemptions:**
  - Rights of the data principal and obligations of data fiduciaries (except data security) will not apply in specified cases.
  - These include: (i) prevention and investigation of offences, and (ii) enforcement of legal rights or claims.
- **Cross-border transfer:**
  - The Bill allows the transfer of personal data outside India, except to countries restricted by the government through notification.
- **Data Protection Board of India:**
  - The central government will establish the Data Protection Board of India.
  - Key functions of the Board include: (i) monitoring compliance and imposing penalties, (ii) directing data fiduciaries to take necessary measures in the event of a

data breach, and (iii) hearing grievances made by affected persons.

- Board members will be appointed for two years and will be eligible for re-appointment.
- **Penalties:**
  - The schedule to the Bill specifies penalties for various offences such as up to: (i) Rs 200 crore for non-fulfilment of obligations for children, and (ii) Rs 250 crore for failure to take security measures to prevent data breaches.

## Significance of the Data Protection Bill

### For Individuals:

- **Empowerment and Data Control:**
  - Significance: The bill empowers individuals, giving them control and choice over their personal data.
  - Criticism: Critics argue that exemptions and limitations may undermine these rights.
- **Rights and Protections:**
  - Significance: Individuals gain rights like access, correction, erasure, and data portability, enhancing data privacy.
  - Criticism: Critics contend that some rights are subject to exceptions, potentially limiting their effectiveness.

### For Businesses:

- **Level Playing Field and Trust Building:**
  - Significance: The bill creates a fair environment for businesses, fostering trust and confidence among customers and stakeholders.
  - Criticism: Critics fear operational complexities due to regulatory requirements.
- **Flexibility and Innovation:**
  - Significance: Businesses gain flexibility in processing data for reasonable purposes, promoting innovation.
  - Criticism: Some argue that compliance mechanisms may be burdensome for smaller businesses.

### For the Government:

- **Data-Driven Governance and Development:**

- Significance: The bill supports data-driven governance, public service delivery, research, and innovation.
- Criticism: Critics express concerns about government exemptions and potential misuse of data.
- **National Security and Sovereignty:**
  - Significance: The bill enhances national security and sovereignty by ensuring data processing within India.
  - Criticism: Concerns arise about government access to personal data for various purposes.

### Criticisms of the Data Protection Bill

#### Government Exemptions and Data Access:

- The bill grants extensive exemptions to the government, raising concerns about privacy and civil liberties.
- Concerns arise regarding government access to personal data for reasons like national security and potential misuse.

#### Cross-Border Data Transfer:

- The bill lacks clear criteria and mechanisms for cross-border data transfer, potentially impacting global entities.

#### Individual Rights and Remedies:

- Critics argue that some individual rights are subject to exceptions, undermining their effectiveness.
- The bill doesn't offer a robust mechanism for individuals to seek compensation for data breaches or misuse.

#### Addressing Emerging Digital Age Challenges:

- The bill may not adequately address challenges posed by emerging technologies like AI and big data analytics.

### Data Protection Models adopted elsewhere

#### EU's General Data Protection Regulation (GDPR)

- The GDPR is a comprehensive data protection regulation that emphasizes several key principles:
  - **User Consent:** It requires explicit and informed consent from individuals for data processing activities, ensuring they have control over their personal information.

- **Transparency:** GDPR mandates transparency in data processing, with organizations obliged to provide clear and understandable privacy policies.
- **Enforcement:** It introduces strict penalties for non-compliance, ensuring businesses take data protection seriously.
- **Individual Empowerment:** GDPR empowers individuals by granting them various rights, including access to their data, the right to correct inaccuracies, and the right to be forgotten.

#### U.S. Data Protection Model:

- The U.S. data protection approach is characterized by a focus on individual liberties and limited government intrusion.
- **Informed Consent:** Organizations can collect data as long as individuals are informed about the data collection practices and provide consent.
- **Lack of Comprehensive Framework:** The U.S. does not have a unified data protection law like the GDPR. Instead, it relies on sector-specific regulations and laws.
- **Fragmentation:** This fragmented approach can lead to inconsistencies and variations in data protection across different industries and states.

#### China's Data Protection Laws

- China has recently enacted data protection laws such as the Personal Information Protection Law (PIPL) and the Data Security Law (DSL).
- **Individual Rights:** These laws grant individuals certain rights over their personal data, aligning with international data protection principles.
- **Government Powers:** Critics have expressed concerns about the extensive powers granted to the Chinese government to regulate data and companies.
- **Alignment with Indian Bill:** There are concerns about similarities between China's approach and certain provisions of the Indian data protection bill.

### Way forward

- Consider amending the bill to balance individual privacy rights with legitimate government needs and business innovation.
- Enhance enforcement mechanisms to ensure businesses and government entities adhere to data protection regulations.
- Promote public awareness and education on data privacy rights and responsible data handling.
- Collaborate with international bodies and learn from global data protection models like GDPR to improve the bill.
- Periodically review and update the bill to adapt to evolving technology and data protection challenges.
- Engage stakeholders in the legislative process to ensure transparency and accountability.

## 1.7 ZONAL COUNCIL

### Context

- The 31st meeting of the Northern Zonal Council, chaired by the Union Home Minister, took place in Amritsar, Punjab, on September 26, 2023. The Northern Zonal Council includes the states of Punjab, Haryana, Rajasthan, Himachal Pradesh, and the Union Territories of Delhi, Jammu and Kashmir, Ladakh, and Chandigarh.

### 5 Zonal Councils

- **Northern Zone:** Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, National Capital Territory of Delhi, and Union Territory of Chandigarh.
- **Central Zone:** Chhattisgarh, Uttarakhand, Uttar Pradesh, and Madhya Pradesh.
- **Eastern Zone:** Bihar, Jharkhand, Odisha, Sikkim, and West Bengal.
- **Western Zone:** Goa, Gujarat, Maharashtra, Union Territories of Daman & Diu, and Dadra & Nagar Haveli.
- **Southern Zone:** Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Union Territory of Puducherry.

#### North Eastern Council (NEC)

- It is a **statutory advisory body, established under the North Eastern Council Act of 1971.**
- The council includes the **eight states of the Northeast:** Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim.
- The NEC primarily aims to facilitate the economic and social development of the north eastern region of India.
- The members of the council are represented by their respective Chief Ministers and Governors.

### Zonal Councils in India

- Zonal Councils were established in India in 1957 under the States Reorganization Act of 1956 and Article 263 of the Indian Constitution.
- They serve as mechanisms to promote inter-state cooperation, address common regional concerns, and support the overall development and welfare of specific geographic zones.
- India has five Zonal Councils, each covering a group of states and union territories.

#### Composition and Structure

- **Chairmanship:** Each Zonal Council is chaired by the Union Home Minister.
- **Vice-Chairmen:** Chief Ministers of the states within the respective zone serve as Vice-Chairmen.
- **Secretaries:** Chief Secretaries of the states in the concerned zone hold the position of Secretaries.


- **Other Members:** In addition to the above, members include central government ministers responsible for zone-related matters, Members of Parliament (MPs) representing the states in the zone, and Members of Legislative Assemblies (MLAs) from the same states.

### Functions and Significance

- Zonal Councils serve several key functions:
  - **Cooperation:** They facilitate cooperation and coordination among states and union territories within their specific geographic zone.
  - **Discussion and Resolutions:** Zonal Councils provide a formal platform for member states to engage in substantive discussions, present viewpoints, and propose resolutions on various issues affecting the region.
  - **Dispute Resolution:** One significant function is the resolution of inter-state disputes through open dialogue and negotiation.
  - **Policy Formulation:** Zonal Councils offer valuable channels for contributing to policy formulation, ensuring that policies consider regional nuances and needs.
  - **Developmental Planning:** They actively participate in the formulation and execution of development plans to ensure equitable distribution of resources.
  - **Border Disputes and Inter-State Transport:** Zonal Councils deliberate and suggest recommendations on border disputes, linguistic minorities, and inter-state transportation.
  - **Other Matters of Common Interest:** They discuss and provide recommendations on various matters of mutual concern to the states within the zone, including cultural exchanges, environmental concerns, and regional needs.
- The significance of Zonal Councils lies in:
  - Promoting cooperative federalism, allowing different levels of government to work together to address issues.
  - Achieving regional integration by considering the specific needs and characteristics of each geographic zone.
  - Resolving inter-state disputes and maintaining peaceful relationships.
  - Coordinating policies to ensure that they are well-informed and regionally relevant.
  - Shaping the developmental landscape to benefit the entire zone.

### Challenges


- **Limited Binding Power:** Recommendations made by Zonal Councils lack legal enforceability, potentially reducing their impact.
- **Political Differences:** Diverse political ideologies among member states can hinder reaching consensus on key issues.
- **Resource Disparities:** Economic and developmental disparities among states within a zone can complicate resource allocation.
- **Administrative Bottlenecks:** Differences in administrative structures and practices can lead to procedural complexities.



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## Way forward

- To enhance the effectiveness of Zonal Councils, measures can include:
- Making recommendations more binding to ensure they are acted upon.
- Strengthening dialogue through regular meetings, seminars, and workshops to foster cooperation.
- Capacity building for member states to actively contribute to discussions.
- Leveraging technology for efficient communication.
- Conducting regular reviews to assess impact and adapt strategies to changing regional dynamics.

## 1.8 PARLIAMENTARY PRIVILEGES

### Context

- The Supreme Court of India has decided to revisit a 1998 Constitution Bench judgment.
- This judgment granted legislators immunity against criminal prosecution on bribery charges related to their speeches or votes in Parliament.
- The decision has been referred to a 7-judge Bench for reconsideration.

### Background

- **The 1998 Constitution Bench judgment, known as the P V Narasimha Rao case, established the immunity principle.**
- It stemmed from the 1993 JMM bribery case involving Shibu Soren and some MPs accused of taking bribes to vote against a no-confidence motion against the government of P V Narasimha Rao.
- The Supreme Court had quashed the case against the JMM MPs, citing immunity under Article 105(2) of the Constitution.

### Court's Perspective

- The Court emphasized that the purpose of Articles 105(2) and 194(2) is to ensure legislators can perform their duties without fear of criminal consequences for their speeches or votes in legislative bodies.
- However, it clarified that these articles do not grant higher privileges or immunity from general criminal laws.

### Parliamentary Privileges

- Parliamentary privileges are **provided for in Article 105 (for Members of Parliament) and Article 194 (for State Assembly members) of the Indian Constitution.**

- These privileges encompass special rights, immunities, and exemptions enjoyed by Members of Parliament (MPs), State Assembly members, parliamentary committees, and their members.
- The privileges are essential for ensuring the independence of parliamentarians in performing their duties.
- These privileges do not extend to the president who is also an integral part of the Parliament.
- **Without these privileges;**
  - The Houses cannot maintain their authority, dignity and honour.
  - The House cannot protect its members from any obstacle in the discharge of their parliamentary responsibilities.

### Categories of Parliamentary Privileges

Parliamentary privileges can be categorized into two main types:

#### Collective Privileges

- Right to publish parliamentary reports, debates, and proceedings, with the authority to prohibit others from publishing the same.
- Freedom of the press to publish accurate reports of parliamentary proceedings without prior permission (except during secret sittings).
- Authority to exclude unauthorized individuals from proceedings and conduct secret sittings for sensitive matters.
- Power to establish rules governing parliamentary procedures and business conduct.
- Ability to impose penalties on members and outsiders for breaching privileges.

- Right to receive immediate information about the arrest, detention, conviction, imprisonment, and release of a member.
- Prohibition of court inquiries into parliamentary proceedings.
- Prevention of arrests or legal processes (civil or criminal) within the House without the presiding officer's permission.

#### Individual Privileges

- Immunity from arrest during a parliamentary session and 40 days before and after a session, but this applies solely to civil cases, not criminal cases or preventive detention cases.
- Freedom of speech in Parliament, with no liability for any court proceedings regarding statements or votes made in Parliament or its committees.
- Exemption from jury service and the ability to refuse to give evidence or appear as a witness in court when Parliament is in session.

#### **Committee of Privileges**

- Each House of Parliament and its Committees collectively and members of each House individually enjoy certain rights, privileges, and immunities crucial for efficient and effective functioning.
- The **committee of privileges consists of 15 members (10 members in the case of Rajya Sabha), nominated by the Speaker (or Chairman in Rajya Sabha).**
- In Lok Sabha, the Speaker nominates the committee's head, while in Rajya Sabha, the Deputy Chairperson heads it.
- The committee's function is to examine any breach of privilege of the House or its

members and make suitable recommendations in its report.

#### **Privilege Motion**

- All MPs enjoy individual and collective rights and immunities to discharge their duties effectively.
- Any violation of these rights and immunities is considered a 'breach of privilege,' punishable under parliamentary laws.
- **Any member can move a privilege motion against another member they believe is guilty of a breach of privilege.**
- Both Houses of Parliament can punish acts of contempt, even if not necessarily a breach of privilege, that undermine their authority and dignity.

#### **Rules Concerning Privilege Motion**

- Rules governing privilege motions are **specified in Rule No. 222 in Chapter 20 of the Lok Sabha Rule Book and Rule 187 in Chapter 16 of the Rajya Sabha Rule Book.**
- These rules allow any member, with the Speaker or Chairperson's consent, to raise questions involving incidents they consider a breach of privilege.

#### **Role of Speaker and Chairperson**

- The **Speaker of Lok Sabha and the Chairperson of Rajya Sabha are responsible for the initial scrutiny of privilege motions in their respective Houses.**
- They can either decide on the privilege motion or refer it to the privileges committee of Parliament for further consideration.

## **1.9 MEDIATION ACT, 2023**

#### **Context**

- The Mediation Act, 2023, passed in the recent monsoon session of the Indian Parliament, marks a significant development in the realm of Alternative Dispute Resolution (ADR) in India.

#### **Features**

##### Encouraging Pre-litigation Mediation:

- The Act obligates parties involved in disputes to engage in pre-litigation mediation before approaching an Indian court, regardless of whether there was a prior mediation agreement.

- This mandatory pre-litigation mediation is expected to reduce the filing of frivolous claims before Indian courts and promote the amicable resolution of disputes.

#### Establishment of a Panel of Mediators:

- The Act mandates that Indian courts and relevant institutions maintain a panel of mediators to facilitate the mediation process.
- This provision aims to ensure that qualified and impartial mediators are readily available to assist disputing parties.

#### Benefits of Pre-litigation Mediation:

- Pre-litigation mediation is expected to maintain the confidentiality of the mediation process, mitigating the risk of deteriorating relationships between parties involved in publicly fought disputes.
- While it encourages parties to resolve disputes amicably, the Act also includes safeguards to prevent the misuse of mandatory mediation obligations.

#### Timelines and Neutrality:

- The Act imposes stringent timelines for mediation proceedings, requiring parties to complete the mediation within 180 days from their first appearance.
- It mandates that mediators be neutral and possess expertise in mediation.

#### Role of Indian Courts:

- The Act does not eliminate the option of approaching Indian courts entirely. Parties may seek urgent interim reliefs from a court before or during mediation in exceptional circumstances.
- This provision ensures that the obligation of pre-litigation mediation is not misused and that parties have access to courts when necessary.

#### Parallels with Commercial Arbitration:

- The Act effectively positions mediation similarly to commercial arbitration in India.
- Both mediation and arbitration are governed by stringent timelines, maintain confidentiality, and have enforceable settlement agreements or arbitral awards.
- The Act sends a clear message to Indian industry that courts should no longer be the default venue for dispute resolution.

#### Emphasis on Institutional Mediation:

- The Act places emphasis on institutional mediation in India, envisioning the role of "mediation service providers."
- These providers are expected to offer not only the services of a mediator but also the necessary facilities, secretarial assistance, and infrastructure for efficient mediation.
- Similar to the emphasis on institutional arbitration in recent amendments to the Arbitration and Conciliation Act, this move aims to enhance the efficiency and quality of mediation in India.

#### Potential for India as a Global Dispute Resolution Hub:

- By promoting pre-litigation mediation and institutional mediation services, the Act aims to reduce the burden on Indian courts and foster camaraderie between mediation and arbitration.
- This approach positions India as a potential global hub for all aspects of commercial dispute resolution, including mediation and arbitration.

#### **What is Mediation?**

- Mediation is a **voluntary, binding process in which an impartial and neutral mediator facilitates disputing parties in reaching a settlement.**
- A mediator does not impose a solution but creates a conducive environment in which disputing parties can resolve all their disputes.
- Other than mediation, there are some other dispute resolution methods such as Arbitration, Negotiation, and Conciliation.

#### **Why does India Need to Promote Mediation?**

- **To Tackle Case Pendency:** Mediation is seen as an alternative for reducing the backlog of cases in Indian courts, which are overwhelmed with pending cases.
- **Absence of Standalone Laws on Mediation:** Despite various statutes containing mediation provisions, there is no dedicated standalone mediation legislation in India, unlike some other countries.

- **Mediation as a Tool for True Justice and Social Change:** Mediation is considered a cost-effective alternative that can bring true justice and social change by aligning social norms with constitutional values.
- **Aspirations to Become an International Mediation Hub:** India aims to become a global hub for mediation, especially in light of its signing of the Singapore Convention on Mediation in 2019.

### Challenges

- **Awareness and Adoption:** One of the primary challenges in implementing the Mediation Act, 2023, is raising awareness and encouraging the adoption of pre-litigation mediation. Many parties may still be inclined to pursue traditional litigation due to a lack of familiarity with mediation as an effective dispute resolution method.
- **Quality of Mediation Services:** Ensuring that the panel of mediators maintained by Indian courts and institutions is of high quality and impartial is crucial. Mediators must possess the necessary skills and training to facilitate effective mediations.
- **Misuse of Mandatory Mediation:** There is a risk that parties may exploit mandatory pre-litigation mediation as a delay tactic or as a way to avoid genuine claims. Balancing the obligation of mediation with safeguards against misuse is essential.
- **Enforcement of Mediated Settlements:** While the Act acknowledges the enforceability of mediated settlement agreements, there may be challenges in ensuring that parties comply with these agreements after the mediation process is complete.
- **Mediation Service Providers:** Establishing and regulating mediation service providers may require significant infrastructure and oversight. Ensuring the availability of these providers, especially in rural and remote areas, could be challenging.

### Way Forward

- **Awareness Campaigns:** To address the awareness challenge, the government and

legal bodies should launch extensive awareness campaigns highlighting the benefits of mediation. These campaigns can target both businesses and individuals to promote mediation as a preferred dispute resolution method.

- **Training and Accreditation:** Developing comprehensive training programs and accreditation processes for mediators is essential. Mediators should be certified, ensuring their competence, neutrality, and adherence to ethical standards.
- **Mediation Support Infrastructure:** Establishing mediation centers and providing necessary infrastructure in various regions of the country will enhance accessibility to mediation services.
- **Mediation Promotion in Contracts:** Encourage the inclusion of mediation clauses in commercial contracts, making it a standard practice for parties to consider mediation before resorting to litigation.
- **Continuous Monitoring and Evaluation:** Regular monitoring and evaluation of the mediation process and outcomes can help identify areas for improvement and ensure that mediation is an effective and fair means of dispute resolution.
- **Legal Education:** Incorporate mediation education into legal curricula to produce a new generation of lawyers and legal professionals well-versed in ADR methods, including mediation.
- **International Collaboration:** Collaborate with international organizations and jurisdictions with successful mediation models to learn best practices and adapt them to the Indian context.
- **Public-Private Partnerships:** Encourage public-private partnerships to establish mediation service providers and promote institutional mediation.
- **Amendments and Refinements:** Periodic reviews of the Mediation Act to address emerging challenges and incorporate improvements based on practical experiences will be necessary.

## Conclusion

- Mediation Act, 2023, marks a significant shift towards encouraging pre-litigation mediation in India, similar to the role of commercial arbitration. It emphasizes the importance of qualified mediators and institutional

mediation services, ultimately aiming to reduce the reliance on courts for dispute resolution. This legislation reflects a growing recognition of the benefits of ADR mechanisms in addressing legal disputes in India

## 1.10 CAUVERY WATER SHARING DISPUTE

### Context

- Supreme Court has declined to intervene in favor of either Karnataka or Tamil Nadu, relying instead on the expertise of the Cauvery Water Regulation Committee (CWRC) and the Cauvery Water Management Authority (CWMA) to manage water sharing between the two neighboring states.

### Background

- The Cauvery water dispute is a long-standing and contentious issue involving the allocation of water from the Cauvery River among the states of Tamil Nadu, Karnataka, Kerala, and the union territory of Puducherry.

### Cauvery River

- The Cauvery River, also known as Kaveri, is the **largest river in the southern state of Karnataka, originating in the Brahmagiri hills.**
- It holds great religious significance and is often referred to as the "Dakshina Ganga" or the Ganges of the South.
- Several tributaries feed into the Cauvery, including Harangi, Hemavathi, Kabini, Shimsha, Arkavati, and others.

### Cauvery Water Dispute

- The dispute revolves around the distribution of Cauvery River water for various purposes, including agriculture, drinking water, and industrial use, among the four entities: Tamil Nadu, Karnataka, Kerala, and Puducherry.
- This dispute has a historical origin dating back to 1892 when it arose between the Madras Presidency and the Princely State of Mysore during British rule.
- An agreement between Mysore and Madras in 1924 was enforced for 50 years but was no longer applicable after 1974.

- Karnataka began diverting water into reservoirs without Tamil Nadu's consent in 1974, sparking conflicts.

### Cauvery Water Disputes Tribunal (CWDT)

- To address this protracted dispute, the **Cauvery Water Disputes Tribunal (CWDT) was established in 1990 under the Inter-State Water Disputes Act.**
- After 17 years of deliberation, the CWDT issued its final award in February 2007, which allocated specific amounts of water to each state.
- **Tamil Nadu was allocated 419 TMC (Thousand Million Cubic Feet), Karnataka 270 TMC, Kerala 30 TMC, and Puducherry 7 TMC.**
- The final award set aside 10 TMC for environmental purposes and 4 TMC for seawater exits but did not specify a methodology for handling water deficits due to insufficient rainfall.

### Supreme Court's Intervention

- The Supreme Court's involvement came when the Tamil Nadu government sought relief under Article 136, designating the Supreme Court as the highest appellate authority.
- **In its 2018 ruling, the Supreme Court upheld the CWDT's water-sharing formula, designating Cauvery as a national asset.**
- **Karnataka was mandated to release 284.75 TMC, Tamil Nadu 404.25 TMC, Kerala 30 TMC, and Puducherry 7 TMC.**
- The Supreme Court also directed the central government to establish the Cauvery Management Scheme, leading to the formation of the Cauvery Water Management Authority (CWMA) and the Cauvery Water Regulation Committee (CWRC) to oversee water distribution.



### Water Sharing Procedure

- Karnataka, as the upper riparian state, agreed to transfer water to Tamil Nadu per a set timetable.
- Karnataka would release a specific volume of water, particularly during the southwest monsoon season, to Tamil Nadu at the Biligundlu point.
- Shortages in rainfall during this season have historically led to disputes.

### **About Inter-State Water Disputes**

- **Article 262 of the Indian Constitution provides for the adjudication of interstate water disputes. It makes two provisions:**
  - Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution and control of waters of any inter-state river and river valley.
  - Parliament may also provide that neither the Supreme Court nor any other court is to exercise jurisdiction in respect of any such dispute or complaint.
- **The Parliament has enacted two laws; the River Boards Act (1956) and the Inter-State Water Disputes Act (1956).**
- The River Boards Act provides for the establishment of river boards for the regulation and development of inter-state river and river valleys.
  - A river board is established by the Central government on the request of the state governments concerned to advise them.
- The Inter-State Water Disputes Act empowers the Central government to set up a

tribunal for the adjudication of a dispute between two or more states in relation to the waters of an inter-state river or river valley.

- The decision of the tribunal would be final and binding on the parties to the dispute.
- Neither the Supreme Court nor any other court is to have jurisdiction in respect of any water dispute which may be referred to such a tribunal under this Act.

### **Interstate River Water Governance in India**

- Interstate River Water Disputes are a continuing challenge to federal water governance in India.
- In India, legislative powers concerning water were distributed between the Center and the states to ensure optimum utilization while balancing the interests of the states.
- **Schedule 7 of the Constitution distinguishes between the use of water within a state and the purpose of regulating interstate waters. It gives the Union Parliament the power to formulate laws and mechanisms for regulating interstate rivers (Union list), while the states retain autonomy regarding water utilization for purposes such as water supply, irrigation and canals, drainage and embankments, water storage and water power (State List).**
- The States Reorganization Act 1956 resulted in 14 states and 6 union territories. Thereafter, the boundaries of Indian states have continued to evolve. The changing borders complicate the existing jurisdictional and resource-sharing agreements.

## **1.11 OVERSEAS CITIZEN OF INDIA**

### **Context**

- India's decision to cancel the registration of more than a dozen OCI cardholders accused of pro-Khalistan activities and anti-India propaganda is part of an ongoing dispute between India and Canada.
- As a response, India has suspended visa services in its Canadian missions and directed a reduction in Canadian diplomatic staff in

India. This diplomatic tension has implications for the OCI cardholders, particularly those with connections to Canada.

### **Overview of OCI Card**

#### Purpose and Privileges of the OCI Card

- The Overseas Citizens of India (OCI) card is **granted to overseas Indians, providing them**

various privileges, including long-term visa-free travel and stays in India.

- It is important to note that OCI is not a dual citizenship scheme and does not confer any political rights.

#### Eligibility Criteria for OCI Card Registration

- Individuals eligible for OCI card registration include those **who were citizens of India on or after January 26, 1950, or those eligible to become Indian citizens on that date.**
- Descendants of Indian citizens, minor children of Indian citizens, and spouses of foreign-origin citizens of India or OCI cardholders are also eligible.
- However, **individuals whose parents, grandparents, or great-grandparents were citizens of specified countries like Pakistan or Bangladesh are not eligible for OCI registration.**

#### Benefits of OCI Cardholders

OCI cardholders are entitled to several benefits, including:

- Multiple entries, multi-purpose, lifelong visa to visit India.
- Parity with Non-Resident Indians (NRIs) in economic, financial, and educational fields (except for matters related to agricultural land or properties).
- The right to work in specific sectors like information technology, education, and research without the need for a work permit.
- Treatment on par with Indian nationals for air travel costs within India and entry fees for various attractions.

#### Recent Changes to OCI Scheme

Recent changes to the OCI scheme include:

- **A requirement for OCI cardholders to obtain a prior permit before engaging in certain activities, such as research, journalism, and internships in India.**
- **Exemption from registration with Foreign Regional Registration Officer (FRRO) or Foreign Registration Officer (FRO) for any length of stay in India, except for the**

requirement to notify authorities of residential address or occupation changes.

#### Historical Background of OCI Scheme

The OCI scheme has evolved over the years:

- It began as the PIO (Persons of Indian Origin) card scheme in 2002.
- The OCI card scheme was introduced in 2005, running in parallel with PIO, leading to confusion among applicants.
- **In 2015, the Citizenship (Amendment) Act merged the PIO and OCI schemes into one, creating the "Overseas Citizen of India Cardholder."**

#### Registration of Overseas Citizen of India Cardholder

Eligibility criteria for registration include:

- Persons who were citizens of India at the time of the Constitution's commencement or became eligible afterward.
- Descendants, minor children, or spouses of Indian citizens or OCI cardholders.
- Exclusion for those with ancestral connections to specified countries like Pakistan or Bangladesh.

#### Rights of Overseas Citizens of India Cardholder

- OCI cardholders enjoy certain rights specified by the Central Government, which can include economic, financial, and educational rights.
- However, they are excluded from certain political and public service rights, such as the right to stand for elections or hold high-ranking government positions.

#### Renunciation of OCI Card

- OCI cardholders can renounce their status voluntarily, which involves formal procedures.
- Renunciation leads to the loss of OCI status and associated privileges.

#### Cancellation of OCI Card Registration

- The Union Government can cancel OCI card registration under specific circumstances, including fraud, disaffection towards the Indian Constitution, unlawful activities during wartime, imprisonment, or national interest concerns.

## 1.12 SHORT ARTICLE

### Permanent Central Empowered Committee

#### Context

- The Government notified the formation of a **“permanent” Central Empowered Committee (CEC)** in response to the Supreme Court order.

#### Background

- The Central Empowered Committee, initially **established by the apex court in 2002**, served as a **watchdog for issues pertaining to environmental conservation and compliance**.
- Over the years, the committee has played a pivotal role in shaping India's environmental policy and governance landscape.

#### Highlights of the changes made in the functioning of the Central Empowered Committee (CEC)

<b>Reporting Structure</b>	<ul style="list-style-type: none"> <li>CEC was originally set up to report directly to the Supreme Court.</li> <li>It will now report to the Ministry of Environment, Forest and Climate Change.</li> </ul>
<b>Nomination of Members</b>	<ul style="list-style-type: none"> <li>The Ministry of Environment will now nominate members to the CEC.</li> </ul>
<b>Funding</b>	<ul style="list-style-type: none"> <li>The Ministry of Environment will fund the CEC.</li> </ul>
<b>NGO Representation</b>	<ul style="list-style-type: none"> <li>The provision of having two NGOs as members of the CEC has been removed.</li> <li>Individuals considered "experts" can now be included as members.</li> </ul>
<b>Final Decision-making</b>	<ul style="list-style-type: none"> <li>The Ministry of Environment's decisions regarding the recommendations of the CEC will be final.</li> <li>If the Ministry disagrees with a CEC recommendation, it must provide written reasons for its decision.</li> </ul>

#### Implications

- While its restructuring aims to make it more efficient, **questions remain about its independence under the government's complete control**.
- The shift in reporting structure means that the **Ministry will have more control over the CEC's functioning**.
- Change in Nomination Provision **gives the Ministry greater authority in choosing CEC members**.
- Alteration in Funding **could potentially impact the independence of the CEC in carrying out its functions**.
- Removal of NGO representation **may impact the diversity of perspectives within the committee**.
- The **changes could reduce the committee's independence** and its ability to evaluate the Ministry's decisions effectively.
- The Environment Ministry's increased control over the CEC could impact environmental conservation efforts and potentially weaken the role of the Supreme Court in environmental matters.
- In a nutshell, the changes in the functioning of the CEC have sparked **a debate about the balance between environmental conservation and administrative control**.

#### Way Forward

- It's crucial **to strike the right balance between the CEC's independence and its accountability** to the legal and regulatory framework.
- Transparency in the CEC's operations by providing **clear explanations for its recommendations and actions**, making its reports accessible to the public, and engaging with stakeholders to build trust.
- CEC must remain dedicated to its mandate of safeguarding the environment and advocating for policies and actions that promote conservation.

- Policymakers must actively engage in legal reforms to address challenges that may hinder the CEC's effectiveness.

## Turnout Implementation Plan (TIP)

### Context

- An ambitious new strategy has been launched by the Election Commission of India (ECI), for the next general elections called the **Turnout Implementation Plan (TIP)**.

### TIP

- The EC introduced the “Turnout Implementation Plan” to **increase voter participation in the 2024 Lok Sabha elections**.
- The plan targets states with voter turnout below or slightly above the 2019 national average and constituencies with figures below their respective state averages. It **aims to address voter apathy and encourage higher turnout**.
- The initiative primarily focuses on 10 large states with turnout figures around the 2019 national average: Bihar, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Telangana, and Uttar Pradesh. Additionally, approximately 250 constituencies with below-average turnout have been identified.
- The “Turnout Implementation Tip” involves a **comprehensive profiling of booths with low turnout**. This strategy acknowledges that a one-size-fits-all approach may not be effective and instead **tailored solutions to the unique characteristics of each booth**.
- The EC has urged Chief Electoral Officers to focus on apathetic groups such as the youth and urban electors. The CEOs are expected to conduct a major gap analysis, understand media consumption habits, and identify opportunities for awareness activities, including during popular fairs, festivals, and mass gatherings.
- District Election Officers (DEOs) are tasked with identifying reasons for low voter turnout and addressing local causes. They play a crucial role in implementing the plan by understanding specific issues that lead to low

participation and devising strategies to mitigate them.

## West Bengal Education Policy

### Context

- The West Bengal Government made the State Education Policy, 2023, public.

### Highlights of the Policy

#### 5+4+2+2 Pattern for School Education

- It has continued with the prevailing **5+4+2+2 pattern for school education**.
- The present structure of school education in West Bengal follows a 5+4+2+2 pattern.
- Beginning with one year of pre-primary and four years of primary till class 4, the students move through four years of upper primary, to two years of secondary and two years of higher secondary. It is proposed that the same pattern should continue to be followed in the state.
- The only change suggested in the structure is the inclusion of the **first two years of early years of education at an Anganwadi Center**.
- This would be followed by one year of pre-primary at a government or private pre-primary school. The existing structure of primary, upper primary, secondary and higher secondary would remain as it is.

#### A Three-Language Formula

- It has recommended the **introduction of a three-language formula** in the upper primary level (class V to VIII) with the first language, the “mother tongue”, being the medium of instruction.
- The first language (mother tongue) would be the medium of instruction of the school eg Nepali in Nepali-medium school, Santhali in Santhali-medium school, Rajbanshi in Rajbanshi-medium school, Bengali in Bangla-medium school, English in English-medium school, Urdu in Urdu-medium school, Hindi in Hindi-medium school, Kurmali in Kurmali-medium school etc.

- The second language may be English in a non-English medium or any language other than first language, depending upon the choice of the student.
- The third language may be any other language opted for by the student, other than first and second languages.
- The three-language formula shall be applicable for the upper primary level only as the language learning ability in the primary stage should not be burdened.
- In the primary level, the education policy also recommended that 'Bangla' as a subject may be introduced from Class I to Class XII for students of other mediums of instruction, but not as the first language.

#### Unique Identity Card

- It has recommended a unique identity card for all students.

#### Career Counseling

- At the secondary education level, the policy recommended "appropriate and adequate career counseling" to equip students with the ability to choose their future careers based on their abilities and interests.
- It also asked schools to consider introducing a "graduation ceremony" to felicitate students during promotions to the next class.

#### Semester System

- In the Higher Secondary Education level (Class XI and XII), it has recommended "introducing a semester system to ease the transition from school to university in a phased manner".
- A combination of multiple-choice questions (MCQs) and descriptive questions may be introduced in semester examinations.

*The education policy for the state-sponsored and aided schools will come into effect from the next academic year.*

## **Sedition Law**

### Context

- The Supreme Court is hearing a series of petitions challenging the legality of the sedition law.

### What is the Sedition Law?

- The sedition law was first drafted by Thomas Macaulay in 1837 and was added to the Indian Penal Code (IPC) in 1870 by James Stephen as Section 124A.
- According to Section 124A, the sedition law means *"Whoever, by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards, the Government established by law shall be punished with imprisonment for life, to which fine may be added."*
- **The law also provides an explanation to clarify its meaning:**
  - i) 'disaffection' means all feelings of enmity and disloyalty, ii) displaying disapproval of the Government's policies/actions without inciting hatred, contempt, or disaffection is not considered an offence under this law.
- The sedition law was introduced during the Freedom Struggle by the British to prevent dissent among the citizens. The law was held against many freedom fighters that we know and celebrate today, including Mahatma Gandhi, Bal Gangadhar Tilak, and Annie Besant.
- A non-bailable offence, violation of the sedition law can lead to three years of jail time, sometimes including a fine. If the offender holds a government job, they will be barred from this job, and have to live without a passport.

### Why has the law attracted criticism?

- The sedition law's existence even in the present day has come under heavy criticism. A common basis of criticism is that the law is a 'colonial legacy' - it was used by the British to stifle rebellion among Indians. However, the Law Commission ruled that this is not valid grounds for the repealing of the law.
- Opposition to the sedition law began as early as the 1950s, when the Supreme Court said that "criticism of the government exciting disaffection or bad feelings towards it, is not to be regarded as a justifying ground for restricting the freedom of expression and of the press,



unless it is such as to undermine the security of or tend to overthrow the state.”

- The high courts of Punjab and Haryana have also said that **the law was merely a tool for the ‘colonial masters’ to control the masses and prevent them from speaking up, declaring that the provisions were ‘unconstitutional’.**

#### What did the Law Commission say?

- Despite these criticisms, the Law Commission held that **Section 124A is essential for the safety of the country**, saying “Section 124A of IPC has its utility in combating anti-national and secessionist elements as it seeks to protect the elected government from attempts to overthrow it through violent and illegal means.”
- The Commission said **repealing the provision on the mere basis that certain countries have done so is essentially turning a blind eye to the glaring ground realities existing in India and that it can be retained with certain safeguards to prevent its misuse.**

#### Concerns

- Under the title **‘Offences against the State’** the report shows a total of 179 arrests for sedition. However, no charge sheets were filed by the police in over 70% of the cases, and only two convictions during this time period. This data **belies the claim for retaining Section 124A of IPC.”**
- The **sedition law can easily be misused, and people can be arrested under the pretext of dissent.** For example, according to reports, in 2021, three Kashmiri Muslim girls were jailed for six months for celebrating the fact that Pakistan won against India in a cricket match.
- The **same law has been repealed in other countries like Britain and Nigeria,** under the grounds that it is an unconstitutional law that infringes upon the citizens’ freedom of speech.

#### Conclusion

- The jurisprudential essence of sedition has been one of the most controversial topics as it unreasonably restricts constitutionally guaranteed freedom of speech and expression.

- It is **high time that sedition law needed reconsideration,** because such a law is a bane for democracy, as it does not fit well in post-colonial, independent India. The classification of the offence of sedition as cognizable and non-bailable also needs to be considered.



## **Vidya Samiksha Kendras**

### Context

- Under the **National Digital Education Architecture (NDEAR),** the Ministry of Education is pushing States to open **Vidya Samiksha Kendras.**

### Vidya Samiksha Kendra

- Vidya Samiksha Kendra is **a control center that monitors schools, students and teachers in real-time and collects about 500 data sets every year to improve governance and provide supportive supervision to enhance learning outcomes for students.**
- States/UTs have been advised to establish a Central system (Vidya Samiksha Kendra) at state level for tracking student enrolment, progress in their learning levels, Out of School Children mainstreamed, textbook delivery, support required by teachers and schools, etc.
- Vidya Samiksha Kendra (VSK) is **aimed at leveraging data and technology to bring a big leap in learning outcomes.** This will cover data of more than 15 Lakh schools, 96 Lakh teachers, and 26 Crore students and analyze them meaningfully using big data analysis, artificial intelligence, and machine learning in order to enhance the overall monitoring of the education system and thereby improving learning outcomes.

### Objectives

- To monitor the real-time status of various projects/ activities under the ambit of Samagra Shiksha.
- To keep track of enrolled students including learning outcomes, Dropouts, support required by teachers and schools, etc.
- To monitor and track field level academic and non-academic activities at state level and also

- empower administrators and teachers in the field to take data driven decisions.
- To identify and analyse improvement areas for decision making and implementation that needs urgent attention.
  - To improve the academic performance of students and to enhance the accountability of teachers in schools and effective utilisation of the available resources.
  - To setup centralized helpdesk for grievance redressal mechanism for stakeholders of School ecosystem.
  - To develop Centralized dashboard providing the real-time performance indicators of Schools.
  - Increase accountability among all the field level staffs / administrators & monitor the real-time status towards various projects components / activities under the ambit of School Education.

#### Benefits and Outcomes

- Monitoring of Access, Enrolment, Dropout, Retention, Completion and Achievement
- Child wise tracking of achievements and assessments
- Real time Attendance monitoring of students and teachers
- Tracking of distribution of Incentives like scholarships, uniform, free textbooks etc.
- State level Centralized Monitoring Mechanism in the form of CCC for monitoring, tracking, taking feedback and providing support to all the major field level staff / activities of the school education system
- Real-time Data Integration & analysis of various existing Samagra Shiksha applications for Centralized Monitoring Dashboard along with integration of Data-analysis based Call Management Utility & Reporting.
- Real time data which improves School Management and Governance by timely interventions, streamlining processes, creating transparency and driving accountability through channelized escalations to field level academic & Non-academic staff and timely actions.

- Quick delivery of alerts, notification, and news with minimal failure rate among the field level staff/Head Masters/Teachers/Parents
- Motivate, encourage and facilitate teachers by sending actionable and continuous tips on best practices in pedagogy and teaching in classes.

## Adopt A Heritage 2.0 Programme

### Context

- The Archaeological Survey of India's (ASI) "Adopt a Heritage 2.0 program" has been launched.

### What is Adopt a Heritage 2.0 programme?

- ASI's Adopt a Heritage 2.0 programme aims to encourage collaborations with corporate stakeholders to safeguard India's heritage monuments for future generations.
- The programme is a **revamped version of the earlier scheme launched in 2017**, and clearly defines the amenities sought for different monuments as per the **ANCIENT MONUMENTS AND ARCHAEOLOGICAL SITES AND REMAINS ACT, 1958**.
- Under this initiative, ASI invites corporate entities to **improve the amenities at these monuments using their Corporate Social Responsibility (CSR) funds**.

### Closing Remarks

- The ASI currently oversees 3,697 monuments, which not only reflect India's rich cultural heritage but also contribute significantly to economic growth, according to the Ministry of Culture.
- All entities need to come forward and help in better upkeep and rejuvenation of India's rich cultural heritage, **in line with the vision of 'Virasat Bhi, Vikas Bhi'**.

## Supreme Court Judgment on Inheritance

### Context

- The Supreme Court has held that children born in a void or voidable marriage have the right to inherit their parent's property.

### Background

- Provisions of the Hindu Marriage Act, 1955 -- that confer legitimacy on children born out of void and voidable marriages disentitle them to inherit the ancestral property of their parents.
- In 2010 in the case of Bharatha Matha and anr. v. R. Vijaya Renganathan &Ors., held that such children (born out of void or voidable marriage) were not entitled to claim inheritance of ancestral coparcenary property, only entitled to claim a share over the self-acquired property of their parents.

#### Recent Ruling

- The court has ruled over its own judgement by saying that the **meaning of 'legitimacy' changes with changing social norms therefore the law cannot be remained static.**
- SC held that such children would be treated as **Class-1 heir and would be entitled to share in their parents' ancestral property under the Hindu Succession Act, 1956.**
- The Supreme Court's ruling clarifies that, as per Section 6 of the Hindu Succession Act, the interest of coparceners in a Hindu Mitakshara property is defined as the share they would have received if a partition of the property had taken place immediately before their demise. The Court's judgment now firmly establishes that children born out of marriages deemed invalid are entitled to inherit the portion of the property that would have been allotted to their parents upon a notional partition at the time of their parents' passing.

*Note: The ruling is applicable only to Hindu joint family properties governed by Hindu Mitakshara Law.*

#### Significance

- The **concept of legitimacy stems from social consensus**, in the shaping of which various social groups play a vital role, in a changing society law cannot afford to remain static.
- This **groundbreaking judgment provides much-needed clarity on a significant legal issue**, reconciling divergent interpretations of the law and ensuring that children born out of void or voidable marriages are entitled to inherit their parent's property within the

framework of Hindu joint family properties governed by Hindu Mitakshara law.

## Urban Infrastructure Development Fund (UIDF)

#### Context

- The first tranche of loans under the Urban Infrastructure Development Fund (UIDF) will likely be disbursed soon.

#### Details

- While presenting the Union Budget for 2023-24, the Union Finance Minister Nirmala Sitharaman announced that **the Urban Infrastructure Development Fund (UIDF) will be established through the use of priority sector lending shortfall.**
- Rs. 10,000 crore per annum will be made available for this purpose. The Fund will be managed by the National Housing Bank, and will be used by public agencies **to create urban infrastructure in Tier 2 and Tier 3 cities on the basis of given guidelines.**
- As per the Budget announcement, States will be encouraged to leverage resources from the grants of the 15th Finance Commission, as well as existing schemes, to adopt appropriate user charges while accessing the UIDF.
- The Fund would be operationalized broadly **along the lines of the existing Rural Infrastructure Development Fund.**

## Project Naman

#### Context

- The Army launched 'Project Naman'.

#### Details

- 'Project Naman' will entail **establishing facilitation and grievance redressal centres for veterans and the kin of personnel who have lost their lives.**The first such centre will be established in Delhi Cantonment soon.
- 'Naman' will house a Common Service Centre which will facilitate the veterans and their relatives.
- It will offer all government-to-customer services and also facilitate the updating of pensioners' accounts on the SPARSH portal of veterans, next of kin and dependents.

## Gramodyog Vikas Yojna

### Context

- Tool-kits and machineries to artisans under 'Gramodyog Vikas Yojna' were distributed in Bhubaneswar, Odisha.

### Details

- **About:** It is a central sector scheme launched by the **Union Ministry of Micro, Small and Medium Enterprises (MSME)**.
- **Aim:** To promote and develop the village industries through common facilities, technological modernization, training etc.
- **Objective:** To provide common facilities, technological modernization, training, social security and marketing support to the artisans and entrepreneurs involved in various village industries such as agarbatti, khadi, pottery, honey, etc.
- **Implementation:** The scheme is implemented by the Khadi and Village Industries Commission (KVIC) through its field offices and institutions.

## PM Daksh Portal

### Context

- The government launched the PM DAKSH-DEPwD portal.

### About

- PM DAKSH-DEPwD portal will act as a "one-stop digital destination" where persons with disabilities from across the country will be able to access jobs offered by companies.
- The portal is connected with various companies, including Amazon and Youth4Jobs, geo-tagging job vacancies for PwDs across India, bridging the gap between employers and job seekers.
- The department of empowerment of persons with disabilities (DEPwD) under the ministry of social justice and empowerment is aiming to add 25,000 jobs on the portal.

## National Judicial Data Grid

### Context

- In a landmark move, the Chief Justice of India announced the integration of the Supreme

Court into the National Judicial Data Grid (NJDG).

### About

- The NJDG, launched in 2015 under the **Digital India program**, is a pioneering initiative aimed at modernizing the Indian judicial system through the centralized management of case information.

### Features

- **Case Tracking:** The NJDG enables real-time tracking of pending cases across the entire Indian judicial system, encompassing the Supreme Court and lower courts.
- **Data Centralization:** A fundamental aspect of the NJDG is its ability to centralize case information. It acts as a unified repository that consolidates data from district and subordinate courts. This centralization simplifies access to critical legal information, eliminating the need to search through multiple physical files or databases.
- **Transparency:** The NJDG significantly enhances transparency within the Indian judiciary. By offering real-time updates on cases, including case status, upcoming hearing dates, and final judgments, it demystifies the legal process.
- **Efficiency:** By reducing reliance on physical paperwork and streamlining administrative processes, the system accelerates case management. Judges and court personnel can access information swiftly, enabling more informed decision-making and expeditious resolution of legal matters.

### Steps Taken to Implement

- **Infrastructure Development:** India has invested significantly in digital infrastructure, including state-of-the-art data centers equipped with advanced computing and storage capabilities.
- **Data Digitization:** Case records have undergone systematic conversion into digital formats. This process involves scanning and digitizing paper-based case documents and records, ensuring historical case data becomes accessible and searchable within the digital platform.

- **Training:** Training programs have been designed for judges, court staff, and legal professionals to ensure effective utilization of the NJDG.
- **Data Security Measures:** Robust data security measures, including encryption, access controls, and intrusion detection systems, have been implemented to safeguard sensitive legal information.

## Basic Structure Doctrine

### Context

- Chief Justice of India D Y Chandrachud on Friday chose not to speak on the basic structure doctrine, saying he would rather express through his judgments and not through a public pronouncement outside the court.

### About

- The Basic Structure Doctrine is a foundational principle in Indian constitutional law that limits the power of the Parliament to amend the Constitution.

### Origin

- The Basic Structure Doctrine emerged from the Kesavananda Bharati case in 1973.
- In this case, a 13-judge constitutional bench ruled that while Parliament has the authority to amend any provision of the Constitution, including fundamental rights, it cannot alter the basic structure of the Constitution.

### Basic Features

- These include the supremacy of the Constitution, unity and sovereignty of India, secular character of the Constitution, and the separation of powers, among others.
- Over time, the Supreme Court has expanded the list of basic features to include rule of law, judicial review, free and fair elections, welfare state (socio-economic justice), and more.
- The court has the authority to determine whether a constitutional amendment violates the basic structure.

### Historical Context

- The Basic Structure Doctrine has its roots in earlier cases like the Shankari Prasad case in 1951 and the Golak Nath case in 1967.

- In these cases, the Supreme Court ruled on the Parliament's power to amend the Constitution.
- The Golak Nath case, in particular, stated that Parliament could not take away or shorten any fundamental rights.

### Current Status

- As of the present, under Article 368 of the Indian Constitution, Parliament has the authority to amend any part of the Constitution, including fundamental rights, as long as it does not affect the basic structure of the Constitution.
- The Supreme Court has not provided an exhaustive definition of the basic structure but has identified various elements that constitute it.

### Judicial Powers

- The Supreme Court has reiterated its powers under Articles 32, 136, 141, and 142, as well as those of High Courts under Articles 226 and 227, as part of the basic structure.
- These powers enable the courts to uphold the Constitution's basic structure.

## Special Session

### Context

- The government convened a five-day special session of Parliament from September 18 to September 22.

### Details

- **Constitutional Mandate:** Article 85 of the Indian Constitution mandates that Parliament must meet at least twice a year. The regular sessions include the Budget Session and the Monsoon Session.
- **Maximum Gap Between Sessions:** The Constitution also sets a limit on the maximum gap between two sessions of Parliament, which cannot exceed six months. This ensures regular parliamentary oversight and functioning.
- **President's Authority:** The President of India has the authority to summon a special session of Parliament at any time, beyond the regular sessions. This is usually done to address



pressing and urgent matters that cannot wait for the next scheduled session.

- **Reasons for Special Sessions:** Special sessions may be called for various reasons, including responding to natural disasters or security threats, introducing urgent legislation, resolving political crises, or fulfilling constitutional requirements such as approving a constitutional amendment.
- **Agenda Determination:** The agenda for a special session is determined by the Cabinet, led by the Prime Minister. These sessions typically focus on urgent and critical matters.
- **Duration:** A special session can last for a maximum of 14 days, as specified in the Constitution. However, if necessary, the President can extend the session for an additional 14 days to address specific issues.
- **Rules and Procedures:** During a special session, the same parliamentary rules and procedures that apply to regular sessions are followed. This includes requirements for a quorum and the same voting procedures.
- **Legislative Process:** Legislation introduced during a special session, including money bills, must go through the normal parliamentary procedures and be passed by a majority of the members of Parliament. The established legislative process is not bypassed during special sessions.

## Pandit Deendayal Upadhyay National Welfare Fund

### Context

- The Pandit Deendayal Upadhyay National Welfare Fund for Sportspersons (PDUNWFS) is a government scheme designed to provide financial assistance to outstanding sportspersons, coaches, and their families who are facing financial hardships, particularly those living in difficult circumstances.

### Key highlights of this scheme

- **Financial Support for Sportspersons and Their Families:** The primary objective of PDUNWFS is to offer financial aid for various purposes related to sports and the well-being of athletes and their families. This support can

encompass improving their living conditions, providing assistance for basic needs, housing, and other aspects of their daily lives.

- **Medical Expenses Coverage:** The fund can be utilized to cover medical expenses incurred by sportspersons, coaches, or their family members. This includes costs related to injuries or illnesses that may occur during sports activities.
- **Injury Rehabilitation:** In cases where sportspersons sustain injuries while training or competing, the PDUNWFS provides financial support to cover the costs of treatment, rehabilitation, and recovery, ensuring they can get back to their sport.
- **Sports Equipment and Gear:** The scheme helps sportspersons acquire the necessary sports equipment and gear required for their training and competitions. This ensures that they have access to high-quality equipment to enhance their performance.
- **Support for National and International Competitions:** PDUNWFS assists sportspersons in participating in national and international sports events. This includes covering expenses related to travel, accommodation, competition fees, and other associated costs, making it easier for athletes to compete at the highest levels.

## Bharatkosh Portal

### Context

- Recently, a pilot e-wallet facility was launched.
- The e-wallet will be particularly useful for processing of fees for various regulatory approvals in the Bharatkosh portal and act as a prepaid wallet that would enable registered users to add funds in advance.
- Initially, only NEFT/RTGS mode will be allowed for adding funds. The users would also be able to generate receipt and challan instantly.

### About

- The Bharatkosh is the initiative of O/o Controller General of Accounts, M/o Finance, Government of India to provide one stop

services to deposit any fees/fine/other money into the Government Account.

- It converges all the Civil Ministries/Departments of Government of India.
- It aims to provide 24X7 year round electronic services to deposit the money into

Government Account using internet based payment technologies to the users at the door step through the web based portal.

- It thus leverages the e-Governance commitment of the Government to provide e-efficient, e-effective, e-excellent government anywhere anytime.

## Shreyas Scheme

### Context

- SHREYAS scheme empowers thousands: over 2300 crore rupees allocated for education of SC and OBC students since 2014.

### Details

- The SHREYAS scheme, initiated in 2014, encompasses four central sector sub-schemes aimed at empowering Scheduled Castes (SCs) and Other Backward Classes (OBCs) students through education.

Sub-Scheme	Objective	Key Details	Impact
<b>1: Free Coaching Scheme for SCs and OBCs</b>	<ul style="list-style-type: none"> <li>• Provide <b>high-quality coaching</b> to economically disadvantaged SC and OBC candidates.</li> <li>• Prepare them for <b>competitive and entrance exams</b> for public and private sector jobs.</li> <li>• Facilitate admissions to <b>prestigious technical and professional higher education institutions</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Total family income ceiling:</b> 8 lakhs per annum.</li> <li>• <b>Annual allocation:</b> 3500 slots.</li> <li>• <b>SC:OBC student ratio:</b> 70:30.</li> <li>• <b>30% slots reserved for females.</b></li> <li>• Flexibility in ratios to ensure at least <b>50% SC students</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Funding Allocation:</b> From 2014-15 to 2022-23, a total of <b>77 crore rupees</b> released.</li> <li>• <b>Beneficiaries: 19,995 beneficiaries.</b></li> </ul>
<b>2: Top Class Education for SCs</b>	<ul style="list-style-type: none"> <li>• Promote quality education among SC students.</li> <li>• Offer <b>full financial support</b> for studies beyond the 12th class.</li> <li>• Scholarships continue based on <b>satisfactory performance</b>.</li> <li>• Inclusion of <b>prestigious institutions</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Total family income ceiling:</b> 8 lakhs per annum.</li> <li>• Allocation for <b>2021-22 to 2025-26:</b> 21,500 scholarships.</li> <li>• Financial support includes <b>tuition fees, academic allowance, and living expenses</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Funding Allocation:</b> From 2014-15 to 2022-23, a total of <b>43 crore rupees</b> released.</li> <li>• <b>Beneficiaries: 21,988 beneficiaries.</b></li> </ul>
<b>3: National Overseas Scheme for SCs</b>	<ul style="list-style-type: none"> <li>• Provide <b>financial assistance</b> for master's and Ph.D. level courses abroad.</li> <li>• Open to SCs, De-notified, Nomadic, Semi-</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Total family income ceiling:</b> Less than Rs. 8 lakhs per annum.</li> <li>• <b>Criteria:</b> More than <b>60% marks</b> in the qualifying examination, below 35</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Funding Allocation:</b> From 2014-15 to 2022-23, a total of <b>14 crore rupees</b> released.</li> <li>• <b>Beneficiaries: 950 beneficiaries.</b></li> </ul>

	<p>Nomadic Tribes, and others.</p> <ul style="list-style-type: none"> <li>• Admission in <b>top 500 QS ranking foreign Institutes/Universities.</b></li> <li>• Covers tuition fees, maintenance, visa fees, and air passage.</li> </ul>	<p><b>years of age.</b></p>	
<p><b>4: National Fellowship for SC Students</b></p>	<ul style="list-style-type: none"> <li>• Support SC students in pursuing higher education leading to <b>Phil/Ph.D. degrees.</b></li> <li>• Available in <b>Sciences, Humanities, and Social Sciences.</b></li> <li>• Based on qualifying exams like <b>NET-JRF</b> and <b>UGC-CSIR Joint Test.</b></li> <li>• Generous fellowship rates and <b>no financial ceiling.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Fellowship rates for <b>JRF and SRF.</b></li> <li>• Contingency allowances for <b>Humanities &amp; Social Sciences and Sciences, Engineering &amp; Technology.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Funding Allocation:</b> From 2014-15 to 2022-23, a total of <b>89 crore rupees</b> released.</li> <li>• <b>Beneficiaries: 21,326 beneficiaries.</b></li> </ul>

## Armed Forces Tribunal

### Context

- The Armed Forces Tribunal (AFT) Chandigarh Bench Bar Association has gone on indefinite strike in protest against the AFT chairperson's decision to transfer a judicial member from the city to Kolkata.

### About

- Armed Forces Tribunal is a military tribunal in India.
- It was **established under the Armed Forces Tribunal Act, 2007.**

### Origin

- In 1999, the **Law Commission's 169th report** stated that disciplinary and service matters required quick resolutions and proposed a special tribunal for the military forces (viz. The Indian Army, The Indian Navy & The Indian Air Force).

### Act and Powers

- The Armed Forces Tribunal Act 2007, was passed by the Parliament and led to the formation of AFT with the power provided for the adjudication or trial by the Armed Forces Tribunal of disputes and complaints **with respect to commission, appointments, enrolments, and conditions of service in respect of persons subject to the Army Act, 1950, The Navy Act, 1957 and the Air Force Act, 1950.**
- It **can further provide for appeals arising out of orders, findings, or sentences of courts-martial** held under the said Acts and for matters connected therewith or incidental thereto.

### Benches

- Besides the **Principal Bench in New Delhi,** AFT has Regional Benches at Chandigarh, Lucknow, Kolkata, Guwahati, Chennai, Kochi, Mumbai, Jabalpur, Srinagar and Jaipur. With the exception of the Chandigarh and Lucknow Regional Benches, which have three benches each, all other locations have a single bench.
- Each Bench comprises a Judicial Member and an Administrative Member.

### Eligibility

- The Judicial Members are **retired High Court Judges and Administrative Members are retired Members of the Armed Forces** who have held the rank of Major General/ equivalent or above for a period of three years or more, Judge Advocate General (JAG), who have held the appointment for at least one year are also entitled to be appointed as the Administrative Member.

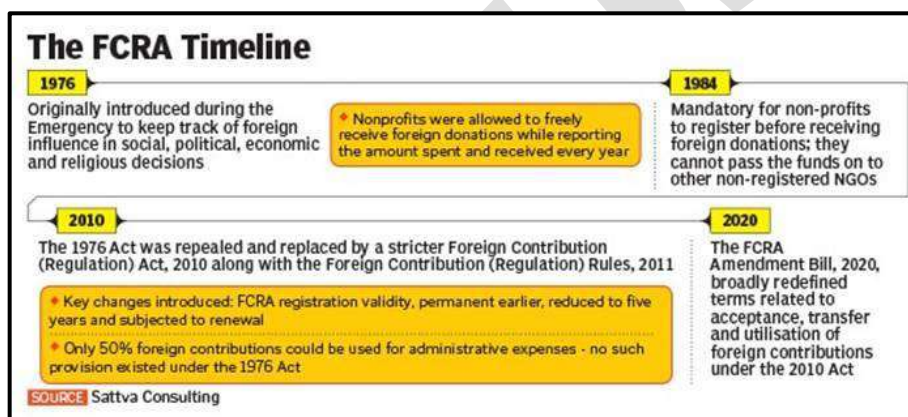
### General Rules

- The Tribunal shall transact their proceedings as per the Armed Forces Tribunal (Procedure) rules, 2008.
- All proceedings in the Tribunal will be in English.
- The Tribunal will normally follow the procedure as is practiced in the High Courts of India.
- The dress as mandated for the officials of the Tribunal including bar will be white shirt, collar band and a black coat/ jacket.

## Foreign Contribution Regulation Act

### Context

- The Ministry of Home Affairs (MHA) has amended the rules related to the filing of annual returns by Non-Government Organizations (NGOs) registered under the Foreign Contribution Regulation Act (FCRA). These changes involve the requirement for NGOs to provide details about both movable and immovable assets created using foreign funds.



### Key points from the notification

- The amendment aims to **enhance transparency and accountability in the utilization of foreign contributions received by NGOs.**
- NGOs are now required to furnish details of movable assets created using foreign contributions as of March 31 of the financial year.
- NGOs must also provide details of immovable assets created using foreign contributions as of March 31 of the financial year.
- These amendments are made under the powers conferred by section 48 of the Foreign Contribution (Regulation) Act, 2010.
- The Foreign Contribution (Regulation) Amendment Rules, 2023 came into force on the date of their publication in the Official Gazette.

## COFEPOSA Act

### Context

- The Madras High Court hearing a case regarding a detention order issued under the Conservation of Foreign Exchange and Prevention of Smuggling Activities Act (COFEPOSA) Act, 1974.

### COFEPOSA Act

#### About

- Its primary objectives are to prevent and combat smuggling activities, conserve foreign exchange, and address related matters.

- The COFEPOSA Act can be used to detain persons who are suspected of being involved in a wide range of offences, including:
  - Smuggling of goods or foreign exchange
  - Dealing in smuggled goods
  - Financing of smuggling activities
  - Abetting or conspiring to commit smuggling offences
  - Other economic offences that could harm the country's foreign exchange reserves
- It is administered by the Ministry of Finance.

### Features

- The COFEPOSA Act grants the power of preventive detention to the Central Government, State Government, or specific government officials.
- If a State Government issues a detention order, it must send it to the Central Government within 10 days for review and approval.
- **The Act mandates that the grounds for detention must be communicated to the detainee within 5 days of their detention.** However, there is a provision for a delay of up to 15 days if the reasons for the delay are provided in writing.
- The authority issuing the detention order is required to demonstrate to both the courts and the detainee that the order has been issued in accordance with the law and with due consideration.
- **High Courts have the authority to examine detention orders** before they are executed.
- **Detention orders can be executed anywhere in India**, similar to arrest warrants under the Code of Criminal Procedure, 1973.

## 1.13 SNIPPETS

### Rupay NCMC Prepaid Card

APTI PLUS

- State Bank of India has launched the "RuPay NCMC Prepaid Card".
- The "RuPay NCMC Prepaid Card" will facilitate easy digital ticketing fare payments in metro, buses, water ferries, parking, etc., through a single card.
- In addition, individuals can also use the National Common Mobility Card (NCMC) for making retail and e-commerce payments, India's largest bank said.
- The Nation First Transit Card, powered by RuPay and National Common Mobility Card (NCMC) technology, is set to revolutionize the commuting experience and is aligned with the national vision of "One Nation, One Card."



### Ayushman Bhava

APTI PLUS

- Recently, the Ayushman Bhava campaign was launched.
- 'Ayushman Bhav' is a public health campaign set to be launched across India for people belonging to economically weaker sections.
- The campaign comprises three key components--Ayushman ApkeDwar 3.0, Ayushman Mela, and Ayushman Sabha.
- The program is aimed to enhance healthcare accessibility and raise health awareness across the nation.





## PM Vishwakarma Scheme

- The scheme aims to promote skill development and empowerment among the youth who are engaged in traditional artisan works such as weaving, goldsmithing, blacksmithing, laundry, barbering and others.
- The scheme will have an initial allocation of around ₹13,000 crore to ₹15,000 crore and was launched on the occasion of Vishwakarma Jayanti, which falls on September 17 this year.
- It will provide market linkages to the artisans and craftsmen through various platforms such as e-commerce portals, exhibitions, fairs, festivals etc. It will also facilitate branding, packaging etc.

**PM Vishwakarma**  
Cabinet Decision to support traditional artisans & crafts people of rural and urban India

**Highlights of the Programme:**

- Financial outlay of Rs. 13,000 crore
- 18 Traditional trades to be covered in 1st instance
- Artisans and Craftpeople to be provided recognition with PM Vishwakarma Certificate and ID Card
- Cash support upto Rs. 1 lakh (for 1st trade) and Rs. 2 lakh (2nd trade) with operational interest rate of 5%
- Will provide Skill Upgradation, bank loan and insurance for Digital transactions and Marketing support

**18 Traditional trades to be covered in 1st instance**

1. Carpenter (Rural)
2. Steel Mower
3. Basketweaver
4. Blacksmith (Urban)
5. Basket and Tackle Maker
6. Lacksmith
7. Goldsmith (Rural)
8. Potter (Rural/Urban)
9. Sculptor (Marble/Stone/Clay)
10. Stone Smelter
11. Clothier (Shankar/Thosamthi/Fudherar)
12. Weaver (Rajmash)
13. Barber (Bar/Street Maker/Care Weaver)
14. Oil & Tea Maker (Traditional)
15. Barber (Rural)
16. Goldsmith (Urban)
17. Washerman (Shubh)
18. Fishing Net Maker

Cabinet Decision  
19 August, 2023

## Skill India Digital

- The Union Minister of Skill Development and Entrepreneurship has launched the Skill India Digital (SID), a comprehensive digital platform that aims to transform India's skills, education, employment and entrepreneurship landscape.
- The primary mission of SID is to provide industry-relevant skill training, employment opportunities, and entrepreneurial support to empower Indians. Its ultimate objective is to enhance the prospects and future opportunities of individuals across the country.
- SID places a significant emphasis on digital technology and Industry 4.0 skills.
- The platform aligns itself with the G20 framework for establishing Digital Public Infrastructure (DPI) and promoting digital skills and literacy. This alignment reflects international best practices and standards.
- SID serves as an extensive information hub, consolidating data on government initiatives related to skill development and entrepreneurship.

**Skill India**  
कौशल भारत - कुशल भारत

## Free Movement Regime

- Manipur Chief Minister has expressed concerns about the free movement regime along the India-Myanmar border and has urged the Union Home Ministry to cancel it.
- The border between India and Myanmar runs for 1,643 km in the four states of Mizoram, Manipur, Nagaland, and Arunachal Pradesh.
- The FMR is a mutually agreed arrangement between the two countries that allows tribes living along the border on either side to travel up to 16 km inside the other country without a visa.
- The FMR was implemented in 2018 as part of India's Act East policy at a time when diplomatic relations between India and Myanmar were on the upswing.



## PM-WANI

- The PM-WANI scheme by the Department of Telecommunications aims to increase internet connectivity across the country by implementing a decentralized system of public access points.
- PM WANI (Wi-Fi Access Network Interface) is a scheme meant to increase Wi-fi access throughout the country.
- It is contemplated that the proliferation of public Wi-Fi networks throughout the country will greatly increase internet access at cheap prices.
- Furthermore, the decentralised nature of the WANI ecosystem is meant to address last mile connectivity and allow access points to grow organically in places that need them the most.

**PM Wani Free Internet Yojana**

From an individual in a residential area to a Kirana shop owner can have a Public Data Office (PDO)

KIRANA SHOP

PM WANI

## 1.14 1 MAINS & 5 MCQs

**Q1. Analyze the divergence between the constitutional ideal of fraternity and its practical manifestation in India, considering historical roots, contemporary challenges, and the role of political and social initiatives. (250 Words)**

### Introduction

- Fraternity, a key component of India's constitutional ideals, encompasses the concept of social and political unity among individuals within society. While India's struggle for independence emphasized the importance of fraternity, its practical manifestation in contemporary India raises questions about its realization.

### Body

- **Historical Significance of Fraternity:** During the freedom struggle, fraternity played a pivotal role in uniting diverse communities for a common cause. Dr. B.R. Ambedkar underscored the interconnectedness of liberty, equality, and fraternity in India's unique context.
- **Neglect of Fraternity:** Regrettably, fraternity has often been marginalized in political discourse and intellectual discussions. This disconnect between theoretical recognition and practical application hinders its full realization.
- **Historical Origins of Fraternity:** Fraternity found expression in ancient Greece through the sharing of knowledge, in medieval

Christian society through shared moral values, and in the French Revolution with the iconic slogan "liberté, égalité, fraternité."

- **Challenges in India:** India's caste divisions complicate fraternity's development. A secular conception of fraternity, focusing on political unity rather than communal histories, is essential. Bridging ideological differences through political engagement is also crucial.
- **Fraternity and Equality:** In India, fraternity is primarily a political goal tied to equality. Measures like reservations aim to reduce social inequalities, fostering fraternity by creating a more equitable society.
- **Limits to Fraternity:** Certain preconditions must be met to achieve political fraternity, including addressing social inequalities, avoiding belligerent nationalism, and countering fundamentalism.
- **Caste and Political Fraternity:** The coexistence of the caste system and political fraternity poses significant challenges, and the struggle to determine their future in Indian politics persists.

### Conclusion

- Fraternity remains relevant in India's political philosophy, yet faces practical challenges in a society marked by deep-seated inequalities and divisions. The path forward for fraternity in Indian politics hinges on effectively addressing these challenges to achieve genuine unity among its diverse populace.

**Q2. Who is eligible to be appointed as an Administrative Member of the Armed Forces Tribunal?**

- A) Retired High Court Judges
- B) Retired Members of the Armed Forces with any rank
- C) Retired Members of the Armed Forces with the rank of Major General or equivalent for at least one year

D) Any retired individual with legal expertise

**Q3. Consider the following statements about the COFEPOSA Act in India:**

- 11. The COFEPOSA Act primarily aims to combat smuggling activities and conserve foreign exchange.

2. It grants the power of preventive detention to the Central Government, State Government, or specific government officials.
3. High Courts have the authority to examine detention orders before they are executed.
4. The COFEPOSA Act is administered by the Ministry of Agriculture.

**How many of the statements given above are correct?**

- A) Only one
- B) Only two
- C) Only three
- D) All four

**Q4. Consider the following statements about special sessions of the Indian Parliament:**

1. Article 85 of the Indian Constitution mandates that Parliament must meet at least twice a year.
2. Special sessions can last for a maximum of 14 days, with the possibility of a 14-day extension.
3. The agenda for a special session is determined by the Cabinet, led by the Prime Minister.
4. During special sessions, parliamentary rules and procedures may differ from regular sessions.

**How many of the statements given above are incorrect?**

ANSWERS: 2) c, 3) c, 4) a, 5) c, 6) b

- A) Only one
- B) Only two
- C) Only three
- D) All four

**Q5. Consider the following statements in reference to PM Vishwakarma Scheme:**

1. The scheme will have an initial allocation of around ₹13,000 crore.
2. It will provide market linkages to the artisans and craftsmen through various platforms.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Q6. Consider the following statements in reference to autonomous district councils:**

1. All the autonomous district councils are located in North East India.
2. According to the Sixth Schedule, the ADCs administering a region within a state have 30 members with a term of five years.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

## 2. INTERNATIONAL RELATIONS

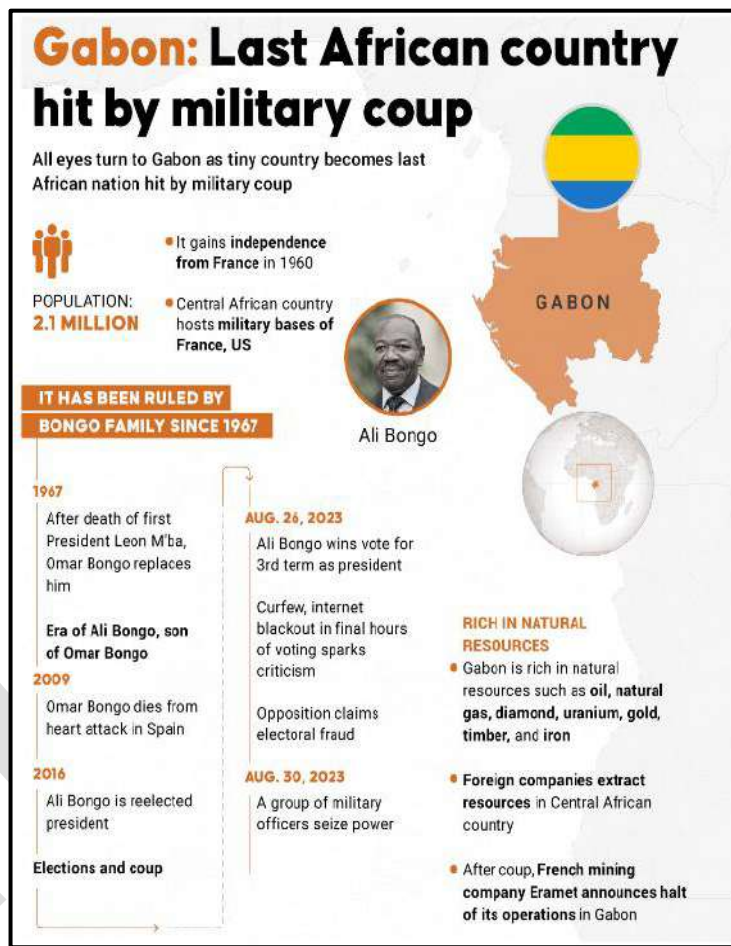
### 2.1 GABON COUP

#### Context

- Gabon's ruling junta which seized power in a coup last week appointed a former opposition leader, Raymond Ndong Sima, as prime minister of its transitional government.

#### Details

- The recent coup in Gabon was executed peacefully and appeared to be a "good coup", with society and business operating as usual, a senior executive from the Africa Finance Corporation (AFC).
- The Lagos-based AFC is a pan-African multilateral development institution, with 40 member states. It is 43.1%-owned by Nigeria's central bank and 42% by other African financial institutions.
- Unlike Niger, Gabon has not seen an outpouring of anti-French, pro-Russian sentiment, and the generals in charge in Libreville have appeared open to dialogue with international organisations.



#### Current issues

- Military officers of Central African nation Gabon announced on August 30 that they have taken power "on behalf of the Gabonese people" and that they were "putting an end to the current regime".
- The coup occurred just after the results of country's general elections were announced to pave the way for a third presidential term to Ali Bongo Ondimba, who over the years gained notoriety for his alleged corrupt practices.
- The general elections of August 26, 2023, as well as the truncated results, are cancelled. The borders are closed until further notice. All institutions of the Republic are dissolved," a military officer announced on television.
- The military described August 26 elections as having not met the conditions for a transparent ballot. "In addition, irresponsible, unpredictable governance has led to a steady deterioration in social cohesion, threatening to drive the country into chaos," the military officer reasoned.
- President Ali Bongo currently remains under house arrest, after the Central African state's election body announced that he had won a third term. The ousted president released video of himself in which he can be seen appealing to his 'friends' in the world to 'make noise'.

[Gabon latest addition in African 'coup belt':](#)



- The coup in Gabon comes a month after military in **West African nation Niger** took over power and detained democratically-elected Mohamed Bazoum.
- **Africa now has the longest corridor of military rule on Earth.** The continent now has a total over seven countries under military rule.
- **Apart from Gabon, Guinea, Burkina Faso, Mali, Niger, Chad and Sudan are now controlled by juntas** that came to power in a coup – all but one in the past two years.

### Background and Election Dispute

- **Ali Bongo was elected in 2009 after his father's death;** family rule for over 55 years.
- **2016 elections marked by violence after Bongo's narrow victory;** allegations of fraud.
- Gabon's opposition **accuses Bongo of fraud** and demands a peaceful transfer of power.

### How coup in Gabon is different from the ones in rest of Africa?

- **The military takeover in Gabon is different in a way** that unlike its counterparts in the Sahel region of Africa, the country is least affected by jihadist violence. The country is relatively stable despite high proportion of unemployed people in the population.
- **Nearly 40 per cent of Gabonese people aged 15-24 were out of work in 2020,** according to the World Bank.

## About Gabon

### Location

- Gabon is a country located in Central Africa, bordered by the **Atlantic Ocean to the west.**
- Known for its **rich biodiversity, natural resources, and unique cultural heritage,** Gabon is a country of contrasts.

### Geography

- Gabon is **situated along the equator,** covering an area of about 267,667 square kilometers.
- The country boasts a **variety of ecosystems, including rainforests, savannas, wetlands, and coastal regions.**

### Culture

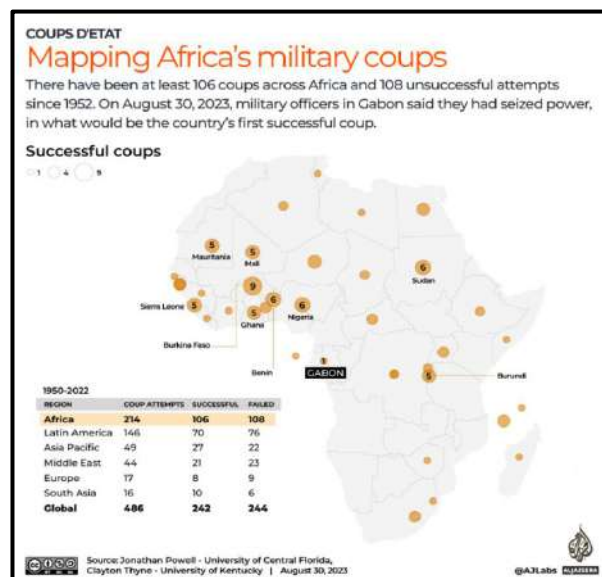
- Gabon is home to **several ethnic groups, including the Fang, Bapounou, Eshira, and Myene,** each contributing to the nation's cultural mosaic.
- **French is the official language,** while indigenous languages are also widely spoken. **Fang** is one of the prominent local languages.

### Economy

- Gabon's economy heavily depends on **oil production,** which is a major source of revenue. The country also has **reserves of minerals like manganese and iron ore.**
- Gabon has taken steps towards **sustainable development,** implementing measures to protect its forests and promote ecotourism.

### Conservative efforts

- Gabon has established a network of protected areas to safeguard its **unique ecosystems and wildlife,** contributing to **global conservation efforts.**
- Gabon Bleu Initiative was launched in 2020, this **initiative focuses on marine conservation, aiming to**





protect 26% of Gabon's waters by 2025.

## 2.2 INDIA AND NEW WORLD ORDER

### Context

- The President of the World Economic Forum, Borge Brende on Saturday said that India, US and China will lead the new world order in the coming years.

### Details

- Post-Cold War multilateralism is past its peak** – at both the global and regional levels. This week's East Asia Summit in Jakarta and the G20 summit in Delhi highlight the deep and arguably irreversible crises in the old multilateral order.
- The dying embers of old multilateralism** are marked less by the absence of Russian President Vladimir Putin and Chinese President Xi Jinping at both summits than by their deepening conflicts with the rest of the world.
- Russia is locked in a war with the West over Ukraine**, and China is at odds with many of its Asian neighbours, including India, Japan, the Philippines, and Vietnam, as well as the US.
- The gloomy prospect for multilateralism** is in contrast with India's brightening opportunities to shape regional and global orders.
- Delhi's role is critical in the Indo-Pacific Quadrilateral Forum**, in the attempt to broaden the ambit of the G20 to address the concerns of the Global South and in the promotion of balanced globalisation that will help all countries.

**As India's bilateral challenges with China multiply, regional and global multilateralism has emerged at the core of**

- India's national security and international relations.** No wonder India is investing so heavily in multilateral diplomacy, including the Quad and G-20 and is making bold departures from the traditional tenets of its multilateralism.
- The end of the Cold War at the turn of the 1990s** created favourable conditions for an intensive phase of multilateralism. Europe moved towards rapid regional economic integration and expansion under the banner of the European Union.
- In Asia, the Association of Southeast Asian Nations** provided the framework for intensifying regional economic and political cooperation.
- Regionalism in Europe and Asia was facilitated by the end of the great power rivalry** in both continents. Russia was drawn into the Group of Seven leading Western countries, making it the **G8**. Moscow was also engaged in consultations with the **NATO**.



**Four features of India's new multilateralism stand out at the Jakarta and Delhi summits**

<b>FIRST (in Jakarta)</b>	<ul style="list-style-type: none"> <li>PM will underline that the Quad is not in competition with the <b>ASEAN</b> but will complement its efforts to <b>promote regional stability</b> through more <b>bilateral and Mini lateral security</b> cooperation to deter and <b>limit unilateralism</b> and <b>territorial expansionism</b>.</li> </ul>
<b>SECOND</b>	<ul style="list-style-type: none"> <li>India's focus on what External Affairs Minister S Jaishankar calls a "<b>re-globalisation</b>" "<b>that is more diversified, more democratic, where there would be multiple centres</b></li> </ul>

	<p><b>of production, not just of consumption.”</b></p> <ul style="list-style-type: none"> <li>Globalisation can't be tethered to China's factories and Beijing's political fancies.</li> </ul>
<b>THIRD</b>	<ul style="list-style-type: none"> <li><b>India is not walking away from finding collective solutions</b> despite the current crisis in multilateralism.</li> <li><b>India has put in much effort</b> in the last nine months not to tie the <b>fate of the G20</b> to just a few issues like Ukraine but to pursue agreements on a range of consequential issues, like <b>modernizing the global tax regime</b> and <b>reforming the multilateral development banks</b>.</li> </ul>
<b>FORTH</b>	<ul style="list-style-type: none"> <li>Putting the concerns of the Global South on the G-20 agenda is likely to be a lasting contribution to <b>India's new multilateralism</b>.</li> <li>Although widely misunderstood as a return to the old confrontational politics of the <b>NAM in the 1970s</b>, <b>Delhi's current emphasis</b> is on building bridges between developing and developed countries.</li> <li>Many in the developed world are waking up to the <b>importance of greater cooperation</b> between the <b>North and the South amidst the breakdown of relations</b> between the East and the West.</li> </ul>

### Closing thoughts

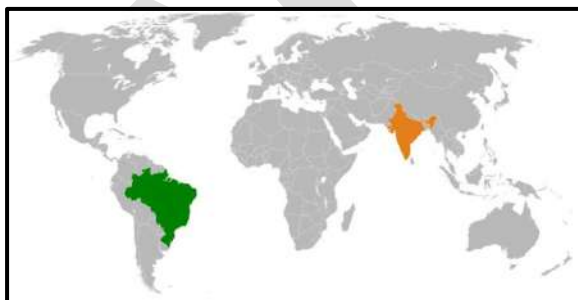
- Building resilient communities to withstand shocks**, economic, political, environmental, etc. combined with social equality should now become the cornerstone of multilateral approaches. This will enable sustainable development.
- To ensure the long-term functioning of the multilateral system and better yet achievement** of its goals, it is essential to strengthen accountability, transparency, inclusivity and democratic partnerships.



## 2.3 INDIA-BRAZIL RELATIONS

### Context

- General Tomas Miguel Mine Ribeiro Paiva, Commander of the Brazilian Army, is on a six day visit to India from 28th August to 2nd September 2023. The visit marks a significant milestone in the longstanding relationship between the armed forces of India and Brazil.



### Introduction

- Brazil and India established diplomatic relations** in 1948, soon after **Indian Independence (1947)**. Political contacts by high-level authorities have increased since the

2000s, stimulating the identification of cooperation opportunities and motivating the establishment of a **Strategic Partnership in 2006**.

- India Brazil relationship is extensive and comprehensive** covering every important segment of interaction, seen at all three levels: bilateral, plurilateral in forum such as **IBSA, BRICS, BASIC, G-20, G-4** and in the larger multilateral arena such as the **UN, WTO, UNESCO, WIPO, etc.**

### Bilateral Mechanisms:

- As Strategic Partners, India and Brazil have several Institutional mechanisms to coordinate various aspects of their bilateral relationship.** This includes Joint Commission Meeting (Foreign Minister level), Strategic Dialogue (NSA), Foreign Office Consultations (Secretary), Trade Monitoring Mechanism (TMM), Economic and Financial Dialogue, Dialogue on Consular and Mobility Issues,

Joint Defence Commission, Joint Committee on Science & Technology and India-Brazil Business Leaders Forum.

- **Parliamentary exchanges is another major feature of India-Brazil bilateral relations.**
- In Brazil, there is a **Brazil-India Parliamentary Friendship Group.**

#### Trade:

- **In 2019-20, the bilateral trade was valued at US\$ 7.04 billion with exports worth US\$ 3.97 billion and imports worth US\$ 3.07 billion.**
- India and Brazil have established Trade Monitoring Mechanism as an institutional mechanism to monitor and identify bottlenecks in bilateral trade and take appropriate measures to address them.
- **Total Indian investment in Brazil is estimated at more than US\$ 6 billion. Brazilian investments in India are around US\$ 1 billion.**
- India-Brazil CEO Forum was constituted in 2012 and was re-christened as India-Brazil Business Leader's Forum in January 2016.
- MERCOSUR is a regional grouping comprising Brazil, Argentina, Uruguay and Paraguay. **India signed a Preferential Trade Agreement (PTA) with MERCOSUR in 2004.**

#### Defence:

- **India and Brazil signed an agreement in 2003 for cooperation in defence. Meetings of Joint Defence Committee (JDC) are held as an institutionalized mechanism for defence cooperation**
- Brazilian firearms company Taurus Armas SA signed a joint venture with Jindal Defence (part of O P Jindal Group) to produce and sell small arms in India. With an initial investment of US\$ 5 million in a project that is to be developed in phases, the agreement proposes setting up a plant at Hisar (Haryana).
- Indian and Brazilian Navies are also coordinating the technical aspects related to White Shipping Information through a data sharing agreement

#### Security:

- India and Brazil established a Strategic Dialogue mechanism in 2006 to cover regional and global issues of mutual concern. **The two countries already have an**

**Extradition Treaty, Mutual Legal Assistance Treaty in Criminal Matters and an Agreement of Transfer of Sentenced Persons in place.**

#### Space:

- India and Brazil signed a framework agreement for peaceful use of outer space in 2004 as well an Agreement inter-institutional cooperation between the space agencies.
- Minister Pontes witnessed the launch of Brazilian satellite Amazonia-1 at Satish Dhawan Space Center, Sriharikota. Amazonia-1 is the first Earth Observation satellite to be completely designed, integrated, tested and operated by Brazil.

#### Science and Tech:

- The Agreement on S&T Cooperation between India and Brazil was signed on 12 September, 2006
- **Agriculture, food processing and animal husbandry are other key focus areas for bilateral cooperation.**

#### Culture:

- **Brazil is covered under the Scholarship scheme of the Indian Council of Cultural relations (ICCR) with two fixed slots annually.** Brazil is also covered under the AYUSH Scholarship Scheme.
- Under a bilateral agreement signed in 2004, diplomatic and official passport holders are exempted from Visa for a stay of maximum of 90 days. India issues e-visas for Brazilians visiting India for the purpose of tourism, medical treatment and attending conferences.
- **In Brazil, there is a lot of interest in India's culture, religion, performing arts and philosophy.**

#### Community:

- The Indian community in Brazil is estimated to be around 5,000 people, with majority of them living in Sao Paulo, Rio de Janeiro and Manaus.

#### **Closing thoughts**

- India and Brazil are the emerging nations that hold similar principles on democracy, human rights, global governance and liberal strategies. They are partners on the basis of trade relations and have a lot to learn from

each other. With their uniting stance on various multilateral and plurilateral forums, the two countries are considered to be

important for the creation of new world order.

## 2.4 AFRICA'S POTENTIAL IN GLOBAL RE TRANSITION

### Context

- The International Solar Alliance (ISA) hosted its 5th regional meeting in Kigali, Rwanda supported by the Government of Rwanda, with 36 countries and Ministers of 15 countries participating.

### Details

- At the meeting, the President, **International Solar Alliance and Union Minister for Power and New & Renewable Energy**, Government of India, Shri R. K. Singh, who joined the meeting virtually from New Delhi, inaugurated a total of nine solar power demonstration projects in the Republic of Uganda, the Union of Comoros and the Republic of Mali. Four of these **projects are in Uganda, two in Comoros and three in Mali.**
- The Union Minister highlighted the report titled ***"Roadmap of Solar Energy for Universal Energy Access"***, released by ISA, in collaboration with the Ministry of New and Renewable Energy, Government of India.
- The report unfolds a strategic vision of leveraging solar-driven solutions** to tackle the global energy access challenge effectively and economically. The report provides case studies, examples, innovative policies that can make a pivotal shift in deployment of solar mini-grids.

### About Africa's Potential in Global RE Transition

A large part of Africa has so far been left out of the energy transition:

- Only 2% of global investments** in renewable energy in the last two decades were made in Africa, with significant regional disparities.
- Less than 3% of global renewables jobs** are in Africa.
- In Sub-Saharan Africa, electrification rate was static at 46% in 2019** with 906 million people still lacking access to clean cooking fuels and technologies.

But the continent has enormous potential:

- Africa has vast resource potential in wind, solar, hydro, and geothermal energy** and falling costs are increasingly bringing renewables within reach.
- Central and Southern Africa have abundant mineral resources** essential to the production of electric batteries, wind turbines, and other low-carbon technologies.

The last decade has seen progress:

- Renewable energy deployment has grown in the last decade**, with more than 26 GW of renewables-based generation capacity added. The largest additions were in solar energy.
- Average annual investments in renewable energy** grew ten-fold from less than USD 0.5 billion in the 2000-2009 period to USD 5 billion in 2010-2020.





- **Distributed renewable energy solutions**, including stand-alone systems and mini-grids, are playing a steadily growing role in expanding electricity access in off-grid areas and strengthening supply in already connected areas.

## 2.5 ASEAN-INDIA SUMMIT

### Context

- Prime Minister attended the 20th ASEAN-India Summit and the 18th East Asia Summit (EAS) in Jakarta on 7 September 2023.

### Details

- At the ASEAN-India Summit, Prime Minister held extensive discussions with ASEAN partners on further strengthening of ASEAN-India Comprehensive Strategic Partnership and charting its future course.
- Prime Minister reaffirmed ASEAN centrality in the Indo-Pacific and highlighted the synergies between India's Indo-Pacific Ocean's Initiative (IPOI) and ASEAN's Outlook on the Indo-Pacific (AOIP).
- He also emphasized the need to complete the review of ASEAN-India FTA (AITIGA) in a time bound manner.



### About ASEAN-India Summit:

- **Historical Context:**
  - India's relationship with ASEAN dates back to ancient times through cultural and trade connections.
  - The formal partnership between India and ASEAN was established in 1992 when India became a sectoral dialogue partner of ASEAN.
- **Aim and Objectives:**
  - The ASEAN-India Summit aims to promote political, economic, social, and cultural cooperation and dialogue between India and ASEAN member states.
  - It seeks to strengthen regional stability, peace, and economic development.
- **Agendas and Priorities:**
  - The summit covers a wide range of issues, including trade and investment, counter-terrorism, regional security, climate change, cultural exchange, and people-to-people ties.
  - Economic cooperation is a significant aspect, with discussions on trade agreements, infrastructure development, and connectivity projects to boost economic ties between India and ASEAN.

### India's 12-Point Proposal

Prime Minister presented a 12-point proposal for strengthening India – ASEAN cooperation covering connectivity, digital transformation, trade and economic engagement, addressing contemporary challenges, people-to-people contacts and deepening strategic engagement, as follows:

- The Prime Minister presented a **12-point proposal for strengthening India – ASEAN cooperation** covering connectivity, digital transformation, trade, and economic engagement, addressing contemporary challenges, people-to-people contacts, and deepening strategic engagement, as follows:
- Establishing multi-modal connectivity and economic corridor that links South-East Asia-India-West Asia-Europe.
- Offered to share India's Digital Public Infrastructure Stack with ASEAN partners.



- Announced ASEAN-India fund for Digital Future focusing on cooperation in digital transformation and financial connectivity.
- Announced renewal of support to the Economic and Research Institute of ASEAN and East Asia (ERIA) to act as a knowledge partner for enhancing our engagement.
- Called for collectively raising issues being faced by Global South in multilateral fora.
- Invited ASEAN countries to join the Global Centre for Traditional Medicine being established by WHO in India.
- Called for working together on Mission LiFE.

### 18th East Asia Summit

About	<ul style="list-style-type: none"> <li>• The 18th East Asia Summit (EAS) is a significant diplomatic forum that brings together leaders from 18 countries in the Asia-Pacific region. The EAS serves as a platform for dialogue and cooperation on various political, economic, and security issues.</li> </ul>
Member countries	<ul style="list-style-type: none"> <li>• The East Asia Summit consists of 18 member countries:</li> <li>• The ten ASEAN member states: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.</li> <li>• Plus, the eight ASEAN "Plus" countries: Australia, China, India, Japan, New Zealand, South Korea, Russia, and the United States.</li> </ul>
Aims and Objectives	<ul style="list-style-type: none"> <li>• The primary objective of the EAS is to promote peace, stability, and economic prosperity in the Asia-Pacific region.</li> <li>• It provides a platform for leaders to discuss and cooperate on a wide range of regional and global challenges, including security, trade, climate change, and disaster management.</li> </ul>
Agendas and priorities	<ul style="list-style-type: none"> <li>• The EAS covers a broad spectrum of topics, including regional security, economic integration, sustainable development, and disaster resilience.</li> <li>• Discussions often focus on pressing issues such as maritime security, counter-terrorism, non-proliferation, and cybersecurity.</li> </ul>
Leadership format	<ul style="list-style-type: none"> <li>• The EAS is typically held as an annual summit, with leaders from member countries participating.</li> <li>• The host country for each summit rotates among the EAS members.</li> </ul>

## 2.6 18TH G20 SUMMIT

### Context

- The leaders at India's showpiece G20 Summit arrived at a joint communique – called the G20 New Delhi Leaders' Declaration.

### Details

- In the PM's inaugural address, he said: "It was in the spirit of 'sabka saath' that India proposed permanent membership for the African Union in the G20
- The African Union, which represents 55 countries, was admitted as a new member of the G20 on Saturday, three months after India proposed its inclusion.



- The idea was floated in June this year, when Prime Minister Narendra Modi wrote to G20 leaders to propose that the African Union be given “full membership at the upcoming Delhi Summit of G20, as requested by them”.
- The US and France had affirmed their support.

## Major Outcomes of G20 Summit 2023

### Prime Minister Narendra Modi’s diplomatic coup:

- PM Modi views this summit as India’s diplomatic milestone, with its G20 presidency serving as a platform to amplify the Global South’s concerns.
- In a personal capacity, the G20 Summit’s outcomes are important for the Indian leader as he faces general elections next year.
- At the Summit, **India was able to leverage its economic significance to garner support from all G20 member nations** for a Leaders’ Declaration recognizing the conflict in Ukraine without specifying any aggressor.
- Modi, who chaired the Summit, also advocated for reforming global institutions like the **United Nations Security Council (UNSC)** to align with the changing world dynamics, which received backing from the United States.
- The timing of the G20 Summit was also opportune, following India’s successful moon landing under the **Chandrayaan-3 program**.

### G20 New Delhi Declaration:

- All 83 paragraphs of the 2023 G20 New Delhi Leaders’ **Declaration were unanimously approved**, achieving a remarkable 100 percent consensus, even with China and Russia in agreement.
  - Notably, this declaration stood out by containing no footnotes or Chair’s Summary, marking a historic moment.
- Within these 83 paragraphs, multiple agreements pertaining to the Finance Track were embedded. Furthermore, it featured 8 paragraphs addressing the conflict in Ukraine and its subsequent economic implications.
- Finance Minister Nirmala Sitharaman highlighted the achievements of the Indian G-20 Presidency, emphasizing a concrete strategy for **strengthening multilateral development banks**, a clear path for **regulating cryptocurrencies**, and the **deployment of digital public infrastructure** to enhance financial inclusion.
- She also underscored the importance of a faster debt relief plan for vulnerable nations.
- **Regarding climate change**, the declaration stressed the urgency of mobilizing “**US\$5.8-5.9 trillion in the pre-2030 period for developing countries**” and “**US\$4 trillion per year for clean energy technologies by 2030**” to attain net-zero emissions by 2050. It called for a substantial increase in climate funding, transitioning from billions to trillions of dollars.

### African Union accepted as part of the G20:

- Prior to this, the only African member of the G20 was South Africa.
- At the Delhi Summit of the G20, the African Union, which represents the 55 countries in the African continent, was given full membership, like how the EU is represented.
- India has successfully positioned itself as a champion for developing and underdeveloped nations and seeks to align this with its ambitions for a permanent seat on the UNSC.
- New Delhi is actively seeking support from the African continent, which holds 55 crucial votes, in pursuit of this goal.
- India also invited Nigeria, Egypt, and Mauritius as part of the ‘Guest Countries’ at the G20 summit.

### India – Middle East – Europe Economic Corridor (IMEC):

- During the G20 Summit in New Delhi, a Memorandum of Understanding (MoU) was signed among the governments of India, the U.S., Saudi Arabia, the European Union, the UAE, France, Germany, and Italy to establish the India – Middle East – Europe Economic Corridor.

#### Climate action:

- Leaders at the G20 Summit did not reach a consensus on the phase-out of fossil fuels, despite a United Nations report categorizing this phase-out as “**indispensable**” for achieving net-zero emissions.
- The G20 nations collectively contribute to **approximately 80 percent of global emissions**. The inability to agree on this crucial issue casts a shadow over upcoming climate discussions set to commence in November in the oil-rich UAE.
- The G20 New Delhi Leaders’ Declaration also featured commitments to mainstream **Lifestyle for Environment (LiFE)**, implement sustainable energy transitions, provide sustainable finance, reaffirm the pursuit of **Sustainable Development Goals (SDGs)**, address plastic pollution, preserve the ocean-based economy, and more.
- Additionally, the summit witnessed the launch of the **Global Biofuel Alliance (GBA)**, a new organization aimed at promoting the development and adoption of sustainable biofuels, along with the establishment of relevant standards and certification.

### About G20 Summit 2023

<b>About</b>	<ul style="list-style-type: none"> <li>• The G20 Summit is an annual international forum that brings together leaders from the world's largest economies to discuss and coordinate on global economic and financial issues, as well as other pressing global challenges.</li> </ul>
<b>Formation and membership</b>	<ul style="list-style-type: none"> <li>• The G20, short for "Group of Twenty," was established in 1999 in the aftermath of the Asian financial crisis. It comprises 19 individual countries and the European Union.</li> <li>• Member countries include Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, and the United States, along with the European Union.</li> </ul>
<b>Aims and objectives</b>	<ul style="list-style-type: none"> <li>• The primary goal of the G20 Summit is to facilitate high-level discussions and cooperation on global economic issues.</li> <li>• It serves as a platform for leaders to address key challenges such as economic growth, financial stability, trade, and development.</li> </ul>
<b>Rotating Presidency</b>	<ul style="list-style-type: none"> <li>• The presidency of the G20 rotates among member countries each year. The country holding the presidency hosts the annual summit and sets the agenda.</li> <li>• The host country may also organize various meetings and events throughout the year as part of its presidency.</li> </ul>

### Closing thoughts

- G20 Summit is a prominent annual gathering of leaders from the world's major economies to discuss and coordinate on a wide range of global issues. It plays a vital role in shaping economic and policy responses to global challenges and fostering international cooperation.



## 2.7 PARTNERSHIP FOR GLOBAL INFRASTRUCTURE INVESTMENT (PGII)

### Context

- The new project is a part of the Partnership for Global Infrastructure Investment (PGII) – a West-led initiative for funding infrastructure projects across the world, seen as a counter to China’s Belt and Road Initiative (BRI).



### Introduction

- The infrastructure plan was first announced in June 2021 during the G7 (or Group of Seven) summit in the UK.
- The G7 countries include the United Kingdom, the United States, Canada, France, Germany, Italy, Japan, and the European Union (EU). US President Joe Biden had called it the Build Back Better World (B3W) framework. However, it did not register much progress.
- In 2022, during the G7 summit in Germany, the PGII was officially launched as a joint initiative to help fund infrastructure projects in developing countries through public and private investments.
- America said, “Collectively, we aim to mobilize nearly \$600 billion from the G7 by 2027 to invest in critical infrastructure that improves lives and delivers real gains for all of our people.”
- Essentially, in response to the infrastructure projects being undertaken and funded by China under the Belt and Road Initiative (BRI) at a global level, the G7 decided to present their alternative mechanism for it.
- The stated purpose of both the PGII and the BRI is to help secure funding for countries to build critical infrastructure such as roads, ports, bridges, communication setups, etc. to enhance global trade and cooperation.

### What was the need for an alternative?

- China began the Belt and Road Initiative in 2013 under its President Xi Jinping. It aims to revive the ancient trade routes crossing to and from China—from Rome in Europe to East Asia.
- Under this, the Chinese government helped in providing loans for infrastructure projects to various countries, and in many cases, Chinese companies were awarded contracts for carrying out the work. This helped China mark its footprints at a global level.
- However, China was criticized in the West and by some other countries for providing unsustainable debts to countries that would be unable to repay them.

According to a 2019 World Bank report, among the 43 corridor economies for which detailed data was available, 12 could face a situation where debts were not sustainable, which could lead to public assets being handed over to foreign contractors or China itself.

- The report added that if issues of environmental degradation, high debts, and corruption are successfully countered and the BRI is fully implemented to its potential, it could **increase trade between 1.7 and 6.2 percent for the world, increasing global real income by 0.7 to 2.9 percent**. China has claimed the BRI has made economic gains and helped in job creation.
- India, however, opposed the BRI as it included the China-Pakistan Economic Corridor, which connected Kashgar in China with the Gwadar port in Pakistan via Pakistan-occupied Kashmir. **India said in 2021:**

*“Any serious connectivity initiative must be transparent and conform to the most basic principle of respect for sovereignty and territorial integrity.”*

### What has been announced so far as part of PGII initiatives?

- **IMEC is a further step in the PGII process** that was “launched last year by President von der Leyen, President Biden and the President of Indonesia Joko Widodo during the G20 summit in Bali.”
- It **announced several projects in Indonesia**, among other countries, on clean energy, telecommunications, etc.
- **India was also a part of this meet**, where one of the outcomes for funding was investments in its health infrastructure.
- **The US government’s agency, its International Development Finance Corporation (DFC)** would invest over \$15 million in India’s health infrastructure, *“including support for the expansion of a chain of eye clinics for conducting corrective surgery for underserved individuals, and an India-based social enterprise that manufactures safe and affordable women’s hygiene products for underserved women in non-metro areas.”*
- **The EU, through its Global Gateway program**, has now said it will *“activate 300 billion of investments in critical connectivity projects during the period 2021-2027, half of which is destined for Africa.”*
- **Over 90 projects have been identified in Africa**, Latin America and the Caribbean, Asia and the Pacific, and in the Western Balkans, it added.

### Why is the PGII project special?

- **There are three main reasons for developing the corridor.**
- First, it will **increase prosperity among the countries** involved through increased flows of energy and digital communications.
- Second, the **project will help address the lack of infrastructure** needed for development in low- and middle-income countries.
- Third, it **will help in ending the ongoing unrest** and insecurity in the Middle East.

### **Closing thoughts**

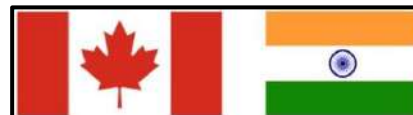
- India must focus on debating the specific terms of individual projects rather than having to say “Yes” or “No” to the PGII or BRI as a whole.
- India should also focus on modernizing connectivity across its land and maritime frontiers with its neighbours in the Subcontinent, South East Asia and the Gulf by completing our projects in these regions.



## 2.8 INDIA-CANADA BILATERAL TIES

### Context

- Recently, the Canadian government expelled a senior Indian diplomat accusing India for playing a role in the assassination of a prominent Sikh Canadian leader, Hardeep Singh Nijjar in Canada.



### Details

- Canada's prime minister, Justin Trudeau**, announced that there was "credible" information linking Indian government agents to the murder of a Sikh separatist leader in British Columbia.
- The announcement marks a significant worsening of bilateral ties.
- India's Punjab state** – which is about 58% Sikh and 39% Hindu – was rocked by a violent Khalistan separatist movement in the 1980s and early 1990s, in which thousands of people died.
- Today, that movement's most vocal advocates** are primarily among the Punjabi overseas diaspora.
- Recently, Hardeep Singh Nijjar was shot dead outside a Sikh temple in Surrey, British Columbia.
- Nijjar had campaigned for an independent **Sikh nation – known as Khalistan** – to be carved out of India's Punjab state.
- He was wanted by Indian authorities and had been designated as a "**terrorist**" in July 2020.
- This incident led to speculation on social media about whether the Indian intelligence agencies were linked to these deaths abroad, including on Canadian soil.

### About India-Canada Bilateral Ties:

- Diplomatic Relations:**
  - India and Canada established diplomatic relations shortly after India gained independence in 1947. Both countries maintain embassies in each **other's capitals and regularly engage in high-level diplomatic dialogues.**
- Trade and Economic Relations:**
  - Trade Volume:** India and Canada have seen an increase in **bilateral trade in recent years.** Key trade items include minerals and metals, agricultural products, machinery, and textiles.
  - Investment:** Canadian companies have invested in various sectors in India, including **information technology, natural resources, infrastructure, and clean energy.** Similarly, Indian companies have also made investments in Canada.
- Energy Cooperation:**
  - Canada is known for its vast **natural resources, including energy resources.** Energy cooperation between the two countries has grown, with India importing Canadian oil and exploring opportunities for collaboration in clean energy technologies.
- Education and Research Collaboration:**
  - Educational and research ties have expanded, with Indian students pursuing higher education in Canada and universities from both countries **engaging in academic collaborations** and research partnerships.
- Diaspora Connections:**
  - Canada is home to a significant Indian diaspora, including people of Indian origin and Indian expatriates. This community plays an essential role in **strengthening people-to-people ties and cultural exchanges** between the two countries.
- Multilateral Engagement:**
  - Both India and Canada are active participants in various international organizations and forums, including the United Nations. They often collaborate on global issues such as **climate change, counterterrorism, and sustainable development.**
- Cultural Exchanges:**

- Cultural exchanges, including music, dance, and art, have contributed to a deeper understanding of each other's cultures. **Festivals and cultural events provide opportunities** for people from both countries to connect and learn from each other.
- **Science and Technology:**
  - India and Canada have also cooperated in science and **technology fields, fostering research and innovation** collaborations in areas such as space exploration, biotechnology, and information technology.

#### Deterioration in Ties:

- India-Canada ties **have deteriorated rapidly in recent years.**
- The Canadian government is **soft on Khalistani supporters in Canada and working against Indian interests.**
- Indian diplomacy has **been consistently raising the issue of Hindu temples in Canada being allegedly vandalized and defaced by Khalistani groups.**
- Khalistani leaders and outfits are also **given free rein by Canadian authorities,** including by letting them **organize so-called referendums on seeking an independent state for Indian Sikhs.**
- Khalistan elements have incited violence against Indian diplomats, including putting the officials' photos and other details on posters, and **targeted Indian diplomatic facilities several times in recent years.**

#### **Concluding Remarks**

- The Government of India has vigorously communicated its concerns regarding **Khalistani activities** to the highest political authority in these countries.
- India's constructive engagement with the Western governments did bear some positive results. However, more needs to be done.
- The Khalistanis are intensifying their activities abroad, and given that the host countries seem to be looking the other way, India needs to redouble its efforts to prevent the reoccurrence of such incidents.
- It is essential for the Government to effectively convey to the **host countries that they cannot simultaneously have good relations with India while allowing anti-India separatist movements on their soil.**
- At the same time, **India will also have to build a constructive and sustained engagement with the Sikh diaspora, dispel the misinformation propagated by the Khalistani separatists** and **showcase the sense of contentment prevailing in Punjab.**

## 2.9 CHANGING DYNAMICS OF GLOBAL SOUTH

### **Context**

- Earlier in 2023, the Prime Minister of India organised a virtual summit on the "Voice of the Global South", involving approximately 125 countries.

### **Details**

- The objective of this summit was to solicit the opinions and input of countries from the Global South in order to determine the priorities for the region.
- After decades of being ignored, it would seem that the Global South has come into vogue. At the G-20 summit in Delhi this month, Prime Minister Narendra Modi said it was the Global South's priorities that drove India's Presidency, and with developing countries Indonesia, India, Brazil and South Africa as consecutive hosts of the grouping, the direction seems set.

### **About Global South**

The term "Global South" is often used to highlight the historical legacy of colonialism and the economic disparities between the formerly colonised nations and the developed Western nations.

### About the changing dynamics of the Global South

- **Economic Growth and Development:**

- Several countries in the Global South, particularly in Asia, have experienced rapid economic growth and development. China, India, Brazil, and several Southeast Asian nations have emerged as economic powerhouses.
- The rise of these economies has contributed to a rebalancing of global economic power, with the Global South playing an increasingly significant role in the global economy.

- **Trade and Investment:**

- Global South countries have become more integrated into the global trading system. They have increased trade with each other and with countries in the Global North.
- Investments from Global South countries, particularly from China, have been expanding globally, with investments in infrastructure, energy, and technology projects in various regions.

- **South-South Cooperation:**

- South-South cooperation refers to collaborations and partnerships among Global South countries. These collaborations extend to trade, technology transfer, development aid, and joint projects.
- Organizations like the BRICS (Brazil, Russia, India, China, South Africa) and the Forum on China-Africa Cooperation (FOCAC) promote South-South cooperation.

- **Geopolitical Influence:**

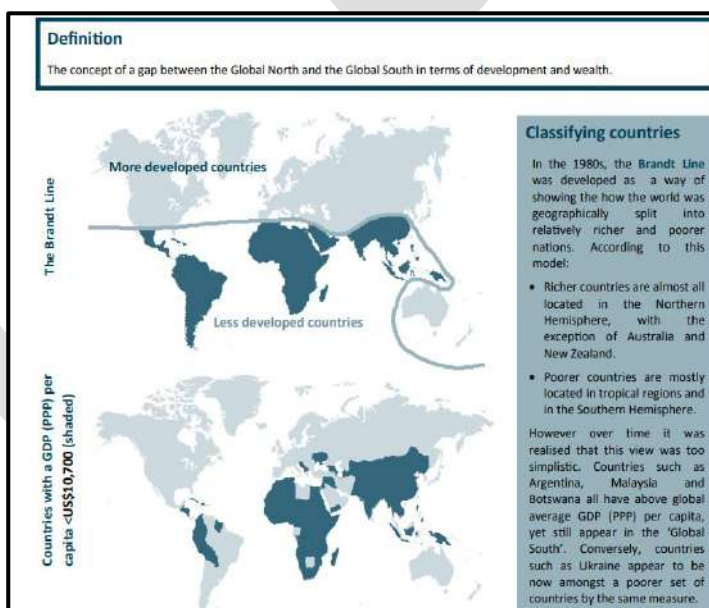
- Some Global South countries have increased their geopolitical influence. China's Belt and Road Initiative (BRI) is an example of a global infrastructure and economic development project that has geopolitical implications.
- India, Brazil, and South Africa, among others, have played important roles in international forums like the G20 and BRICS, contributing to the shaping of global governance.

- **Technological Advancements:**

- Technological advancements and the digital revolution have provided Global South countries with opportunities for innovation, economic growth, and social development.
- Mobile technology and internet connectivity have expanded rapidly in many Global South regions, creating new avenues for economic inclusion and access to information.

- **Challenges and Inequalities:**

- Despite progress, significant challenges persist in the Global South, including poverty, inequality, political instability, and conflicts. These challenges continue to affect many countries' efforts to achieve sustainable development.
- Climate change poses a particularly pressing challenge, as many Global South nations are disproportionately impacted by rising sea levels, extreme weather events, and other environmental challenges.



- **Health and Pandemic Response:**
  - The COVID-19 pandemic highlighted the need for global cooperation in responding to health crises. Global South countries have been at the forefront of vaccine production and distribution efforts.
  - The pandemic also underscored the importance of investing in healthcare infrastructure and strengthening healthcare systems in Global South nations.
- **Climate Action:**
  - Many Global South countries are actively engaged in international climate negotiations and efforts to address climate change. They seek support for adaptation and mitigation measures while advocating for climate justice.
  - Renewable energy projects and sustainability initiatives are being pursued in various Global South regions.
- **Humanitarian and Migration Challenges:**
  - The Global South faces humanitarian challenges, including displacement due to conflicts and natural disasters. Many countries in the Global South host large refugee populations.
  - Migration from the Global South to the Global North continues to be a significant global issue, with economic, social, and political implications.

### Closing thoughts

- As the world navigates through complex challenges and opportunities, the Global South's influence continues to evolve, and its demands for equitable representation and a meaningful voice in global governance remain at the forefront.
- The global community is witnessing a rebalancing of power dynamics, with the Global South playing an increasingly vital role in shaping the future of international politics and cooperation.



## 2.10 CLIMATE AMBITION SUMMIT 2023

### Context

- The Climate Ambition Summit (CAS) in New York, as part of the United Nations General Assembly, was marked by the absence of major economies whose actions significantly influence the future of global emissions.



### Details

- The United Nations Climate Ambition Summit (CAS) held in United Nations Headquarters, New York on 20th September 2023, aimed to accelerate climate action as a prelude to the 28th Conference of Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC).
- However, China, the US and India, who collectively account for about 42% of global greenhouse gas emissions and are the top three emitters in that order were all absent from the CAS.

### About Climate Ambition Summit (CAS):

- The Climate Ambition Summit held at the United Nations Headquarters in New York aimed to address the urgent need for climate action in response to the latest scientific assessment by the Intergovernmental Panel on Climate Change (IPCC).
- The CAS is designed to showcase “first mover and doer” leaders from government, business, finance, local authorities, and civil society who came with credible actions, policies and plans – and not just pledges – to accelerate the decarbonization of the global economy and deliver climate justice.

### Participants:

- The summit aimed to accelerate climate action by bringing together governments, businesses, financial institutions, local authorities, and civil society.
- It recognized the need for collective global will to transition to a renewable-energy-based, climate-resilient global economy.

*The central aim of the CAS is to uphold the Paris Agreement's 1.5°C temperature limit, which seeks to prevent severe climate consequences by capping global warming at 1.5°C above pre-industrial levels.*

### Highlights of the Summit:

- **Global Emissions Significance:**
  - China, the U.S., and India are among the top three emitters of greenhouse gases globally, collectively responsible for approximately 42% of global emissions. Their actions and commitments are crucial in the efforts to combat climate change.
- **Purpose of the Summit:**
  - The CAS was organized by the United Nations to showcase leaders who have credible actions, policies, and plans to address climate change and to uphold the goal of limiting global warming to 1.5 degrees Celsius as outlined in the Paris Agreement.
- **Limited Participation:**
  - Despite the summit's importance, only representatives from 34 states and seven institutions were given speaking slots on the day of the event. Notably, India's neighboring countries like Sri Lanka, Nepal, and Pakistan were included as speakers, along with other emerging economies.
- **Criteria for Participation:**
  - Countries seeking speaking slots at the summit were expected to present updated pre-2030 Nationally Determined Contributions (NDCs), net-zero targets, energy transition plans, fossil fuel phase-out plans, renewable energy targets, Green Climate Fund pledges, and adaptation and resilience plans. This indicates a high bar for participation.
- **Future Commitments:**
  - All main emitters, including the G-20 nations, were encouraged to commit to presenting more ambitious economy-wide NDCs with absolute emissions cuts and covering all greenhouse gases by 2025.
- **India's Climate Pledges:**
  - India updated its climate pledges in 2022, aiming to reduce emissions intensity by 45% from 2005 levels by 2030. The government also committed to sourcing 50% of its electric power from renewable, non-fossil fuel sources and increasing carbon sinks through afforestation.

### Concluding Remarks

- The absence of these major emitters from the summit reflects the complexities and challenges in achieving a coordinated global response to climate change. It underscores the importance of ongoing diplomatic



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efforts to engage these nations in addressing the climate crisis and aligning their actions with the Paris Agreement's goals.

- Climate Ambition Summit was a critical political milestone in demonstrating global commitment to addressing the climate crisis. It aimed to catalyze ambitious action across multiple sectors, promote credibility in climate pledges, and drive the implementation of solutions to decarbonize high-emitting sectors and achieve climate justice.

## 2.11 FIVE EYES ALLIANCE

### Context

- The recent allegations by Canadian Prime Minister Justin Trudeau linking the killing of Khalistani leader Hardeep Singh Nijjar on Canadian soil to the Indian government has put the spotlight on the intelligence-sharing alliance 'Five Eyes' (or FVEY), which is believed to have provided the information that "helped" Canada.



### Details

- US Ambassador to Canada David Cohen has now said in an interview with Canada's CTV that it was "shared intelligence among Five Eyes partners" that helped "lead" Canada to the claims that PM Trudeau made.
- "Five Eyes" refers to an intelligence-sharing alliance of the United States, United Kingdom, Australia, Canada and New Zealand.
- US Secretary of State Antony Blinken had said on Friday the US is "deeply concerned" about the allegations and Washington was "closely coordinating" with Ottawa on the issue and wants to see "accountability" in the case.
- Other Five Eyes countries, such as the UK and Australia, have also said they are monitoring the situation and communicating with Indian officials.

### About Five Eyes Alliance

#### About

- The Five Eyes, founded in 1941, is an intelligence alliance comprising nations including Australia, Canada, New Zealand, the United Kingdom, and the US.

#### Origin

- The origins of the FVEY can be traced to informal secret meetings during WW II between British and American code-breakers, which started before the US formally entered the war, followed by the Allies' 1941 Atlantic Charter that established their vision of the post-war world.

#### Features

- The Five Eyes agreement parties are "diverse societies, governed by rule of law and robust human rights and are bonded by a common language.
- These characteristics **aid the partners in sharing information with one another to protect their shared national interests.**

#### Evolution

- Following its origin, **the agency later enlarged its core group to 'Nine Eyes' and 14 Eyes alliances as well, encompassing more countries as security partners.**
- The 'Nine Eyes' group expands to cover the Netherlands, Denmark, France and Norway, whereas the 14 Eyes bloc further includes Belgium, Italy, Germany, Spain, and Sweden.

### Why was the Five Eyes Alliance formed?

- According to the Canadian government's website, "These partner countries share a broad range of intelligence with one another in one of the world's most unified multilateral arrangements.
- The Five Eyes agreement stands out from other arrangements because the parties are diverse societies, governed by rule of law and robust human rights and are bonded by a common language.
  - These characteristics aid the partners in sharing information with one another to protect their shared national interests."
- Holzer traced back the alliance's origins to the Second World War. The UK and the US decided to share intelligence after successfully breaking German and Japanese codes, respectively.
- In 1943, the Britain-USA (BRUSA) agreement laid the foundations for what would become the UK-USA (UKUSA) agreement, after UK computer scientist Alan Turing's visit to Washington and several bilateral visits between the two countries' officials.
- BRUSA was signed between the US War Department and the UK's intelligence and security agency Government Code and Cypher School (GC&CS), to "share intelligence information between the two countries to support US forces in Europe, exchange personnel and develop joint regulations for the handling and distribution of highly sensitive material.
- Following this, the UKUSA was signed in 1946. Canada joined it in 1949, and New Zealand and Australia did so in 1956, forming the alliance. The Agreement was not officially acknowledged though its existence was known about from the 1980s. But in 2010, the UKUSA agreement files were released.

### How does the Five Eyes Alliance work, exactly?

- In recent years, common interests, such as balancing the rise of China, have led to a closer alignment among the Five Eyes countries. Some have attributed their closeness to a common language and mutual trust built over decades of association.
- In 2016, the Five Eyes Intelligence Oversight and Review Council came into being. It includes the non-political intelligence oversight, review, and security entities of the Five Eyes countries. They exchange views of mutual interest, compare best practices, hold conference calls throughout the year and gather in person annually.
- Since 2021, New Zealand has stayed away from issuing an outright condemnation of Chinese actions regarding Hong Kong's political systems and its treatment of the Uighur minority in the Xinjiang region, unlike the other four countries.
- A major reason for this is the deep trade ties between them, with China being the biggest market for New Zealand's exports.

### How could Five Eyes play a role in the current India-Canada issue?

- Countries like the US, the UK and Australia especially are seen as close to India. They also have significant Indian and Indian-origin populations within them, similar to Canada.
- They have also seen some instances of pro-Khalistan activities in the last few years. But due to their historical closeness to Canada and the alliance on one hand, and India, an emerging global power on the other, outright support for India or Canada is unlikely.
- Given the state of ties, these countries, particularly the US, could play a mediating role in the issue once they have clear intelligence and information on the matter.



## 2.12 SOUTH CHINA SEA DISPUTE

### Context

- A fresh controversy broke out recently after China installed a barricade near the South China Sea's Scarborough Shoal. Both countries have been embroiled in a tussle over the shoal's territorial claim since 2012.

### Details

- In 1947, the country, under the rule of the nationalist Kuomintang party, issued a map with the so-called "nine-dash line" (for a detailed explanation, scroll down).
- The line essentially encircles Beijing's claimed waters and islands of the South China Sea – as much as 90% of the sea has been claimed by China.
- The line continued to appear in the official maps even after the Chinese Communist Party (CCP) came to power.
- In the past few years, the country has also tried to stop other nations from conducting any military or economic operation without its consent, saying the sea falls under its Exclusive Economic Zone (EEZ).
- China's sweeping claims, however, have been widely contested by other countries. In response, China has physically increased the size of islands or created new islands altogether in the sea, according to the Council on Foreign Relations (CFR).

### What is the South China Sea dispute?

- The South China Sea is situated just south of the Chinese mainland and is bordered by the countries of Brunei, China, Indonesia, Malaysia, Philippines, Taiwan and Vietnam.
- The countries have bickered over territorial control in the sea for centuries, but in recent years tensions have soared to new heights.
- The South China Sea is one of the most strategically critical maritime areas (more on this later) and China eyes its control to assert more power over the region.



### What's the importance of the South China Sea?

- **Geopolitical Location:**
  - **Strategic Location:** The South China Sea is strategically located, serving as a crucial maritime gateway connecting the Pacific Ocean to the Indian Ocean. It is a key chokepoint for international shipping routes.
  - **Access to Key Waterways:** The sea links major shipping lanes, facilitating the movement of goods, energy resources, and commodities between East Asia, the Middle East, Europe, and Africa.
- **Economic Importance:**
  - **Trade Routes:** The South China Sea is one of the busiest and most important maritime trade routes globally. A significant portion of the world's trade, including oil and natural gas, passes through these waters.
  - **Fisheries:** The sea is rich in marine resources, including fisheries. It supports a substantial fishing industry that provides livelihoods for millions of people in the surrounding countries.

- **Oil and Gas Reserves:** The South China Sea is believed to have significant oil and natural gas reserves. Exploration and exploitation of these resources contribute to the energy security of the countries bordering the sea.
- **Military Significance:**
  - **Strategic Military Presence:** Control over certain islands and features in the South China Sea provides countries with strategic military advantages, allowing them to project power and influence over the region.
  - **Naval Presence:** Countries with territorial claims maintain a military presence in the region to safeguard their interests, leading to increased naval activities and potential for regional military escalation.

### Concerns related to the South China Sea

- **Territorial Disputes:**
  - **Strategic Islands:** Numerous islands, reefs, and atolls in the South China Sea are subject to territorial disputes among neighboring countries. These disputes involve competing claims over sovereignty, leading to geopolitical tensions.
  - **Spratly Islands and Parcel Islands:** The Spratly Islands and Parcel Islands are particularly contentious, with multiple claimants, including China, Vietnam, the Philippines, and others.
  - **Exclusive Economic Zones (EEZs):** Countries around the South China Sea are seeking to assert their maritime rights and Exclusive Economic Zones, leading to complex legal and political dynamics.
- **Global Security Concerns:**
  - **Freedom of Navigation:** The South China Sea is a focal point for discussions on freedom of navigation. The international community, including major maritime nations, emphasizes the importance of maintaining open and secure sea lanes for global trade.
  - **International Law:** Disputes in the South China Sea involve complex legal questions regarding the interpretation and application of international maritime laws, including the United Nations Convention on the Law of the Sea (UNCLOS).
- **Environmental Concerns:**
  - **Marine Ecosystem:** Environmental issues such as overfishing, coral reef degradation, and pollution are significant concerns due to the high economic dependence on the sea's resources.
  - **Biodiversity:** The South China Sea is home to diverse marine life, and the preservation of its biodiversity is a shared concern among nations.

### Closing thoughts

- The South China Sea's importance lies in its role as a critical maritime crossroads, a key economic zone, and a geopolitical hotspot with complex territorial and security dynamics. The region's significance extends beyond its immediate neighbors, impacting global trade, security, and diplomatic relations.



## 2.13 SHORT ARTICLES

### Financial Action Task Force

#### [Context](#)

- The Financial Action Task Force (FATF) is deliberating on a set of binding rules to bring fugitive economic offenders across countries to justice.

#### [Details](#)

- The deliberations of which India and Indian investigation agencies, so also other G20 countries, are a part, stem from the 2018 initiative India took to bring the issue of grave offences by fugitive economic offenders to the discussion table.
- **India remains particularly vulnerable to economic offences.** Since 2018, courts here have declared 10 fugitive economic offenders, including liquor baron Vijay Mallya and diamond merchant Nirav Modi, who, having taken refuge abroad, continue to evade extradition on account of legal issues.
- Under the ongoing Indian G20 presidency, **significant progress had been made on this aspect of anti-corruption** by way of negotiated principles to which all G20 partners have agreed.
- **The FATF is now deliberating on common anti-corruption parameters** which can be operable across countries regardless of variations in their domestic laws. FATF rules, once they are adopted, will be binding. The matter is under discussion,” official sources said. **G20 commitments are non-binding.**

### About FATF

<b>About</b>	<ul style="list-style-type: none"> <li>• It is an <b>inter-governmental body</b> that is now in its 30th year, working to “set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system”.</li> </ul>
<b>Meetings</b>	<ul style="list-style-type: none"> <li>• The FATF holds three Plenary meetings in the course of each of its 12-month rotating presidencies.</li> </ul>
<b>Membership</b>	<ul style="list-style-type: none"> <li>• It currently has <b>39 members, including two regional organisations</b> – the European Commission and the Gulf Cooperation Council.</li> <li>• India is a member of the FATF consultations and its Asia Pacific Group.</li> </ul>
<b>Established</b>	<ul style="list-style-type: none"> <li>• It was established at the <b>G7 Summit of 1989 in Paris to address</b> loopholes in the global financial system after member countries raised concerns about growing money laundering activities.</li> <li>• <b>In the aftermath of the 9/11 terror attack on the U.S., FATF also added terror financing</b> as a main focus area. This was later broadened to include restricting the funding of weapons of mass destruction.</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>• <b>The FATF sets standards or recommendations for countries</b> to achieve in order to plug the holes in their financial systems and make them less vulnerable to illegal financial activities.</li> <li>• It conducts <b>regular peer-reviewed evaluations called Mutual Evaluations (ME)</b> of countries to check their performance on standards prescribed by it. The reviews are carried out by <b>FATF and FATF-Style Regional Bodies (FSRBs)</b>, which then release Mutual Evaluation Reports (MERs).</li> <li>• For the countries that don't perform well on certain standards, time-bound action plans are drawn up.</li> <li>• <b>Recommendations for countries range from assessing</b> risks of crimes to setting up legislative, investigative and judicial mechanisms to pursue cases of money laundering and terror funding.</li> </ul>

## East Asia Summit (EAS)

### Context

- Prime Minister attended the 20th ASEAN-India Summit and the 18th East Asia Summit (EAS) in Jakarta on 7 September 2023.

### Details:

- At the ASEAN-India Summit, Prime Minister held extensive discussions with ASEAN partners on further strengthening of ASEAN-India Comprehensive Strategic Partnership and charting its future course.



- Prime Minister reaffirmed ASEAN centrality in the Indo-Pacific and highlighted the synergies between India's Indo-Pacific Ocean's Initiative (IPOI) and ASEAN's Outlook on the Indo-Pacific (AOIP).
- He also emphasized the need to complete the review of ASEAN-India FTA (AITIGA) in a time bound manner.

**About East Asia Summit (EAS):**

<b>About</b>	<ul style="list-style-type: none"> <li>• <b>The East Asia Summit (EAS) is a regional forum comprising 18 member countries</b> from the Asia-Pacific region. It serves as a platform for leaders to engage in discussions on political, economic, security, and strategic issues of common interest.</li> </ul>
<b>Member countries</b>	<ul style="list-style-type: none"> <li>• The 10 ASEAN member states: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.</li> <li>• Plus, eight other countries: Australia, China, India, Japan, New Zealand, South Korea, Russia, and the United States.</li> </ul>
<b>Aims and objectives</b>	<ul style="list-style-type: none"> <li>• <b>Political and Security Issues:</b> The EAS discusses political and security matters, including regional conflicts, maritime security, counter-terrorism, non-proliferation, and disaster management.</li> <li>• <b>Economic Cooperation:</b> Economic topics such as trade, investment, financial stability, and sustainable development are also addressed.</li> <li>• <b>Social and Cultural Ties:</b> The summit aims to foster social and cultural ties through initiatives related to education, public health, and people-to-people exchanges.</li> </ul>
<b>Leadership format</b>	<ul style="list-style-type: none"> <li>• The EAS is held annually at the leaders' level, bringing together heads of state or government from member countries.</li> <li>• The host country of the summit rotates among the participating nation.</li> </ul>

**Eastern Maritime Corridor (EMC)**

**Context**

- India and Russia are considering exploring the possibility of using alternative transport routes, including the Northern Sea Route and Eastern Maritime Corridor (EMC), to enhance maritime cooperation.

**Details**

- India is keen to collaborate on a partnership regarding the development of the NSR recognising the potential it holds for enhanced connectivity and trade.
- In addition to the exploration of new trade routes, the two nations agreed to train Indian seafarers in polar and arctic waters at the Russian Maritime Training Institute. The institute, as per the Reuters report, offers advanced simulator facilities
- Furthermore, both India and Russia expressed their commitment to strengthening their strategic cooperation in various sectors, emphasizing their enduring partnership.
- Despite the more than year-long, ongoing war Russia has waged on its neighbour Ukraine, India has maintained a close relationship with Russia.
- As per reports, trade between the two nations has reached record-high levels, and Indian imports of Russian oil have contributed significantly to this increase.

**About EMC**

<b>About</b>	<ul style="list-style-type: none"> <li>• It is a proposed sea route between the Indian port of Chennai and the Russian port of Vladivostok.</li> </ul>
<b>Purpose</b>	<ul style="list-style-type: none"> <li>• The corridor is estimated to bring down transportation time between Indian and Russian ports in the Far East Region by up to 40 percent (24 days from the current 40 days).</li> </ul>

<b>Economy</b>	<ul style="list-style-type: none"> <li>The present trade route between Mumbai, India, and St. Petersburg, Russia, covers a distance of 8,675 nautical miles.</li> <li>The EMC will cover a distance of about 5,600 nautical miles, which is significantly shorter than the current route via the Suez Canal.</li> </ul>
<b>Significance</b>	<ul style="list-style-type: none"> <li>Once complete, EMC will take 24 days, down from presently over 40 days, to transport goods from India to Far East Russia.</li> <li>For India, it will provide a shorter and more efficient route to access the markets of the Far East, such as China and Japan.</li> </ul>

## India-Middle East-Europe Economic Corridor

### Context

- During the recently concluded G20 summit, India, the U.S., UAE, EU, France, Italy and Germany signed a memorandum of understanding to establish the India-Middle East-Europe Economic Corridor (IMEC), on similar lines to China's BRI.

### Details:

- The India Middle East Europe Economic Corridor (IMEC) is a transnational rail and shipping route spread across two continents, which the US says is expected to stimulate economic development through improved connectivity and economic integration between Asia, Arabian Gulf and Europe.
- For the project, a MoU has been signed between Saudi Arabia, European Union, India, the UAE, France, Germany, Italy and the US.
- In terms of objectives, both the mega transnational projects are similar. However, China's New Silk Route is larger in terms of scale.
- Announced in 2013, China has signed BRI cooperation documents with more than 150 countries and over 30 international organisations, galvanising nearly \$1 trillion and creating over 3,000 projects. Even some of the IMEC MoU signatories are also part of BRI, such as Italy, Saudi Arabia and the UAE. Though Italy has now decided to pull out of it.



### About India-Middle East-Europe Economic corridor:

#### About

- The project is part of the Partnership for Rail and Shipping Corridors Global Infrastructure Investment (PGII).
- This project aims to strengthen the infrastructure in developing countries.
- In this project, G-7 countries will come together and make a collaborative effort.

#### Membership

- Apart from India, the other participants will include Saudi Arabia, UAE, France, Germany, Italy, USA, and the European Union.

#### Corridors

- The proposed corridor will comprise two separate corridors, the Eastern Corridor, and the Northern Corridor.

- The former will connect India to the Arabian Gulf and the latter will connect the Arabian Gulf to Europe.

### **Role**

- This corridor will connect Europe, the Middle East, and Asia through railways and the sea.
- The key objectives of this ambitious project are to connect commercial hubs, support the development and export of clean energy, and expand undersea cables, energy grids, and telecommunication lines.

### **Benefits for India**

- The India-Middle East-Europe Economic Corridor will help in promoting food security and supply chain between developing countries. According to the MoU, this corridor will include an East Corridor connecting India to the Arabian Gulf and a North Corridor connecting the Arabian Gulf to Europe.
- The project will feature a railway network that will complement the existing sea and road routes.

## **Global Biofuels Alliance**

### **Context**

- Prime Minister Narendra Modi on Saturday announced the launch of the Global Biofuels Alliance.

### **Details**

- Brazil, India, and the United States, as leading biofuel producers and consumers, will work together during the next few months towards the development of a Global Biofuels Alliance along with other interested countries.
- This Alliance will be aimed at facilitating cooperation and intensifying the use of sustainable biofuels, including in the transportation sector.
- It will place emphasis on strengthening markets, facilitating global biofuels trade, development of concrete policy lesson-sharing and provision of technical support for national biofuels programs worldwide. It will also emphasize the already implemented best practices and success cases.
- The Alliance shall work in collaboration with and complement the relevant existing regional and international agencies as well as initiatives in the bioenergy, bioeconomy, and energy transition fields more broadly, including the Clean Energy Ministerial Biofuture Platform, the Mission Innovation Bioenergy initiatives, and the Global Bioenergy Partnership (GBEP).

### **About Global Biofuels Alliance:**

<b>About</b>	<ul style="list-style-type: none"> <li>• The Global Biofuel Alliance (GBA) is an initiative by India as the G20 Chair. The Alliance intends to expedite the global uptake of biofuels through facilitating technology advancements, intensifying utilization of sustainable biofuels, shaping robust standard setting and certification through the participation of a wide spectrum of stakeholders.</li> </ul>
<b>Purpose</b>	<ul style="list-style-type: none"> <li>• The alliance will act as a central repository of knowledge and an expert hub. GBA aims to serve as a catalytic platform, fostering global collaboration for the advancement and widespread adoption of biofuels.</li> </ul>
<b>Membership</b>	<ul style="list-style-type: none"> <li>• <b>Nineteen countries and 12 international organisations</b> have joined the GBA. Among them are Brazil, the US, Canada, Italy, South Africa, Argentina and India. Non-G20 countries including Bangladesh, Singapore, and Iceland have agreed to become a part of the alliance.</li> <li>• International organisations such as <b>the World Bank, the World Economic Forum, and the International Energy Agency</b> have also joined.</li> <li>• <b>Three members—Brazil, India and the US</b>—contribute about 85 percent of the world’s biofuel production. The US contributes 52 percent, while Brazil and India account for 30 percent and 3 percent, respectively.</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• The alliance will support the development of biofuels by offering capacity-building exercises across the value chain, provide technical support for national programmes</li> </ul>

	<p>and promote sharing of policy lessons.</p> <ul style="list-style-type: none"> <li>The GBA will facilitate mobilising a virtual marketplace to assist industries, countries, ecosystem players and key stakeholders in mapping demand and supply, as well as connecting technology providers to users. The alliance will act as a central repository of knowledge and an expert hub.</li> </ul>
<b>Significance</b>	<ul style="list-style-type: none"> <li>The launch of the Global Biofuels Alliance marks a watershed moment in our quest for sustainability and clean energy.</li> <li>The G20 Leaders' Declaration said that the member countries "recognize the importance of sustainable biofuels in our zero and low- emission development strategies, and note the setting up of a Global Biofuels Alliance".</li> </ul>

## India-Russia Maritime Cooperation

### Context

- India and Russia will explore the possibility of using new transport corridors such as the Northern Sea Route and Eastern Maritime Corridor between Vladivostok and Chennai to widen maritime cooperation.

### Details

- New Delhi and Moscow have enjoyed a close relationship for decades and India has refused to condemn Russia for the war it has waged on Ukraine since last year.
- Russian-Indian trade has instead risen to a record high, driven largely by a ramping-up of Indian imports of Russian oil.
- The two countries, at the same meeting on Wednesday, also agreed to train Indian seafarers in polar and arctic waters at the Russian Maritime Training Institute, which is equipped with simulator facilities.

### About India-Russia Relations:

#### About

- The diplomatic relationship between India and Russia is characterized by a **long-standing history of friendship and cooperation.**
- The foundation of the bilateral ties between the two countries was laid during the Cold War era and has evolved into a **Special and Privileged Strategic Partnership.**

#### Historical ties

- India and Russia have enjoyed close ties since the Soviet era.
- The **Indo-Soviet Treaty of Peace, Friendship, and Cooperation signed in 1971** formed the basis for the bilateral relationship.
- The Soviet Union supported India during significant events such as the Indo-Pak wars and played a **crucial role in India's defense and development.**

#### Economic Collaboration

- Economic cooperation between India and Russia covers various sectors, **including energy, pharmaceuticals, infrastructure, and information technology.**
- Bilateral trade has been growing steadily, with both countries aiming to reach a **target of \$30 billion by 2025.**
- Investment opportunities** and joint ventures are actively pursued to enhance economic ties.

#### International Cooperation

- India and Russia cooperate closely on various **global forums, including the United Nations, BRICS, and the Shanghai Cooperation Organization.**
- Both countries share similar views on major international issues, such as multilateralism, counterterrorism, and the need for a multipolar world order.

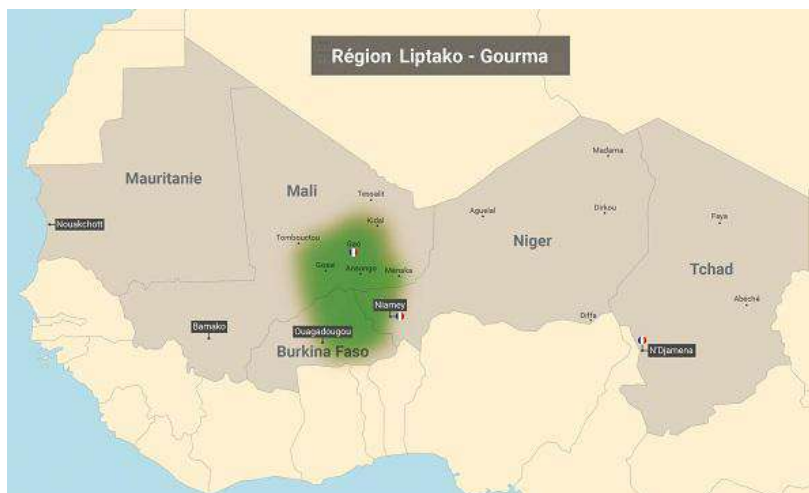
## Liptako-Gourma Charter

### Context

- Recently, the military leaders of Mali, Burkina Faso, and Niger signed a mutual defence pact, the Liptako-Gourma Charter, in Mali's capital, Bamako.

### Details

- Mali, Burkina Faso and Niger have signed a mutual defence pact, as the three Sahel countries aim to help each other against possible threats of armed rebellion or external aggression.
- The charter, known as the Alliance of Sahel States, signed on Saturday binds the signatories to assist one another – including militarily – in the event of an attack on any one of them.



### About Liptako-Gourma Charter

<b>About</b>	<ul style="list-style-type: none"> <li>Liptako-Gourma Charter, also known as the Liptako-Gourma Authority Charter, is an agreement signed by three West African countries: <b>Burkina Faso, Mali, and Niger</b>.</li> <li><b>The charter is named after the Liptako-Gourma region</b>, which encompasses parts of these three countries and is known for its significant security challenges.</li> </ul>
<b>Purpose</b>	<ul style="list-style-type: none"> <li>The primary objective of the Liptako-Gourma Charter is to <b>enhance cooperation and coordination</b> among the three signatory countries to address common challenges, primarily in the areas of <b>security, development, and governance</b>.</li> </ul>
<b>Security concerns</b>	<ul style="list-style-type: none"> <li>The Liptako-Gourma region has been plagued by <b>insecurity, including jihadist insurgencies, armed conflict, and terrorism</b>. These security challenges have not only affected the stability of the region but also had spillover effects into neighboring countries.</li> </ul>
<b>Joint efforts</b>	<ul style="list-style-type: none"> <li>The charter emphasizes the need for joint efforts and coordination among Burkina Faso, Mali, and Niger to <b>combat security threats</b>. It promotes <b>intelligence-sharing, joint military operations, and collaborative approaches</b> to counter-terrorism.</li> </ul>
<b>Development and governance</b>	<ul style="list-style-type: none"> <li>While security cooperation is a central focus of the charter, it also recognizes the importance of addressing development and <b>governance issues in the region</b>. This includes efforts to <b>promote economic development, improve infrastructure, and strengthen governance</b> and institutions.</li> </ul>

## Critical Raw Materials Act

### Context

- The Critical Raw Materials Act was approved by a large majority in the European Parliament.

### Details:



- The European Union, the **world's largest trading bloc**, aims to reduce its dependence on China and increase its domestic capacity for critical minerals through this legislation.
- **The Critical Raw Materials Act was voted on in the European Parliament** during the September 11-14, 2023, plenary session in Strasbourg, France. It was approved with a large majority of 515 Members of the European Parliament (MEP) backing it.
- **While 34 MEPs did not vote in favour**, 28 withheld their votes.
- The European Union, the world's largest trading bloc, aims to reduce its dependence on China and increase its domestic capacity for critical minerals through this legislation.
- Metals and critical minerals are crucial for the green transition as they are used to **manufacture solar panels, windmills, and electric car batteries**.

Critical materials have been defined as "raw materials for which there are no viable substitutes with current technologies, which most consumer countries are dependent on importing, and whose supply is dominated by one or a few producers".

### [About EU's Critical Raw Materials Act:](#)

#### Need of the Act

- **The EU was 99 percent dependent on China** for rare earth metals.
- Such dependencies create a high risk of supply disruptions and increase the Union's vulnerability and security risks.
- **To increase economic resilience and reduce the risks involved**, the EU's parliament adopted a text that sets the framework for ensuring a secure and sustainable supply of critical raw materials.
- **Metals and critical minerals are crucial for the green transition** as they are used to manufacture solar panels, windmills, and electric car batteries.

#### Aim of the Regulation

- The European Union aims to reduce its dependence on China and increase its domestic capacity for critical minerals through this legislation.
- **The regulation aims to "diversify the Union's imports of strategic raw materials**.
- **View:** By 2030, the Union's annual consumption of each strategic raw material at any relevant stage of processing can rely on imports from **several third countries**, none of which provide more than 65 percent of the Union's annual consumption.
- **The Union, in addition, aims to increase its processing capacity** along the value chain and be able to produce at least 40 per cent of its annual consumption of strategic raw materials.
- **Inclusive of all intermediate processing steps**, the aim is to manufacture at least 50 per cent annual consumption of strategic raw materials.

#### Rising Demand for Critical Minerals

- The law was proposed earlier in March 2023 as demand for critical raw materials is projected to increase exponentially.
- Moreover, after the **Ukraine war impacted the natural gas supply** to the continent, the Union is trying to learn from its mistake and ensure there is no dearth of supply of critical minerals.
- **Over a five-year period between 2017 and 2022**, the energy sector contributed to a 70 per cent rise in demand for cobalt and a 40 per cent rise in demand for nickel.
- **As a result of the mammoth demand in the energy sector**, the demand for lithium tripled in the same period.

## World Spice Congress

### Context

- The financial capital of Mumbai would play host to the 14th edition of the World Spice Congress (WSC) coinciding with India's G20 Presidency - giving a major thrust on the international trade involving spices.

### Details:

- India, often referred to as the 'Spice Bowl' of the world**, is known for producing high-quality, rare, and medicinal spices. The World Spice Congress (WSC) aims to create new opportunities for the international trade of Indian spices.
- The event is not limited to traders**; it also welcomes policy regulators. Special business sessions have been dedicated to promoting spice trade among G20 countries.
- Participants include policymakers**, regulatory authorities, spice trade associations, government officials, and technical experts from key G20 nations.
- The Spices Board, which comes under the Ministry of Commerce and Industry**, is hosting the three-day global event.
- Since its inception in 1990, the WSC could successfully bring together** the global perspectives in the spice sector to its ambient ranging from the traditional food and beverages to the most advanced examinations for nutraceuticals and nootropics.
- It has been a much sought after and well attended event.** Spices have progressed a great deal from the traditional culinary aspect to astounding utilities in food preservation, food safety, pharmaceuticals and nutraceuticals, cosmetics, natural colorants and much more.

*The theme of the WSC 2023 is VISION 2030: S-P-I-C-E-S, which stands for sustainability, productivity, innovation, collaboration, excellence and safety.*

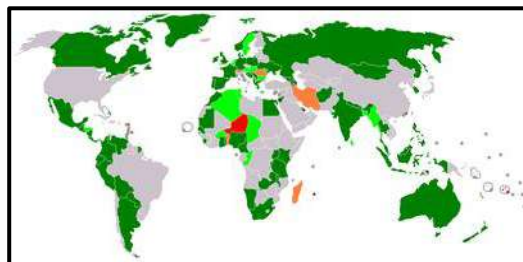
### Role of climatic conditions in spice cultivation in India:

<b>Temperature</b>	<ul style="list-style-type: none"> <li><b>Different spices have specific temperature requirements</b> for growth and development. India's varying temperatures across regions provide suitable conditions for a range of spices.</li> <li><b>For instance, spices like black pepper and cardamom</b> thrive in warmer, tropical climates, while cumin and coriander prefer temperate conditions.</li> </ul>
<b>Humidity</b>	<ul style="list-style-type: none"> <li><b>Many spices require a certain level of humidity to grow well.</b> The warm and humid climate in southern and southwestern India, particularly in states like Kerala, Tamil Nadu, and Karnataka, is ideal for spices like black pepper, cardamom, and cloves.</li> </ul>
<b>Rainfall</b>	<ul style="list-style-type: none"> <li><b>Adequate and well-distributed rainfall</b> is crucial for spice cultivation. Spices like ginger and turmeric, which are cultivated in subtropical regions, benefit from the monsoon rains in states like Karnataka and Tamil Nadu.</li> </ul>
<b>Altitude</b>	<ul style="list-style-type: none"> <li><b>The altitude of a region can impact spice cultivation.</b> For example, the cultivation of high-value spices like saffron is often done at higher altitudes in regions like Jammu and Kashmir, where the climate is cooler.</li> </ul>
<b>Seasonal Variations</b>	<ul style="list-style-type: none"> <li><b>Spices are often harvested at specific times of the year</b> when climatic conditions are most favourable. For example, cardamom harvesting in Kerala is typically done during the monsoon season when moisture levels are high.</li> </ul>

## Asia Pacific Forum

### Context

- A South Asian group of human rights activists has objected to the Asia Pacific Forum of regional national human rights institutions holding its next meeting in India due to the failure of NHRC to meet its mandated duties.



### Details:

- In a statement, Colombo-based South Asians for Human Rights (SAHR), a democratic regional body, said that it was “outraged to learn that the Asia Pacific Forum has allowed the National Human Rights Commission of India (NHRC) to host its next conference in New Delhi on 20 and 21 September, 2023”.
- The group added that the Asia Pacific Forum has announced that Prime Minister Narendra Modi will inaugurate the conference.
- The South Asian group pointed out that India’s NHRC has still been accredited with an ‘A’ grade status till now.
- However, it highlighted that the sub-committee on accreditation (SCA) of the Global Alliance of National Human Rights Institutions (GANHRI) had recommended in March this year that further consideration on its accreditation will be deferred for 12 months.

### About Asia Pacific Forum:

<b>About</b>	<ul style="list-style-type: none"> <li>• The Asia Pacific Forum (APF) is one of four regional networks of National Human Rights Institutions (NHRIs) within the International Coordinating Committee of NHRIs.</li> </ul>
<b>Establishment</b>	<ul style="list-style-type: none"> <li>• The APF was established in 1996 with five members.</li> </ul>
<b>Purpose</b>	<ul style="list-style-type: none"> <li>• A fundamental goal of the APF is to promote the establishment of independent NHRIs in the Asia Pacific region and to support our members to do their work as effectively as possible.</li> </ul>
<b>Members and composition</b>	<ul style="list-style-type: none"> <li>• The APF has 17 full members and eight associate members.</li> <li>• To be admitted as a full member, a National Human Rights Institution must fully comply with the minimum international standards set out in the Paris Principles.</li> <li>• National Human Rights Institutions that partially comply with the Paris Principles are granted associate membership.</li> <li>• The APF may use the accreditation decisions of the Global Alliance of National Human Rights Institutions (GANHRI) to determine APF membership status.</li> </ul>
<b>Functions</b>	<ul style="list-style-type: none"> <li>• Within the rich social and cultural diversity of our membership, APF members work collaboratively to address some of the most complex human rights challenges in the region.</li> </ul>

## International Coffee Organization

### Context

- The World Coffee Conference held in Bengaluru will lead to better standing, branding and pricing for Indian coffees in the global markets.

### Details:

- India’s opportunity to host the 5th World Coffee Conference (WCC), the first in Asia will firmly lodge the country in the international coffee markets, said



Vanúsia Nogueira, Executive Director, International Coffee Organization.

- ICO is a London-based body set up under the aegis of the United Nations to highlight the economic importance of coffee.

#### About International Coffee Organization:

##### About

- The International Coffee Organization (ICO) is an intergovernmental organization that brings together **coffee-exporting and coffee-importing countries to address various issues** related to the global coffee industry.

##### Establishment

- **The ICO was established in 1963** in response to the United Nations Conference on Trade and Development (UNCTAD) decision to establish an organization to deal with coffee-related matters.
- The organization operates under the **International Coffee Agreement (ICA)**, which is an international commodity agreement negotiated and signed by coffee-producing and consuming countries.

##### Membership

- **Country Members:** The ICO's membership includes both coffee-producing and coffee-consuming countries. As of my last knowledge update in September 2021, there were over 80 members, including major coffee-producing nations like Brazil, Vietnam, Colombia, and Ethiopia, as well as consumer countries.
- **Cooperation:** Members cooperate to address challenges and promote sustainable development in the coffee sector.

##### Functions

- **Promoting Collaboration:** The ICO aims to foster international cooperation among its member countries for the development of the coffee sector.
- **Stabilizing Prices:** One of the key functions of the ICO is to work towards the stabilization of coffee prices in the international market. This is often done through the negotiation of international coffee agreements.
- **Market Information:** The organization collects and disseminates market information and statistics related to coffee production, consumption, and trade. This information is valuable for stakeholders in the coffee industry.
- **Sustainable Development:** The ICO is involved in initiatives related to sustainable coffee production, addressing issues such as environmental impact, fair trade, and social responsibility.

## India-UN Capacity Building Initiative

### Context

- India and the United Nations have jointly launched the '**India-UN Capacity Building Initiative**'.

### Details

- India and the United Nations have jointly launched an initiative aimed at building the capacity of countries in the Global South. The goal is to share India's development experiences, best practices, and expertise through capacity-building and training programs.
- The 'India-UN Capacity Building Initiative' extends the success of India's G20 Presidency, which prioritised the inclusion of voices from the Global South in the G20 agenda.
- This initiative builds upon the extensive cooperation in development and capacity building that India already has bilaterally with the partners countries.
- Under this capacity-building endeavour, the UN-India team and the Gates Foundation will collaborate, utilising India's technical and economic cooperation platform to share India's development experiences and best practices worldwide.

The Global South broadly comprises countries in the regions of Africa, Latin America and the Caribbean, Asia (excluding Israel, Japan, and South Korea), and Oceania (excluding Australia and New Zealand), which are generally characterized by relatively low levels of economic and industrial development.

**About India-UN Capacity Building Initiative:**

<b>Aim</b>	<ul style="list-style-type: none"> <li>The initiative is aimed at building the capacity of countries in the Global South.</li> </ul>
<b>Goal</b>	<ul style="list-style-type: none"> <li>The goal is to share India's development experiences, best practices, and expertise through capacity-building and training program.</li> </ul>
<b>Mandate</b>	<ul style="list-style-type: none"> <li>Under this capacity-building endeavor, the <b>UN-India team and the Gates Foundation</b> will collaborate, utilizing India's technical and economic cooperation platform to share India's development experiences and best practices worldwide.</li> <li>The initiative will also put into action the development goals established during India's G20 Presidency, including the G20 Action Plan for advancing the Sustainable Development Goals (SDGs) and enhancing technology and digital infrastructure.</li> </ul>
<b>Significance</b>	<ul style="list-style-type: none"> <li>This initiative represents a significant step in accelerating progress toward the SDGs through <b>South-South Cooperation, demonstrating India's commitment</b> to strengthening its development partnership with the Global South.</li> </ul>

**2.14 SNIPPETS**

### Black Sea Grain deal

- The Black Sea deal was brokered by Turkey and the United Nations in July 2022 to enable Ukraine to export grain by sea despite the war and help ease a global food crisis.
- It was accompanied by an agreement to facilitate Russia's own exports of food and fertiliser, which Moscow says has not been fulfilled.



**2.15 1 MAINS & 5 MCQs**

**Q1. The India-Middle East-Europe Economic Corridor will help in promoting food security and supply chain between developing countries and this project is being seen as an alternative to China's huge Belt and Road Initiative Project. Analyse.**

**Introduction**

- The project is part of the Partnership for Rail and Shipping Corridors Global Infrastructure Investment (PGII). This project aims to strengthen the infrastructure in developing countries. In this project, G-7 countries will come together and make a collaborative effort.

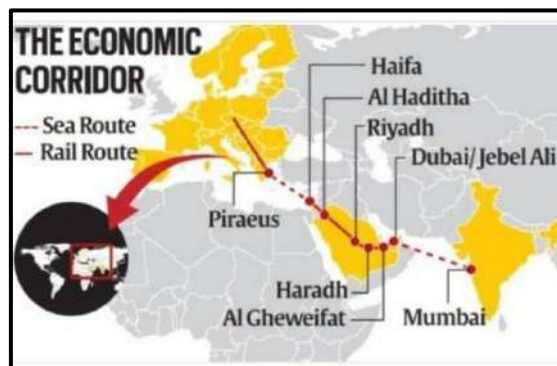
The key objectives of this ambitious project are to connect commercial hubs, support the development and export of clean energy, and expand undersea cables, energy grids, and telecommunication lines.



**Body**

**It will help in promoting:**

- This corridor will safeguard regional supply chains, boost trade accessibility, and enable a greater emphasis on environmental, social, and governance consequences.
- It will be designed to increase efficiencies, save costs, promote economic cohesion, create jobs, and reduce greenhouse gas emissions, leading to a radical integration of Asia, Europe, and the Middle East.
- The corridor “fills a damaging global gap and enables greater prosperity and better connectivity for key regions around the world”.
- The project will allow the countries involved to play a key role in the “global connective tissue of commerce, of digital communications, of energy.



**An alternative to China’s BRI project:**

- China began the Belt and Road Initiative in 2013 under its President Xi Jinping. It aims to revive the ancient trade routes crossing to and from China—from Rome in Europe to East Asia.
- Under this, the Chinese government helped in providing loans for infrastructure projects to various countries, and in many cases, Chinese companies were awarded contracts for carrying out the work. This helped China mark its footprints at a global level.
- However, China was criticized in the West and by some other countries for providing unsustainable debts to countries that would be unable to repay them. According to a 2019 World Bank report, among the 43 corridor economies for which detailed data was available, 12 could face a situation where debts were not sustainable, which could lead to public assets being handed over to foreign contractors or China itself.
- The report added that if issues of environmental degradation, high debts, and corruption are successfully countered and the BRI is fully implemented to its potential, it could increase trade between 1.7 and 6.2 percent for the world, increasing global real income by 0.7 to 2.9 percent. China has claimed the BRI has made economic gains and helped in job creation.

**Conclusion**

- There are three main reasons for developing the corridor. First, it will increase prosperity among the countries involved through increased flows of energy and digital communications.
- Second, the project will help address the lack of infrastructure needed for development in low- and middle-income countries.
- Third, it will help in ending the ongoing unrest and insecurity in the Middle East.

**Q2. India has cordial relations with this country. Identify the country with respect to the below-given statements:**

1. It is a country located in Central Africa, bordered by the Atlantic Ocean to the west.
2. Its economy heavily depends on oil production, which is a major source of revenue.

3. It is home to several ethnic groups, including the Fang, Bapounou, Eshira, and Myene, each contributing to the nation's cultural mosaic.

**Select the correct option using the code given below:**

- (a) Niger
- (b) Gabon
- (c) Congo
- (d) Cameroon

**Q3. Which of the following is/are correct about Africa's Potential in Global RE Transition?**

1. Africa has vast resource potential in wind, solar, hydro, and geothermal energy and falling costs are increasingly bringing renewables within reach.
2. Average annual investments in renewable energy grew tenfold from less than USD 0.5 billion in the 2000-2009 period to USD 5 billion in 2010-2020.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Q4. The Critical Raw Materials Act was recently in news, it is approved by a large majority of which among the following parliament?**

- (a) USA
- (b) Europe
- (c) India
- (d) Australia

**Q5. Which of the following is/are correct about the Financial Action Task Force (FATF)?**

1. It is an inter-governmental body, working to "set standards and promote effective implementation of legal, regulatory and

operational measures for combating money laundering.

2. It currently has 39 members, including only one regional organisation.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Q6. In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:**

**Assertion (A):** Liptako-Gourma Authority Charter, is an agreement signed by three West African countries: Burkina Faso, Mali, and Niger.

**Reason (R):** The charter is named after the Liptako-Gourma region, which encompasses parts of these three countries and is known for its significant security challenges.

- (a) A is true but R is false.
- (b) Both A and R are true and R is the correct explanation of A.
- (c) A is false but R is true.
- (d) Both A and R are true but R is not the correct explanation of A.

ANSWER: 2) b, 3)c, 4) b, 5) a, 6) b

## 3. ECONOMY

### 3.1 INDIA'S IMPOSSIBLE TRINITY PROBLEM

#### Context

- The "impossible trinity" is a dilemma that central banks face when they try to balance three objectives: exchange rate stability, monetary policy autonomy and free capital mobility. The Reserve Bank of India (RBI) and Indian investors are struggling to achieve this balance in the context of a volatile global economy and domestic inflationary pressures.

#### Details

- India's "Impossible Trinity" problem refers to the economic and policy challenges the country faces in balancing three key objectives: maintaining an independent monetary policy, managing a fixed or stable exchange rate, and allowing for free capital flows. These objectives are interrelated and often pose dilemmas for policymakers.

#### India's Impossible Trinity Problem

##### Independent Monetary Policy

- India's desire to maintain an independent monetary policy underscores its commitment to addressing domestic economic concerns. This autonomy allows the **Reserve Bank of India (RBI) to set interest rates and control the money supply to manage inflation, stabilize interest rates, and support overall economic stability**. An independent monetary policy provides flexibility in responding to domestic economic shocks, such as changes in inflation or economic growth.

##### Fixed Exchange Rate or Stable Exchange Rate

- A fixed or stable exchange rate can benefit India's trade and investment climate by **reducing currency risk**. It **instills confidence in international businesses and investors who prefer stable exchange rates for their transactions**. However, maintaining a fixed exchange rate often requires frequent interventions in the foreign exchange market by the central bank (RBI) to keep the domestic currency's value aligned with the anchor currency (e.g., the U.S. dollar). This can limit the flexibility of India's monetary policy.

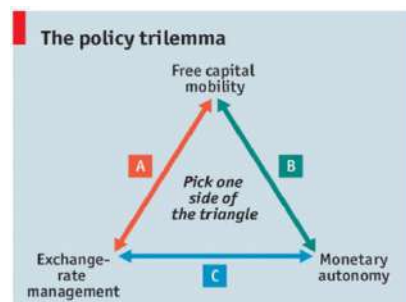
##### Free Capital Flows

- India's aspiration to allow free capital flows underscores its aim to attract foreign investment, both in terms of foreign direct investment (FDI) and portfolio investment. This **openness can contribute significantly to economic growth by increasing the availability of funds for domestic businesses and projects**. Free capital flows can enhance the efficiency of domestic financial markets by allowing for a broader range of investment opportunities and diversification of risk.

#### Steps Taken by India to Manage Impossible Trinity Problem

##### Managed Float Exchange Rate

- India's managed float exchange rate system **allows the Reserve Bank of India (RBI) to intervene in the foreign exchange market as needed**. This intervention helps manage excessive exchange rate volatility while still allowing some flexibility in the rupee's value. Under this system, the RBI buys or sells foreign currency to influence the exchange rate's direction, preventing abrupt fluctuations that could adversely affect trade and investor confidence.



### Capital Controls

- India has implemented capital controls to regulate the flow of funds across its borders. These controls are designed to prevent speculative attacks on the currency and manage the volume of capital entering or leaving the country. Measures include restrictions on the repatriation of capital by foreign investors, limits on the amount of Indian currency that can be taken out of the country, and regulations on foreign investment in various sectors.

### Interest Rate Policy

- The RBI carefully manages interest rates, taking into consideration both domestic economic conditions and external factors, such as global interest rate trends and inflation. This approach aims to strike a balance between controlling inflation and attracting foreign capital. Adjustments in interest rates are made with the dual goal of maintaining price stability within the domestic economy and ensuring that interest rate differentials remain attractive to foreign investors.

### Challenges

#### Interest Rate Dilemma

- Balancing domestic economic objectives with the need to attract foreign capital is indeed a complex challenge. Raising interest rates to attract foreign investment can make domestic borrowing more expensive, potentially dampening domestic investment and economic growth. Conversely, lowering interest rates to stimulate domestic growth may lead to capital outflows as investors seek higher returns elsewhere. This can put downward pressure on the rupee's value.

#### Currency Volatility

- While India's managed float exchange rate regime helps prevent extreme currency volatility, it cannot entirely shield the rupee from fluctuations. Exchange rate movements can impact trade competitiveness, especially for export-oriented industries. Currency volatility can also affect investor sentiment,

making foreign investors more cautious about investing in India, particularly in debt markets.

### Capital Controls and Investment Climate

- Implementing capital controls to manage the flow of funds can be effective in the short term, but it may have long-term consequences for India's investment climate. Stringent controls can deter foreign investors and make it less attractive to do business in India. A restrictive investment climate can hinder economic growth and reduce opportunities for job creation, which are critical for a country with a large and youthful workforce.

### Way Forward

#### Gradual Capital Account Liberalization

- Gradually liberalizing the capital account is a prudent approach to attract foreign investment while safeguarding financial stability. Careful management can help prevent sudden surges or outflows of capital, which can disrupt the economy. Incremental steps toward liberalization can allow India to assess the impact of policy changes and make necessary adjustments over time.

#### Exchange Rate Management

- Continued intervention in the foreign exchange market, when needed, is crucial for preventing extreme exchange rate fluctuations. A stable exchange rate enhances investor confidence and fosters a predictable environment for trade. The Reserve Bank of India (RBI) should maintain its ability to influence the rupee's value to avoid speculative attacks or excessive depreciation.

#### Diversification of Capital Sources

- Encouraging foreign direct investment (FDI) and long-term investments aligns with sustainable economic growth objectives. FDI tends to have a more stable and long-lasting impact compared to short-term portfolio investments. Reducing reliance on short-term capital flows can make India less vulnerable to abrupt capital outflows during periods of global volatility.

### Economic Reforms

- Structural economic reforms are essential for improving India's economic fundamentals and attracting foreign investment. These reforms should focus on areas such as infrastructure development, reducing bureaucratic hurdles, and streamlining regulations. Creating a business-friendly environment can make India a more attractive destination for foreign investors.

### Effective Communication

- Clear and transparent communication of policy intentions by the RBI and the government is crucial. It helps **reduce uncertainty in financial markets and among investors**. Transparent communication can help manage expectations and build trust in India's economic policies.

### Building Reserves

- Building and maintaining foreign exchange reserves is a prudent strategy to protect against external shocks and ensure confidence in the rupee's stability. Reserves act as a buffer in times of crisis and can help stabilize the currency during periods of volatility.

### **Conclusion**

- India's Impossible Trinity problem is a complex challenge that requires careful policy management. Striking a balance between maintaining domestic economic stability, attracting foreign capital, and managing exchange rate volatility is crucial for India's economic growth and stability. Gradual and well-considered reforms, along with effective communication, can help India navigate this dilemma successfully.

## 3.2 PRODUCTION LINKED INCENTIVE SCHEME FOR IT HARDWARE

### **Context**

- The Government of India has launched the Production-Linked Incentive (PLI) Scheme 2.0 for IT Hardware to boost the domestic production of laptops, tablets, all-in-one PCs and servers, and to enhance their competitiveness in the global market.

### **Details**

- The Production-Linked Incentive (PLI) Scheme 2.0 for IT Hardware is **part of India's border Atmanirbhar Bharat initiative**, which aims to promote self-reliance and resilience across various sectors of the economy.
- This initiative is **aligned with the National Policy on Electronics 2019**, which seeks to create a conducive environment for the growth of the electronics system design and manufacturing (ESDM) industry in India.
- The PLI Scheme 2.0 for IT Hardware is designed **to boost domestic production in the IT hardware sector** and reduce the country's dependence on imports in this critical area.

### Production Linked Incentive (PLI) schemes

- The Production Linked Incentive (PLI) schemes aim **to boost domestic manufacturing and exports by providing financial incentives** based on incremental production and sales in various sectors. They are output-oriented, time-bound, performance-based, flexible, and aligned with national priorities.
- The Scheme initially targeted industries like mobile and electrical components, medical devices, it has expanded to cover sectors including automobiles, electronics, pharmaceuticals, textiles, and more.
- The schemes hold significant potential for boosting manufacturing, enhancing self-reliance, fostering innovation, and creating employment opportunities, with estimated additional production and exports worth billions of dollars over five years.



## Key features of the Scheme

- It supports the production of various IT hardware products, such as laptops, tablets, PCs, servers, and USFF devices. These products are essential for the digital transformation of the country.
- It **rewards eligible companies with financial incentives** based on their incremental sales and investment in IT hardware manufacturing. This means that companies that grow their sales and invest more in IT hardware will get more incentives.
- It **covers the manufacturing of key components and sub-assemblies of IT hardware**, such as semiconductor design, IC manufacturing, and packaging. This comprehensive approach aims to create a complete IT hardware ecosystem in India.
- It **offers an average incentive of around 5% on net incremental sales** (over the base year) of goods manufactured in India within the specified target segment. This incentive will be given for a period of six years.
- It allows applicants to have flexibility and localization in their operations. This means that companies can choose how they set up their operations to get the maximum benefits of the scheme.

## Significance

- The scheme will **help India to improve its position in the global IT hardware market**, which is currently dominated by countries like China, Taiwan, and Vietnam. The scheme will provide incentives to manufacturers to increase their exports of IT hardware products from India.
- It will help India to **reduce its reliance on imports of IT hardware products**, which account for a large portion of the electronics import bill. By increasing domestic production, the scheme will save foreign exchange and improve the trade balance.
- It will **support the development of a strong IT hardware ecosystem in India**, with linkages between various stakeholders such as component suppliers, original equipment manufacturers (OEMs), original design

manufacturers (ODMs), and service providers. It will also encourage innovation and R&D in the IT hardware sector, which is crucial for staying ahead of the competition.

- It will **create additional direct and indirect jobs in the IT hardware sector**, which will have a positive impact on the economy. The scheme will also enhance the skill development and employability of the workforce in this sector.

## Challenges

- **Ensuring the availability of skilled manpower and quality infrastructure** for IT hardware manufacturing is crucial for the scheme's success.
- Compliance with environmental and safety standards and regulations is essential for responsible manufacturing.
- **Protecting intellectual property rights** and ensuring data security are critical aspects, especially in the IT sector.
- India faces competition from other countries that offer similar or better incentives and support to IT hardware manufacturers.
- Effective coordination among various stakeholders, including central and state governments, industry associations, academia, and research institutions, is necessary for seamless implementation.

## Way Forward

- **Creating a favourable policy environment and streamlining the regulatory framework** for IT hardware manufacturing. This will reduce the compliance burden and attract more investments in this sector.
- **Providing sufficient infrastructure support**, such as power, water, logistics, connectivity, and land. This will lower operational costs and improve the efficiency and quality of IT hardware products.
- **Developing a skilled workforce and enhancing their skills** through training and education. This will increase



the productivity and innovation potential of the IT hardware sector and create more employment opportunities.

- **Encouraging innovation and R&D in IT hardware products** and processes to stay competitive in the global market. This will enable the IT hardware sector to produce high-value-added products and meet the diverse needs of customers.
- Strengthening the domestic demand for locally made IT hardware products and

creating awareness among consumers about the benefits of buying these products. This will increase the market share and profitability of the IT hardware sector and support the Make in India initiative.

- These measures will not only boost the IT hardware manufacturing sector but also contribute to India's broader economic growth and self-reliance goals.

### 3.3 MINOR IRRIGATION CENSUS

#### Context

- The report of the 6th census on minor irrigation schemes was released by the Ministry of Jal Shakti.

#### Details

- The report highlights the significance of minor irrigation in increasing agricultural productivity, mitigating risks associated with rainfall variability, promoting crop diversification, empowering small farmers, and supporting sustainable agriculture.
- It underscores the importance of government support, capacity building, energy-efficient technologies, and community participation in ensuring the continued success and sustainability of minor irrigation systems.

#### Key findings and insights from the report:

- The report shows that **electricity has become the dominant source of power for groundwater extraction, accounting for 76% of irrigation sources**. This marks a notable increase from previous years, as in 2011, electricity powered only 56% of sources. However, the growth rate has slowed down compared to previous years.
- **Rise in the use of tubewells and borewells capable of extracting water at greater depths**. The number of "medium-sized" wells (capable of withdrawing water from up to 70 meters) and "deep" wells (beyond 70 meters) has increased significantly, while the numbers of "dugwells" and "shallow" tube wells have declined. This shift suggests a preference for more powerful and deep-reaching tubewells among farmers.
- **The report does not explicitly investigate the specific causes behind the increased use of deep tubewells**. However, it suggests that state governments may have implemented schemes to incentivize or facilitate access to loans for farmers looking to purchase such tubewells. Additionally, there may be a growing emphasis on energy-efficient water extraction, which could explain the slower growth in electrification.
- The report indicates that there were 23.14 million Minor Irrigation (MI) in India, with 94.8% dedicated to groundwater extraction and 5.2% for surface-water extraction. Uttar Pradesh, Maharashtra, Madhya Pradesh, and Tamil Nadu are among the states with the highest number of MI schemes.
- **Most MI (96.6%) are privately owned**, and small and marginal farmers with less than two hectares of land own the majority of these schemes.
- Different states in India exhibit variations in MI schemes and groundwater extraction, reflecting regional hydrological conditions and agricultural practices.

### Minor Irrigation

- Minor irrigation refers to small-scale systems and practices aimed at providing water to relatively small agricultural areas.
- **Minor irrigation systems draw water from various sources based on local hydrological conditions.** This includes groundwater accessed through tube wells and bore wells, surface water from sources like check dams and tanks, and even rainwater harvesting techniques, often managed by individual farmers or local communities.
- One of the key advantages of minor irrigation systems is their relative **affordability, especially for small and marginal farmers.** These systems are often designed to be cost-effective and manageable by individual farmers or local communities, making them accessible to a broader segment of the farming population.
- Minor irrigation systems primarily serve as a supplement to rainfed agriculture. They **play a crucial role in ensuring a consistent and reliable water supply,** particularly during dry periods or when rainfall is insufficient.

### Significance of Minor Irrigation

- Minor irrigation systems **provide a consistent and reliable water supply,** allowing farmers to cultivate crops throughout the year, regardless of seasonal variations in rainfall. This increased water availability supports higher crop yields and improved agricultural productivity.
- Dependency on rainfall alone can be risky, as erratic weather patterns and droughts can lead to crop failures and financial losses. Minor irrigation **acts as a risk mitigation strategy by reducing reliance on unpredictable rainfall.**
- With assured water from minor irrigation systems, **farmers have the flexibility to diversify their crop choices and engage in multiple cropping cycles throughout the year.** Crop diversification enhances food security, income, and nutritional variety.
- Minor irrigation systems **empower small and marginal farmers who may have limited access to resources.** By providing control over water resources, they gain autonomy and are less reliant on external factors for water access.
- These systems **promote sustainable water management practices** when combined with efficient water-use technologies like drip and sprinkler irrigation. Sustainable practices ensure the long-term availability of water for irrigation and contribute to environmental conservation.

### Steps Taken to Promote Minor Irrigation

- Schemes like the **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) and the National Mission on Sustainable Agriculture (NMSA)** provide financial support and incentives to farmers for adopting minor irrigation practices, improving infrastructure, and efficient water management.
- **India encourages the adoption of modern irrigation technologies** such as drip and sprinkler irrigation systems to enhance water use efficiency and reduce wastage.
- The country **promotes rainwater harvesting techniques,** including rooftop rainwater harvesting and check dams, to capture and store rainwater for irrigation, groundwater recharge, and household needs.
- Many states have **initiated community-based water management systems,** involving local communities in the planning, implementation, and management of minor irrigation systems.
- The government **provides financial incentives and subsidies to small and marginal farmers** to facilitate the adoption of minor irrigation systems, making them more accessible and affordable.
- Efforts are made to incorporate climate-resilient practices and technologies to adapt to changing weather patterns, ensuring continuous water availability.

### Challenges in Minor Irrigation

- Many farmers struggle to obtain loans to invest in minor irrigation systems due to high interest rates, collateral requirements, or bureaucratic hurdles.
- Minor irrigation systems require energy for operation, and the cost can be high. The unreliable electricity supply in rural areas forces farmers to rely on expensive diesel generators.
- Over-extraction of groundwater can lower water tables and deplete aquifers, leading to water scarcity and salinity problems. Inefficient water use can cause wastage, runoff, soil erosion, and nutrient leaching.
- Farmers need training and technical knowledge to install, operate, and maintain minor irrigation systems effectively.
- Changing rainfall patterns and erratic weather due to climate change can affect water sources and crop growth, requiring adjustments in irrigation practices.

### Way Forward for Minor Irrigation

- Investing in training and capacity-building programs for farmers is crucial to enhance their understanding of modern irrigation technologies and water management practices.
- Promoting energy-efficient technologies like solar-powered pumps can reduce operational costs associated with irrigation.
- Sustainable groundwater management measures, such as monitoring and regulating groundwater usage, are essential to prevent over-extraction and depletion.
- Involving local communities in the management of minor irrigation systems fosters ownership and ensures sustainability.
- Investment in research and innovation can lead to cost-effective and sustainable irrigation solutions.
- Continued government support through financial incentives and subsidies is crucial to encourage the wider adoption of minor irrigation systems.
- Incorporating climate-resilient practices and technologies is essential to adapt to changing weather patterns.

### Conclusion

- The MIC report sheds light on the evolving trends in minor irrigation practices in India, particularly the shift towards electricity as the primary power source for groundwater extraction and the use of deeper tube wells and borewells. It also highlights the importance of minor irrigation in enhancing agricultural productivity, food security, and the livelihoods of small and marginal farmers in India. Addressing challenges and promoting sustainable practices will be essential for the continued success and resilience of minor irrigation in the country.



## 3.4 UNITED PAYMENTS INTERFACE (UPI)

### Context

- The United Payments Interface (UPI) crossing 10 billion in transaction volume in August is a significant milestone for India's digital payments ecosystem.

### Details

- The Unified Payments Interface (UPI) is a real-time payment system developed by the National Payments Corporation of India (NPCI) in April 2016. It was created to

simplify and accelerate digital transactions in India, providing a seamless platform for money transfers and payments.

- UPI was introduced as part of the Indian government's broader digital payment push to promote financial inclusion and reduce reliance on cash transactions.

### [Key features of the Unified Payments Interface \(UPI\)](#)

- UPI ensures that transactions are smooth and quick. Users can transfer money to others or

make payments to merchants with just a few taps on their smartphone, making it extremely user-friendly.

- It **consolidates multiple bank accounts into a single mobile app**. This simplifies financial management for users who have accounts with different banks, reducing the need to switch between multiple apps.
- **It uses a unique UPI ID or Virtual Payment Address (VPA) linked to the user's bank account**. This eliminates the requirement to share sensitive information like full bank account numbers, enhancing security and privacy.
- It **enables real-time fund transfers 24/7**, including weekends and holidays. This feature has revolutionized the way people make payments, as it eliminates delays associated with traditional banking hours.
- It extends beyond peer-to-peer transactions. Users can conveniently pay their utility bills, recharge mobile phone plans, and settle invoices from various merchants and service providers directly through the UPI platform.
- It incorporates robust security measures, including **two-factor authentication (2FA)**, to ensure that transactions are safe and secure. Users typically need to enter a transaction PIN or authenticate through biometrics to authorize payments, adding an extra layer of protection against fraudulent activities.

#### **Significance**

- **It has reached previously underserved populations**, including those in rural areas and those without access to traditional banking services. By providing a simple and accessible digital payment method, UPI has allowed a broader segment of the population to participate in the formal financial sector, fostering economic empowerment.
- It has led to a significant **decline in cash transactions as more people opt for digital payments**. This reduction in cash usage not only enhances convenience but also combats issues related to black money, corruption, and counterfeit currency.
- Its simplicity makes it **accessible to individuals of all age groups and varying**

**levels of technological familiarity**. This inclusivity has been pivotal in ensuring that digital financial services are not restricted to a tech-savvy urban population.

- By streamlining financial transactions for both businesses and consumers, it has created an environment conducive to e-commerce, digital entrepreneurship, and innovation in financial services. The convenience of UPI has encouraged businesses to embrace digital payments, driving economic activity in the digital realm.

#### **Challenges**

- **UPI users are vulnerable to phishing attacks and fraud**, as hackers can trick them into revealing their personal and banking details or making unauthorized transactions.
- Many Indians are still **unaware of the benefits and features of UPI**, or how to use it safely and effectively. They may also have misconceptions or distrust about digital payments.
- UPI requires a smartphone and an internet connection, which are not easily available in rural areas. This limits the reach and adoption of UPI among the rural population.

#### **Way Forward**

- **Continuously improve security measures** and educate users about safe practices.
- Focus on expanding digital infrastructure and promoting UPI adoption in rural areas.
- Ensure standardization and interoperability across all UPI apps and banks.
- **Encourage innovation in payment technologies** to keep pace with evolving consumer needs.
- Continue financial literacy programs to enhance awareness and understanding of digital payments.
- Explore opportunities to internationalize UPI, enabling cross-border transactions.
- Regulatory bodies should adapt to the changing landscape and provide a conducive environment for digital payment growth.



## Conclusion

- UPI has emerged as a game-changer in India's financial sector, driving financial inclusion and reducing cash dependency. While it has made significant progress, addressing security concerns, expanding outreach to rural areas,

and ensuring interoperability are essential steps for its continued success. The future of UPI looks promising as it continues to evolve and meet the changing needs of Indian consumers and businesses.



## 3.5 CENTRAL BANK DIGITAL CURRENCY (CBDC)

### Context

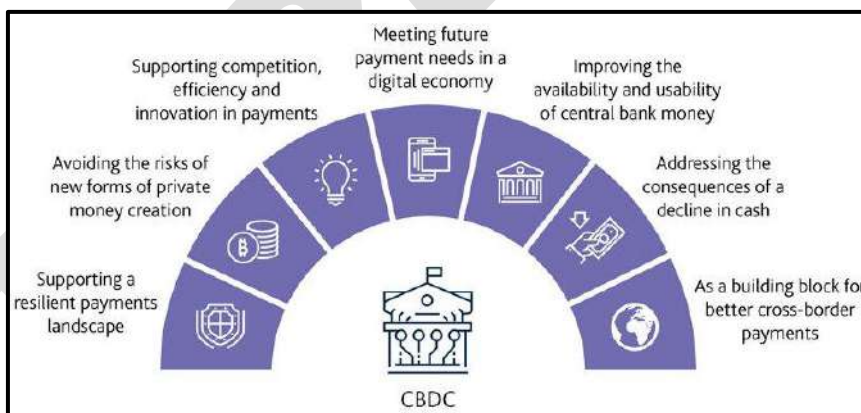
- The Reserve Bank of India (RBI) Governor has emphasized the potential benefits of Central Bank Digital Currency (CBDC) for improving cross-border payments.

### Details

- Central Bank Digital Currencies (CBDCs) are digital or virtual currencies issued by central banks and function as legal tenders. They are designed to modernize and digitize the existing payment systems, providing various benefits over physical cash and traditional banking.
- India has been exploring the concept of CBDCs for several years, and the Reserve Bank of India (RBI) has been actively researching this technology.

### Features

- CBDCs are entirely digital or virtual, which means they exist as electronic records in a central bank's ledger. This eliminates the need for physical cash, making transactions more convenient and efficient.
- They are **exclusively issued and regulated by the central bank**, ensuring the highest level of trust and stability. Users can rely on the central bank's backing for the value of CBDCs.



- They are **legally recognized as a valid medium of exchange for goods and services**, just like physical currency. This status encourages their adoption and use in everyday transactions.
- They employ advanced security measures, including cryptographic techniques, to protect against fraud and counterfeiting. These security features help ensure the integrity of the digital currency.
- They are designed to be accessible to everyone, regardless of their income or location. This inclusivity promotes financial inclusion, allowing individuals without access to traditional banking services to participate in the digital economy.

### Significance

- CBDCs can significantly **enhance the efficiency of the payment system**. By reducing reliance on physical cash, they simplify transactions and lower the costs associated with cash management. Additionally, CBDCs can enable faster and cheaper cross-border payments, reducing the need for intermediaries.

- They have the **potential to bridge the gap in financial inclusion** by providing a secure and convenient means of accessing financial services. People in remote or underserved areas can use CBDCs for payments, savings, and investments, thereby becoming part of the formal financial system.
- They **offer central banks greater control over the money supply** and the ability to implement monetary policies more effectively. This control can help manage inflation, stabilize the economy, and respond to financial crises with precision.



- They can mitigate some of the risks associated with cryptocurrencies and stablecoins, which can be highly volatile and pose risks to financial stability. CBDCs provide a regulated and secure digital alternative, reducing the likelihood of financial instability.

### Steps taken by India

- The release of a concept note in October 2022 signifies the **RBI's intent to openly discuss CBDCs and evaluate their potential impact.** This document outlines the advantages and drawbacks, initiating a public conversation on the topic.
- The RBI's continuous research and collaboration with other central banks are essential for a well-informed decision on CBDC implementation. Learning from international experiences and best practices is crucial in shaping India's CBDC strategy.
- Conducting pilot projects is a crucial step to test CBDC technology in real-world scenarios. These projects provide practical insights into how CBDCs can be integrated into the existing financial ecosystem.

### Challenges

- Designing the CBDC's **technical infrastructure, security features,** and access mechanisms is complex. The RBI needs to strike a balance between innovation and security while ensuring the digital currency meets the diverse needs of India's population.
- **Gaining public trust and acceptance for CBDCs is paramount.** Public awareness campaigns and educational initiatives will be necessary to help people understand the benefits and uses of CBDCs.
- Crafting a robust regulatory framework is essential to protect consumers and prevent illicit activities. Regulations should cover issues like anti-money laundering (AML) and know-your-customer (KYC) procedures, ensuring the legality and security of CBDC transactions.
- Developing the necessary digital wallets, payment systems, and a supportive technological ecosystem is vital. This includes creating user-friendly interfaces and ensuring compatibility with various devices and networks.

### Way Forward

- The RBI's commitment to research and collaboration demonstrates its intention to make informed decisions regarding CBDCs. Collaborating with other central banks can provide valuable insights and minimize risks.

- Pilot projects will play a crucial role in determining the practicality and viability of CBDCs in India's financial landscape. The lessons learned from these projects will inform further decisions.
- **Educating the public about CBDCs will be an ongoing effort.** Awareness campaigns, workshops, and educational materials can help demystify the concept and promote its adoption.
- Developing user-friendly digital wallets and robust payment systems is essential to ensure CBDCs are accessible and convenient for all segments of the population.
- Establishing a comprehensive regulatory framework will provide legal clarity and consumer protection, fostering trust in CBDCs.

### Conclusion

- CBDCs in India have the potential to revolutionize the payment landscape, promote financial inclusion, empower the central bank with enhanced monetary policy tools, and contribute to overall financial stability. However, addressing challenges such as design, public acceptance, regulation, and technological infrastructure will be essential to realizing these potential benefits. The Reserve Bank of India's ongoing research and careful approach aim to ensure a safe and efficient implementation of CBDCs in the country.



## 3.6 MEASUREMENT OF UNEMPLOYMENT IN INDIA

### Context

- The unemployment situation in India has been a matter of concern for policymakers and analysts.

### Details

- In 2017, the unemployment rate was reported at 6.1%, which was the highest ever recorded in the country. However, there has been a slight improvement, with the unemployment rate decreasing to 4.1% in the 2021-22 Periodic Labour Force Survey, although it remains higher than in some developed economies.

### Unemployment

- Unemployment refers to the condition where **individuals who are willing and able to work cannot find suitable employment opportunities.** It serves as a crucial economic and social indicator reflecting the health of a nation's labour market.
  - The labour force comprises individuals who are either employed or actively seeking employment. Those not actively participating, such as retirees, students, and discouraged workers, are not counted as unemployed.
- Unemployed Individuals are people who are currently not working but are actively looking for work and are available for employment.
- Unemployment can be categorized into several types, including frictional, structural, cyclical, and seasonal unemployment. Each type has distinct causes and characteristics.
- The unemployment rate is calculated by dividing the number of unemployed people by the total labour force, which is defined as the sum of employed and unemployed individuals.

#### Unemployment Rate Formula

$$U = \frac{\text{Unemployed People}}{\text{Labor Force}} \times 100$$

### Measuring Unemployment in India

- Measuring unemployment in India, like in many developing economies, is complex due to informal job markets, employment variability, and cultural influences. Different methods and definitions can lead to varying unemployment rates.
- Unemployment in India is measured using three different methods:
  - **Usual Status Unemployment:** This method estimates the number of individuals who remained unemployed for a significant portion of the year. It is the most comprehensive measure of unemployment as it includes people who are unemployed but are not actively seeking work.
  - **Weekly Status Unemployment:** According to this method, a person is categorized as unemployed if they are unable to work even for one hour during the survey week. It is a more restrictive measure compared to usual status unemployment as it only includes individuals who are actively seeking employment during the specific week of the survey.
  - **Current Daily Status Unemployment:** This method examines an individual's activity status for each day of the preceding seven days. It considers a day as the reference period. This is the most restrictive measure of unemployment, as it only includes individuals who are both unemployed and actively seeking work on each day of the survey period.
- The **National Statistical Office (NSO) conducts the Periodic Labour Force Survey (PLFS)** every five years to gather data on employment and unemployment in India. The PLFS employs the current daily status unemployment measure to compute the unemployment rate.

### **Reason of Unemployment in India**

- India's rapidly **growing population adds pressure to create enough jobs** to absorb new entrants to the labour market each year.
- The education and training system often fails to equip individuals with the skills needed by employers, leading to a **gap between job seekers' skills and employer demands**.
- India's transition from an agrarian economy to an industrial and service-based one can result in **structural unemployment** as skills do not match evolving job opportunities.
- **Economic downturns and recessions** can lead to temporary layoffs and cyclical unemployment as businesses reduce their workforce.
- Certain industries, such as agriculture and tourism, experience fluctuations in employment demand during different seasons.
- A significant portion of employment in India is in the **informal sector**, which often lacks job security and offers lower wages.
- **Gender-based disparities limit women's access to employment opportunities**, particularly in specific sectors and industries.
- **Poor infrastructure in some regions discourages businesses** from expanding, limiting job creation opportunities.
- **Complex labour laws and regulatory hurdles** can deter business growth and job creation.
- A **limited entrepreneurial ecosystem** hinders job creation, especially in small and medium-sized enterprises (SMEs).

### **Impacts of Unemployment**

- Unemployment can push individuals and families into **poverty**, affecting their basic needs and opportunities.
- High unemployment levels can lead to **social unrest and protests, disrupting social stability**.
- Unemployment results in **economic losses for the country**, reducing overall prosperity.
- Prolonged unemployment can lead to **mental health problems** such as depression, anxiety, and low self-esteem.

- Skilled workers seeking better opportunities abroad can lead to a **brain drain**, depriving the country of talent.
- Unemployed individuals have less disposable income, leading to reduced consumer spending and economic challenges.

### Steps Taken to Address Unemployment

- The government has **launched various skill development programs** aimed at training unemployed youth in skills that are in demand in the job market. These programs are offered through government-run training centres, private training institutes, and industry associations. By enhancing the employability of individuals, these programs help bridge the skills gap.
- Initiatives like the Pradhan Mantri Rojgar Yojana (PMRY), the Mahatma Gandhi National Rural Employment Guarantee Act (NREGA), and the Startup India initiative are designed to create employment opportunities. They **provide financial and other forms of support to unemployed youth**, enabling them to either start their businesses or secure jobs in the formal sector.
- The government's substantial **investments in infrastructure development**, including roads, railways, and airports, have contributed to job creation in the construction and manufacturing sectors. These projects generate employment opportunities for a wide range of skill sets.
- The government has offered **tax incentives to businesses to encourage them to hire more workers**. These incentives can reduce the cost burden on employers, making it more feasible for them to expand their workforce.
- The Make in India initiative, a government program aimed at **attracting foreign investment and promoting domestic manufacturing**, is expected to boost job creation in the manufacturing sector. By encouraging both foreign and domestic companies to set up manufacturing units in India, this initiative aims to generate employment.
- The government is focusing on **improving the ease of doing business in India**. Simplifying regulatory processes and reducing bureaucratic hurdles can make it easier for businesses to start and expand. This, in turn, can lead to increased job opportunities.

### Way Forward

- **Diversifying the Economy:** Relying too heavily on a single industry can leave an economy vulnerable to fluctuations in that industry. Diversification not only spreads the risk but also creates a more resilient job market.
- **Enhancing Education:** A well-educated workforce is essential for a modern economy. Education should not only be academically focused but also include vocational training and lifelong learning opportunities to adapt to evolving job demands.
- **Encouraging Entrepreneurship:** Startups and small businesses are often the engines of job creation. Supporting them through access to funding

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and mentorship can lead to more business ventures and, subsequently, more jobs.

- **Investing in Infrastructure:**

Infrastructure projects not only create immediate jobs in construction but also improve the overall economic environment, leading to additional job creation in various sectors.

- **Making Labor Markets More Flexible:**

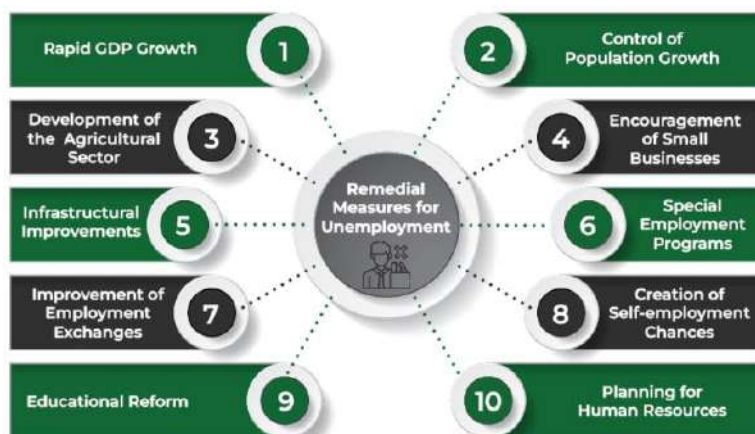
Flexibility in labour markets can encourage businesses to hire and adapt more readily to market changes. However, it's essential to balance flexibility with workers' rights and job security.

- **Promoting Gender Equality:**

Gender equality is not only a matter of social justice but also an economic imperative. When women have equal opportunities and representation in the workforce, it contributes significantly to economic growth.

- **Using Data-Driven Policies:**

Data-driven policies enable governments to make informed decisions, allocate resources efficiently, and measure the effectiveness of their initiatives. This approach ensures that interventions are tailored to the specific needs of the job market.



### Conclusion

- Addressing unemployment in India is a complex challenge that requires a comprehensive approach involving government policies, private sector participation, and societal awareness. By focusing on skill development, entrepreneurship, labour market reforms, and infrastructure development, India can work towards reducing unemployment and fostering inclusive growth.



## 3.7 INFLATION IN INDIA

### Context

- Retail inflation in India, as measured by the Consumer Price Index (CPI), eased to 6.83% in August 2023 from a 15-month high of 7.44% in July. This was primarily due to a decline in food prices, especially vegetables.

### Details

- Despite the decrease, the inflation rate remained above the upper limit of the Reserve Bank of India's (RBI) medium-term inflation target of 4% (with a tolerance range of +/- 2%). This suggests ongoing inflationary pressures in the economy.
- **Rural areas experienced slightly higher overall inflation (7.02%) than urban areas (6.59%)** in August. Food inflation was lower in rural areas compared to urban areas.
- **India's industrial production, as measured by the Index of Industrial Production (IIP),** grew to a five-month high of 5.7% in July. This growth was driven by strong performances in the manufacturing, mining, and electricity sectors.
  - IIP is a critical economic indicator that measures the growth rates of different industry sectors within an economy. It is **calculated and regularly published by the Central Statistical Organisation (CSO) on a monthly basis.**

- Overall, the data suggests a mixed economic picture for India. While there are positive signs in industrial production, inflation remains a concern, particularly regarding food prices. Policymakers, including the RBI, will need to carefully manage these economic factors to ensure stability and sustainable growth.

## Inflation

- Inflation refers to the sustained increase in the general price level of goods and services in an economy over a period of time. It is typically measured as an annual percentage increase. Inflation can have significant economic and social implications.

### Factors Contributing to Inflation in India

- India's **dependence on agriculture makes it vulnerable to fluctuations in food prices**. Supply chain inefficiencies and weather-related challenges can lead to price spikes in essential food items.
- Events like the COVID-19 pandemic can disrupt supply chains, leading to shortages and higher prices for various goods and services.
- India imports a significant amount of commodities like oil, metals, and edible oils. **Changes in global prices** for these commodities can impact domestic inflation rates.
- Excessive government spending and loose monetary policies**, such as printing money or low-interest rates, can increase the money supply and potentially fuel inflation.
- Fluctuations in the exchange rate** can affect the prices of imported goods, especially if the Indian Rupee depreciates against major currencies.
- When wages rise significantly, businesses may pass on the increased labour costs to consumers through higher prices, leading to a cycle of rising wages and prices.
- People's expectations about future inflation can influence their economic behaviour**. If individuals anticipate higher inflation, they may demand higher wages and make purchases sooner, contributing to inflation.

WPI vs CPI	
Wholesale Price Index (WPI) and Consumer Price Index (CPI) are two crucial metrics that help in defining the prices of the goods and services in an economy.	
<b>Consumer Price Index (CPI)</b> <ul style="list-style-type: none"> <li>It measures the change in the retail prices of goods and services</li> <li>CPI releases on a monthly basis.</li> <li>CPI includes both goods and services.</li> <li>It includes about eight categories of products and services.</li> <li>Base year is calendar year.</li> <li>It calculates the final stage of inflation.</li> <li>CPI is of importance to the general public</li> </ul>	<b>Wholesale Price Index (WPI)</b> <ul style="list-style-type: none"> <li>It measures change in price of goods changed by whole seller.</li> <li>WPI releases on a weekly basis</li> <li>WPI includes only goods.</li> <li>It includes primary articles, fuel &amp; power and manufactured goods.</li> <li>Base year here is Financial Year.</li> <li>It measures inflation in the first stage</li> <li>WPI is of importance to those who keep track of wholesale prices.</li> </ul>

### Implications of Inflation

- Inflation erodes the purchasing power of money**. As prices rise, consumers can buy less with the same amount of money, impacting their standard of living and essential purchases.
- Inflation can **create uncertainty in financial markets**, making it difficult for investors to make informed decisions about where to allocate their capital.
- Inflation can benefit borrowers over lenders**, as borrowers repay loans with money that has lower purchasing power. This can lead to income redistribution, favouring those with debt.
- High or unpredictable inflation rates **can discourage saving and long-term investments** because the real value of savings and returns may decline.

### Steps Taken to Address Inflation

- The **Reserve Bank of India (RBI) uses various monetary policy tools to control inflation**. These tools include adjusting the repo rate, reverse repo rate, and cash reserve ratio (CRR) to influence the money supply and interest rates in the economy. Raising interest rates, for example, can help curb inflation by reducing consumer spending and borrowing.

- The government often employs measures like **price controls, subsidies, and maintaining buffer stocks to stabilize food prices**, especially for essential items like grains and pulses. These measures aim to ensure food security and prevent food price inflation.
- **Implementing supply-side reforms in agriculture and improving supply chain efficiency** can help mitigate inflationary pressures. Investments in infrastructure, technology, and agricultural practices can boost production and reduce post-harvest losses.
- Strategies like hedging against global commodity price fluctuations and diversifying sources of imports can help reduce the impact of global factors on domestic inflation. Additionally, foreign exchange reserves management can be used to stabilize the exchange rate.
- Policymakers often face the challenge of balancing the objectives of controlling inflation and promoting economic growth. Striking the right balance is crucial to ensure that inflation remains within manageable limits without stifling economic activity.

### Challenges in Managing Inflation

- Supply chain disruptions, whether caused by natural disasters, pandemics, or other factors, can lead to shortages and price volatility, making it challenging to control inflation effectively.
- **Structural issues in various sectors of the economy**, such as agricultural inefficiencies and infrastructure bottlenecks, can contribute to inflationary pressures. Addressing these issues requires long-term reforms.
- **India's dependence on global markets for commodities and energy** makes it vulnerable to global price fluctuations. These factors are often beyond the control of domestic policymakers.
- Balancing the need to control inflation with the desire to promote economic growth can be complex. Tight monetary policies aimed at curbing inflation may have short-term growth implications, and finding the right policy mix is a constant challenge.

### Way Forward to address the challenges associated with inflation

- **Implementing structural reforms**, particularly in agriculture and labour markets, can enhance productivity and reduce inefficiencies. These reforms can help stabilize prices and reduce inflationary pressures.
- **Close coordination between fiscal and monetary policies is essential**. Both policies should work in harmony to achieve the dual objectives of controlling inflation and promoting economic growth.
- **Investment in infrastructure**, including transportation, logistics, and storage facilities, can improve supply chain efficiency and reduce bottlenecks that contribute to inflation.
- **Reducing dependence on volatile global markets** by diversifying imports can make the economy more resilient to external shocks. It helps mitigate the impact of global commodity price fluctuations on domestic inflation.
- Adopting inflation targeting as a policy framework can enhance transparency and predictability in monetary policy decisions. It provides a clear signal to the public and financial markets about the central bank's commitment to price stability.
- **Financial inclusion and literacy initiatives** can empower individuals to better manage the impact of inflation on their savings and investments. Educating the public about inflation and its effects can help individuals make informed financial decisions.



### Conclusion

- Inflation is a complex economic phenomenon with various causes and consequences. India, like many other countries, employs a mix of monetary and fiscal policies to manage and control inflation, but challenges remain in achieving stability and sustainable



economic growth. Addressing structural issues and improving coordination between monetary and fiscal authorities are key to managing inflation effectively in the future.

### 3.8 INCREMENTAL CASH RESERVE RATIO

#### Context

- The Reserve Bank of India (RBI) has announced the phased discontinuation of the incremental cash reserve ratio (I-CRR) in response to evolving liquidity conditions.

#### Details

- I-CRR was introduced by the RBI **to absorb surplus liquidity in the banking system**. Banks were required to maintain a 10% incremental cash reserve ratio (CRR) on the increase in their net demand and time liabilities (NDTL) between May 19, 2023, and July 28, 2023.
  - The RBI implemented the I-CRR as a means to absorb surplus liquidity generated by various factors, including the return of Rs 2,000 notes to the banking system.
- Following the introduction of the I-CRR, the banking system liquidity slipped into deficit for the first time in the financial year, primarily due to the RBI's move. Liquidity surplus had been over Rs 1.5 lakh crore as of September 6, driven by increased government spending, but this changed with the I-CRR implementation.
- RBI's Deputy Governor had noted that a liquidity overhang could pose a threat to the inflation outlook. The RBI closely monitors liquidity conditions as part of its monetary policy decisions.

#### Incremental Cash Reserve Ratio (CRR)

- The Incremental Cash Reserve Ratio (CRR) serves as a **critical monetary policy instrument** utilized by central banks, including the Reserve Bank of India (RBI), to actively manage liquidity within the banking system. This mechanism involves **compelling banks to retain a specified portion of their deposits with the central bank**.
- Incremental CRR, on the other hand, is an additional requirement imposed on banks for a specific timeframe to absorb excess liquidity from the banking system.

#### Features

- The Incremental CRR is a **short-term measure, not a permanent policy**. It is deployed as needed to **address particular liquidity issues or economic circumstances**. It doesn't represent a long-term commitment but rather a tool to be wielded when deemed necessary.
- Incremental CRR is not a continuous or ongoing obligation. It is implemented over a defined period linked to a specific event, policy alteration, or economic situation. Once the situation is resolved or the designated period concludes, the requirement may be lifted.
- The principal objective of Incremental CRR is to absorb surplus liquidity in the banking system resulting from specific events, policies, or economic conditions. By mandating banks to maintain a higher reserve, the central bank aims to regulate the money flow and manage liquidity more effectively.
- The central bank typically stipulates a specific percentage of additional CRR that banks must maintain on the incremental deposits they receive during the specified period. This additional percentage might be higher than the standard CRR. The graduated approach ensures that the impact on banks' liquidity and lending activities remains proportionate and manageable.

#### Significance

- Excessive liquidity in the banking system can lead to problems like inflation and speculative activities. **Incremental CRR empowers central banks to regulate liquidity levels**, ensuring an appropriate amount of money supports economic activities while preventing excess funds from driving inflation or creating financial imbalances.
- Central banks use the CRR, including the incremental component, to control the money supply. When tightening monetary policy is necessary, increasing the CRR restricts the amount of money banks can lend. Conversely, during economic stimulus efforts, reducing the CRR enhances credit availability, allowing central banks to exercise direct control over lending conditions.



- An oversupply of money can result in inflation. **Incremental CRR plays a vital role in maintaining price stability** by absorbing excess liquidity that could contribute to inflationary pressures. Central banks strive to balance money supply and economic activity to prevent rapid price increases that could adversely affect consumers and businesses.

### Challenges

- Setting the incremental CRR too high can lead to a liquidity shortage in the banking system.** This may restrict banks' ability to lend, impacting economic activities and financial market functioning. Severe liquidity shortages could lead to increased interest rates and market instability.
- Requiring banks to allocate a higher proportion of their funds to reserves **can reduce money available for lending and revenue generation.** This may affect banks' profitability, particularly if lending income is a significant part of their earnings. Striking a balance between reserves and profitability is a challenge.
- Effective communication is crucial to managing market expectations. If the central bank's intentions behind Incremental CRR are unclear, it may lead to uncertainty and market volatility. Clear communication about the measure's purpose, temporary nature, and expected impact is essential.

### Way Forward

- Phased implementation of Incremental CRR** allows banks to adapt without causing abrupt disruptions. This minimizes shocks to the banking system and enables banks to adjust lending and liquidity strategies gradually.
- Transparent and clear communication** is essential to ensure all stakeholders understand the rationale for Incremental CRR. Emphasizing its temporary nature, purpose, and expected outcomes can reduce uncertainty and maintain market stability.
- Incremental CRR should be part of a comprehensive set of monetary policy tools.** Central banks often use a combination of measures to manage liquidity, interest rates, and economic conditions.
- Decisions regarding Incremental CRR should rely on thorough data analysis.** Central banks must assess liquidity, economic conditions, and potential impacts on stakeholders before implementing such measures.
- Continuously monitoring Incremental CRR's impact on liquidity, lending, interest rates, and overall market stability is crucial. Flexibility to adapt to changing economic conditions ensures the tool's effectiveness.



## Conclusion

- The Incremental Cash Reserve Ratio is a valuable tool that central banks use to manage liquidity and influence monetary policy. Its temporary and targeted nature allows for effective fine-tuning of economic conditions, but it must be implemented and communicated with care to address challenges and achieve desired outcomes.



## 3.9 INDIA'S DRAFT GUIDELINES ON DARK PATTERNS

### Context

- The Union government has released draft guidelines aimed at curbing "dark patterns" used by online platforms.

### Details

- These guidelines were developed in consultation with various stakeholders, including e-commerce platforms, law firms, government bodies, and voluntary consumer organizations. A task force, including representatives from industry associations and major e-commerce platforms, contributed to drafting the guidelines.
- The Department of Consumer Affairs aims to safeguard consumer interests and promote a fair and transparent marketplace, especially in the expanding digital space. The proposed guidelines are intended to strengthen industry practices and protect consumer rights.

### Key points from the draft guidelines

- **Definition of Dark Patterns:** Dark patterns are described as deceptive design practices that use user interface (UI) and user experience (UX) interactions to mislead or trick users into taking actions they didn't intend or want to take. These practices undermine consumer autonomy, decision-making, or choice, and they can amount to misleading advertising, unfair trade practices, or violations of consumer rights.
- **Prohibited Dark Patterns:** The guidelines specify ten types of dark patterns that online platforms should avoid using. These include:
  - **False Urgency:** Creating a false sense of urgency or scarcity to encourage immediate purchases.
  - **Basket Sneaking:** Adding additional items or charges to the user's cart during checkout without their consent.
  - **Confirm Shaming:** Using tactics like fear, shame, ridicule, or guilt to nudge users into making specific purchases or continuing subscriptions.
  - **Forced Action:** Forcing users to take unrelated actions or buy additional goods or services to complete their intended transaction.
  - **Subscription Trap:** Making it difficult to cancel paid subscriptions, hiding cancellation options, or requiring payment details for free trials.
  - **Interface Interference:** Manipulating the user interface to misdirect users from desired actions.
  - **Bait and Switch:** Advertising one outcome but delivering another.
  - **Drip Pricing:** Revealing prices surreptitiously, charging higher amounts post-confirmation, advertising-free services without disclosing in-app purchases, or preventing users from availing of paid services without additional purchases.
  - **Disguised Advertising:** Posing advertisements as other types of content, such as user-generated content or news articles.
  - **Nagging:** Overloading users with unrelated requests, information, options, or interruptions that disrupt intended transactions.

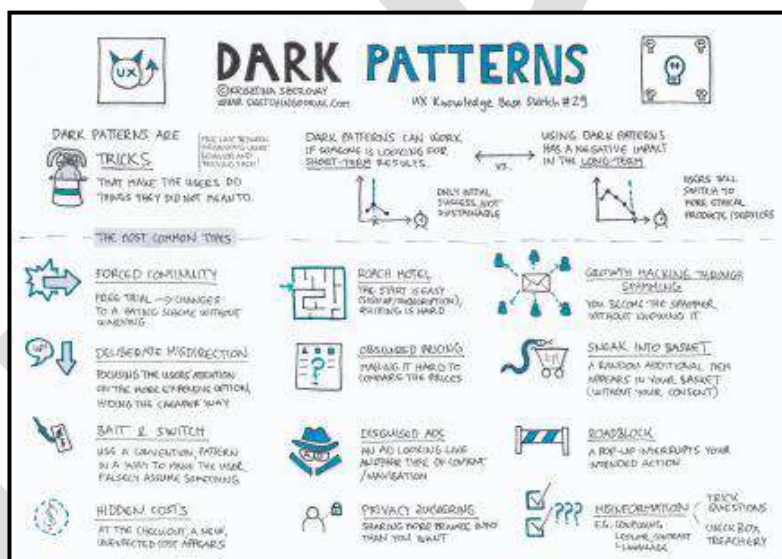
- The guidelines, once notified, will apply to all platforms systematically offering goods or services in India, as well as advertisers and sellers.

## Dark patterns

- Dark patterns have become increasingly prevalent in the digital age, as online platforms seek to optimize user interactions and boost engagement, sometimes at the expense of user autonomy and transparency. These patterns can be found on e-commerce websites, social media platforms, mobile apps, and various online services.

### Characteristics of Dark Patterns

- Dark patterns are intentionally deceptive in their design, aiming to mislead or trick users into taking actions they might not otherwise choose to take. This deception can involve the layout of a website, the placement of buttons, or the visual cues used to direct user attention.
- Dark patterns **take advantage of the psychological tendencies and cognitive biases that are inherent in human decision-making**. For example, they may create a false sense of urgency (exploiting the scarcity bias) or use social proof to encourage users to follow the crowd.
- The language used in dark patterns is often carefully chosen to confuse or mislead users. It may include ambiguous terms, jargon, or persuasive wording that makes it difficult for users to fully understand the implications of their choices.
- Dark patterns deliberately obscure important information or choices that users need to make informed decisions. This can involve hiding unsubscribe links, making it hard to find the terms and conditions, or burying important details deep within a website or app.



### Impact of Dark Patterns

- Dark patterns **can lead to privacy breaches** when users are coerced into sharing personal information they didn't intend to disclose. This data can be exploited for various purposes, including targeted advertising or even identity theft.
- Users may inadvertently make purchases or sign up for services they didn't want due to dark patterns. This can result in financial loss and frustration.
- Encountering dark patterns erodes trust in online platforms and businesses.** When users feel manipulated or deceived, it can damage the reputation of the platform and decrease user confidence in online interactions.
- Dark patterns undermine consumer rights and autonomy.** Users should have the freedom to make informed choices, and when dark patterns interfere with this, it can be considered a violation of those rights.

### Challenges Associated with Dark Patterns

- Identifying dark patterns can be challenging** because they often rely on subtle design elements and psychological tactics. Additionally, what one person considers deceptive, another might see as a legitimate marketing strategy, making detection subjective.

- **Regulating dark patterns requires a clear and precise definition** of what constitutes a dark pattern, which can vary depending on context. Establishing a legal framework to hold companies accountable for their use is a complex process that must balance consumer protection with business practices.
- **Enforcing regulations against dark patterns can be difficult**, especially when companies operate across multiple jurisdictions. Consistent enforcement and penalties for violators are essential to deter the use of dark patterns effectively.

#### Way forward for addressing and combating dark patterns

- **Establishing a regulatory framework with clear definitions and prohibitions** against dark patterns is a fundamental step. Governments can enforce these regulations to hold companies accountable for deceptive design practices.
- Industry organizations and associations can play a pivotal role in setting ethical standards for user interface design. These standards should discourage and condemn the use of deceptive practices, fostering a more ethical digital landscape.
- **Educating users about the existence and impact of dark patterns** is crucial. Awareness campaigns can help users recognize when they are encountering deceptive design and empower them to make informed decisions.
- **Online platforms should prioritize transparency** in their design choices. This includes providing clear and accessible information about data collection and sharing practices, as well as ensuring that users have easy ways to opt-out or adjust their preferences.
- **Establishing mechanisms for users to report instances of dark patterns** is essential for enforcement. Regulatory authorities can use these reports to investigate and take action against companies that engage in deceptive practices.

#### Conclusion

- These draft guidelines represent a significant step towards regulating online platforms and protecting consumers from deceptive design practices that can lead to unintended purchases and unwanted actions. Once finalized, they will provide a framework for regulatory action against platforms that engage in dark patterns.



### 3.10 IMPACT OF RISING OIL PRICES ON INDIAN ECONOMY

#### Context

- The global benchmark Brent crude surpassed the \$90-per-barrel mark for the first time in 2023 and has remained around that level.

#### Potential implications of high oil prices for India

- India is a major importer of oil, and **high oil prices can lead to an increase in the import bill**. This **trade imbalance can put pressure on the country's current account deficit**, impacting its overall economic stability.
- **India's foreign exchange reserves could be affected** if a significant portion is used to pay for increased oil imports. Depleting reserves might weaken the country's ability to withstand external economic shocks.
- The **Indian rupee could face depreciation** against other currencies if the demand for the rupee decreases due to a trade imbalance. This depreciation can further increase the cost of imports and contribute to inflationary pressures.
- High oil prices often lead to **increased transportation and production costs**. This, combined with a depreciating rupee, can contribute to domestic inflation. Inflation erodes purchasing power and can negatively impact the standard of living for ordinary citizens.
- If the government decides to absorb the increased costs instead of passing them on to consumers, **it might strain the budget**. Subsidies on essential goods and services

could become more expensive, impacting government finances.

- Persistent high oil prices can hamper economic growth by increasing costs for businesses and reducing consumer spending power. This slowdown in economic activity can have long-term consequences on job creation and overall prosperity.

## Factors that influenced oil prices

### Production Cuts

- OPEC+ countries, including Saudi Arabia and Russia, have historically used production cuts as a tool to manage oil prices. By reducing production, they can limit the supply of oil in the market, which can lead to higher prices. However, the effectiveness of these cuts can vary depending on compliance levels among member countries and the overall state of the global oil market.

### High Global Demand

- Economic growth and increased industrial activity tend to drive up the demand for oil. As the world recovers from events like the COVID-19 pandemic, demand for oil can surge. This can strain the available supply and contribute to higher prices, especially if supply does not keep pace with the rising demand.

### Geopolitical Factors

- Geopolitical tensions and conflicts in oil-producing regions can disrupt the supply chain and create uncertainty about future oil supplies. This uncertainty often leads to price spikes. Additionally, sanctions on oil-producing countries can further restrict supply and push prices higher.

### Transition to Clean Energy

- The global push for clean and renewable energy sources is changing the dynamics of the oil market. As countries and industries reduce their reliance on fossil fuels, there may be a long-term decline in oil demand. This transition can influence investor sentiment, as they consider the future viability of the oil industry, potentially affecting oil prices.

## Managing the impact of rising oil prices poses several challenges

### Fiscal Challenges

- Subsidizing fuel prices to shield consumers from the full impact of rising oil prices can strain government finances. These subsidies often require substantial budget allocations, which can limit the resources available for other critical government programs and investments in infrastructure, healthcare, education, and more.
- Balancing fiscal responsibility with the need to provide affordable energy to citizens is a key challenge. Governments must find ways to reduce subsidy burdens while ensuring that energy remains accessible to low-income populations.

### Energy Transition

- India is committed to transitioning to cleaner energy sources, such as solar and wind power, to reduce greenhouse gas emissions and combat climate change. However, the challenge lies in reducing dependence on oil while maintaining a reliable energy supply for a rapidly growing economy.
- Transitioning to clean energy requires substantial investments in renewable infrastructure, grid upgrades, and energy storage. Coordinating these investments while managing the existing fossil fuel-based infrastructure is a complex task.

### Diplomatic Relations

- Geopolitical factors can significantly impact India's ability to secure stable and affordable oil supplies. Tensions in oil-producing regions or changes in diplomatic relations with key oil suppliers can affect the reliability of oil imports.
- India may need to diversify its sources of oil imports to reduce dependence on a single supplier or region, thereby mitigating the risks associated with geopolitical tensions in specific areas.

### Inflation Management

- High oil prices can contribute to inflationary pressures through increased production and transportation costs. This can affect the cost of goods and services, impacting the

purchasing power of consumers and potentially causing economic hardship.

- Policymakers must strike a balance between controlling inflation and supporting economic growth and stability. They may use tools such as monetary policy and fiscal measures to manage these competing priorities.

## Comprehensive strategy to address these challenges effectively

### Short-term Measures

- **Gradually reduce fuel subsidies and let market forces determine fuel prices.** This can encourage conservation and reduce wasteful consumption.
- **Implement nationwide energy efficiency programs** across industries, transportation, and households. Provide incentives for adopting energy-efficient technologies and practices to reduce overall energy consumption.
- **Invest in and improve public transportation systems** in major cities. Enhanced public transport can reduce the demand for individual vehicles, decreasing fuel consumption.
- Encourage businesses to implement remote work policies where feasible. This can reduce the need for commuting, lowering fuel consumption.
- **Maintain and utilize strategic petroleum reserves effectively** to stabilize oil supply during times of crisis and prevent sudden price spikes.
- **Strengthen diplomatic ties with oil-producing nations** to ensure a stable supply of oil. Negotiate favourable trade agreements and collaborations to secure energy resources.

### Long-term Strategies

- **Increase investments in solar, wind, and other renewable energy sources.** India has significant solar energy potential. Developing these sources can reduce dependency on oil for energy generation.
- **Promote electric vehicles (EVs)** through subsidies, tax incentives, and charging infrastructure development. Encourage research and development in EV technology

to make electric vehicles more accessible and affordable.

- **Allocate funds for research in alternative energy sources,** energy storage technologies, and sustainable transportation solutions. Innovations in these areas can lead to long-term energy independence.
- **Upgrade and modernize the energy infrastructure,** including power grids and storage facilities. A robust infrastructure can handle fluctuations in demand and supply more efficiently.
- **Invest in domestic oil exploration and extraction technologies.** Enhancing domestic production can reduce reliance on imported oil.
- **Launch nationwide campaigns to promote energy conservation** and awareness. Educate citizens about the importance of reducing energy consumption in daily activities.
- **Diversify the energy mix** by investing in biofuels, natural gas, and other alternative energy sources. This diversification creates a more resilient energy sector.
- Invest in skill development programs focused on renewable energy technologies. A skilled workforce can drive innovation and implementation in the renewable energy sector.
- **Implement smart urban planning strategies** that reduce the need for extensive commuting. Develop mixed-use neighbourhoods and efficient public transport systems to minimize travel distances.
- Collaborate with other countries and international organizations on research, technology transfer, and policy development related to renewable energy and sustainable practices.

## Conclusion

- India's response to rising oil prices necessitates a proactive blend of domestic strategic planning, robust policy implementations, and diplomatic collaborations. By diversifying energy sources, promoting efficiency, and engaging in





international partnerships, India can safeguard its economy, ensure energy security, and

foster a sustainable future in an ever-changing global energy scenario

### 3.11 CHALLENGES OF PHOSPHORUS SCARCITY

#### Context

- Phosphorus is essential for agriculture but exists in limited quantities, and major reserves are controlled by a few countries, leading to geopolitical concerns.

#### Phosphorus

- Phosphorus is a **vital component of biological molecules, including DNA, RNA, and ATP (adenosine triphosphate)**. These molecules are essential for the storage and transfer of genetic information and energy within cells. ATP, often referred to as the "energy currency" of cells, stores and transfers energy required for various cellular activities.
- Phosphorus is primarily **found in the Earth's crust as phosphate rock**, which contains various minerals rich in phosphorus.
- Phosphorus is extracted from phosphate rock through chemical processes**, primarily involving the addition of sulfuric acid. This process yields phosphoric acid, which is then used to produce fertilizers and other phosphorus-containing compounds.
- Phosphorus is a **key component of fertilizers, providing essential nutrients for plant growth**. It promotes root development, flowering, and seed formation. These include superphosphate and triple superphosphate, common types of fertilizers used to replenish phosphorus in agricultural soils.
- Excess phosphorus runoff from agricultural fields and wastewater can lead to eutrophication in water bodies**. It causes algal blooms, disrupting aquatic ecosystems and depleting oxygen levels in the water. Phosphorus pollution can contaminate drinking water sources, posing risks to human and animal health.

#### Key challenges related to the scarcity of phosphorus

##### Limited Reserves

- Phosphorus is a **finite resource, primarily derived from phosphate rock mines**. These reserves are unevenly distributed globally, and some regions heavily depend on imports, making their agricultural systems vulnerable to supply disruptions and price fluctuations.

##### Rising Demand

- As the global population grows, so does the demand for food. **Modern agricultural practices heavily rely on phosphorus fertilizers to maintain high crop yields**. The increasing demand for food exacerbates the pressure on phosphorus resources.

##### Environmental Pollution

- Phosphorus runoff from agricultural fields and wastewater systems can lead to water pollution**. When excess phosphorus enters water bodies, it promotes the growth of algae,

leading to harmful algal blooms, oxygen depletion, and disruption of aquatic ecosystems. This phenomenon, known as eutrophication, has detrimental effects on water quality and biodiversity.

##### Energy Intensive Extraction

- Extracting phosphorus from phosphate rock is an energy-intensive process**. As the quality of phosphate rock declines, the energy input required for extraction increases, raising the environmental impact and cost of phosphorus production.

##### Lack of Recycling

- Phosphorus recycling from agricultural and urban waste is not yet widely practised**. Efforts to recover phosphorus from organic waste, such as manure and sewage, are limited. Increased recycling and efficient use of phosphorus are necessary to conserve this valuable resource.

##### Global Disparities

- Some regions have abundant phosphorus resources, while others are heavily reliant on imports. This disparity can create geopolitical tensions and economic imbalances, affecting food security on a global scale.

#### Lack of Awareness and Policy

- Many farmers and policymakers are not fully aware of the looming phosphorus scarcity issue. There is a need for increased awareness and the implementation of policies and regulations that promote sustainable phosphorus use and recycling.

### **Strategies to tackle the issue of phosphorus scarcity**

#### Sustainable Mining and Exploration

- Promote sustainable mining practices to extend the lifespan of existing phosphate rock reserves. Invest in research and exploration to discover new phosphate rock deposits.

#### Phosphorus Recycling

- Develop and implement effective phosphorus recycling technologies to recover phosphorus from wastewater, agricultural runoff, and organic waste. **Encourage the use of recycled phosphorus in agricultural fertilizers** to reduce reliance on finite reserves.

#### Agricultural Best Practices

- **Promote precision farming techniques that optimize phosphorus application**, minimizing waste and runoff. Provide incentives and support for farmers adopting sustainable agricultural practices, including organic farming and crop rotation.
- **Explore innovative farming techniques such as hydroponics, aquaponics, and vertical farming**, which can optimize nutrient use, including phosphorus. Research and promote phosphorus-efficient crop varieties through genetic modification and selective breeding.

#### Regulatory Measures

- Enforce stringent regulations on phosphorus emissions and discharges into water bodies to curb pollution. Implement and monitor the EU-style legislation to regulate cadmium levels in fertilizers, ensuring public health and environmental safety.

#### Research and Development

- Invest in research and development of advanced technologies for phosphorus extraction, recycling, and efficient utilization in agriculture. Support scientific studies to better understand phosphorus cycling in ecosystems and develop strategies to minimize losses.

#### International Collaboration

- Foster international collaboration between phosphorus-producing and consuming countries to ensure fair distribution and access to phosphorus resources. **Collaborate on research initiatives, knowledge sharing, and technological advancements** to address phosphorus scarcity on a global scale.

#### Public Awareness and Education

- Raise public awareness about the importance of phosphorus conservation and sustainable agricultural practices. Educate farmers, policymakers, and the general public about the efficient use of phosphorus and the consequences of its scarcity and pollution.

#### Government Policies and Incentives

- Implement policies that incentivize the adoption of phosphorus-efficient technologies and practices. Provide subsidies or tax benefits to farmers and industries adopting sustainable phosphorus management practices.

#### Diversification of Food Source

- Encourage the consumption of a diverse range of crops and reduce excessive reliance on phosphorus-intensive crops. Promote the consumption of alternative protein sources, reducing the demand for phosphorus in livestock feed.

### **Conclusion**

- Addressing the complex challenges of phosphorus scarcity and pollution is vital for ensuring global food security, protecting ecosystems, and safeguarding human health. A coordinated effort involving governments, industries, and individuals is imperative. By promoting sustainable practices, implementing stringent regulations, fostering innovation, and raising public awareness, we can mitigate the risks associated with

phosphorus depletion and pollution, paving the way for a more sustainable and secure

future.

### 3.12 EMERGING MARKETS BOND INDEX

#### Context

- India's inclusion in the Government Bond Index-Emerging Markets (GBI-EM) index indeed has substantial implications for both India's economy and the global financial markets.

#### Significance

- Inclusion in the GBI-EM index **opens the door to substantial capital inflows**. Global investors rely on this index for benchmarking and are more likely to allocate funds to India's government bonds. This can positively impact India's financial stability and liquidity in its bond market.
- Being part of a globally recognized index **enhances India's reputation among international investors**. It signals maturity, transparency, and attractiveness in its bond market, which can boost investor confidence in the broader economy.
- Inclusion in the index **provides India with an additional source of financing**, which is vital for managing fiscal deficits, funding infrastructure projects, and stimulating economic growth.
- Access to global capital markets **can potentially lead to lower borrowing costs for India**. Increased demand for government bonds due to index inclusion can result in cost savings for the government.

#### Challenges associated with this inclusion

- India's inclusion in the Government Bond Index-Emerging Markets (GBI-EM) index can indeed bring several challenges, particularly concerning market competition and foreign investor participation.

#### Market Competition

- As investors reallocate their funds to Indian government bonds, there **could be a significant shift in capital flows**. This might lead to **reduced investments in other**

**countries' government bonds that are part of the index, affecting their bond markets.** Sudden or massive outflows from these countries could destabilize their economies.

- Increased competition for capital can lead to fluctuations in bond yields and prices in various emerging market economies. If a considerable portion of investment moves to India, it **might affect the yields and pricing of bonds in other countries adversely**. This volatility can create uncertainty, making it challenging for these economies to plan for their fiscal policies and development projects.

#### Foreign Investor Participation

- **Emerging markets, including India, often face currency volatility**. Foreign investors are particularly sensitive to this risk. India must have robust mechanisms in place to manage currency risks, such as allowing hedging options, ensuring a stable exchange rate environment, and providing insurance against drastic currency fluctuations.
- **Regulatory clarity and stability are paramount for foreign investors**. Any sudden policy changes or lack of consistent regulations can deter investment. India needs to ensure that regulations are transparent, consistent, and supportive of foreign investments in its bond market.
- Taxation policies, especially withholding tax rates on interest income, significantly influence the attractiveness of bonds to foreign investors. Favorable tax treatment can encourage higher participation, while high or ambiguous tax rates can discourage investors.

#### Strategies to mitigate potential challenges

- Being prepared for front-loading can help India attract foreign capital early, addressing any immediate financial needs and ensuring a balanced demand-supply ratio, preventing extreme fluctuations.

- **Maintaining active communication with global index providers is vital.** Addressing investor concerns promptly and providing a stable environment for investment fosters trust, encouraging sustained foreign investment.
- **Investing in market infrastructure ensures efficient trading, clearing, and settlement processes.** A robust system enhances investor confidence and facilitates seamless transactions, making India an attractive investment destination.
- **Responsible fiscal policies instil confidence in investors regarding India's economic stability.** Managing deficits and borrowing practices prudently demonstrates the government's commitment to financial responsibility.
- **Offering diverse investment options caters to different investor preferences.** Maturity-

varied bonds, inflation-linked bonds, and green bonds provide choices, attracting a broader range of investors with varied risk appetites and investment goals.

### Conclusion

- India's inclusion in the GBI-EM index represents a significant opportunity for the country to strengthen its position in the global financial markets. By strategically managing the challenges and seizing the benefits, India can leverage this opportunity to attract foreign investment and promote economic growth and stability



## 3.13 SHORT ARTICLES

### Global Consensus on Digital Public Infrastructure

#### Context

- The consensus reached by the G20 Digital Economy Ministers on the definition and principles of Digital Public Infrastructure (DPI) during India's presidency in 2023 is a significant development in ensuring a more inclusive and equitable digital economy.

#### Key Highlights

- The Digital Public Infrastructure (DPI) is **a set of interoperable, open, and secure digital platforms**, that enable the delivery of economic and social opportunities to all citizens, regardless of their location, income, or background. Examples of DPI:
  - **Universal Identification Systems:** Examples like India's Aadhaar system, which provides a unique digital identity to citizens, facilitating access to various services.
  - **Digital Payments Systems:** India's Unified Payments Interface (UPI) is a prime example, making digital transactions

accessible and efficient for people across income levels.

- **Cloud Computing Infrastructure:** Robust and scalable cloud infrastructure that supports a wide range of digital services.
- The G20 countries have agreed to develop a framework that guides how to implement DPI in a manner consistent with the consensus definition and principles. This framework will help ensure that DPI is effectively and equitably deployed.
- The **consensus also includes important principles for DPI, which says that DPI should be:**
  - Accessible to all, regardless of location, income, or background.
  - Interoperable with other systems and services, ensuring seamless integration and functionality.
  - Open and transparent, with clear licensing terms, fostering collaboration and innovation.
  - Secure and resilient to cyberattacks, safeguarding the integrity and privacy of user data.

- Sustainable and scalable, allowing for long-term benefits and growth.
- **India has proposed the creation of a virtual repository of DPI called the Global Digital Public Infrastructure Repository (GDPIR).** This repository will serve as a resource for other G20 members and beyond, allowing them to access and utilize DPI resources effectively.

### Conclusion

- The consensus on DPI and the commitment to its development and implementation will play a crucial role in bridging the digital divide and ensuring that the benefits of the digital economy are accessible to all, regardless of their background or location.

## One-Hour Trade Settlement

### Context

- The Securities and Exchange Board of India (SEBI) is planning to launch a one-hour trade settlement system, which would significantly expedite the trade settlement process in the Indian securities market.

### Key Highlights

- **Trade settlement is the final step in a financial transaction** involving the transfer of funds and securities. It includes two main actions: the buyer transferring the agreed-upon amount of money to the seller and the seller delivering the purchased securities to the buyer. A trade settlement is considered complete when both these actions are successfully executed.
- **Currently, India operates on a T+1 settlement cycle**, where trade settlements occur within one day or 24 hours of the actual transactions. This cycle was introduced in January, making India the second country in the world to adopt this system for top-listed securities after China. The aim was to enhance operational efficiency, facilitate faster fund transfers, accelerate share delivery, and provide ease for market participants.
- In the proposed one-hour settlement system, when an investor sells a share, the **money**

**would be credited to their account within an hour**, and the buyer would receive the shares in their demat account within an hour, compared to the next day settlement in the T+1 cycle. This development is expected to further modernize and enhance the efficiency of India's securities market.

- **Benefits of One-Hour Trade Settlement:**

- Investors would gain quicker access to the funds from their sales. This allows for more agile decision-making, such as reinvesting proceeds or using profits for other purposes.
- Shorter settlement cycles significantly reduce risks associated with market fluctuations and counterparty risk.
- Quicker settlements enhance the overall efficiency of financial markets.
- Faster settlement times make the market more attractive to traders and investors, especially those who seek rapid turnover of their investments, such as day traders and short-term investors.

### Conclusion

- The successful implementation of a one-hour trade settlement will likely require close collaboration among various stakeholders, including stock exchanges, clearinghouses, brokers, technology providers, and regulatory bodies. It will also involve substantial investments in upgrading technology infrastructure, ensuring interoperability, and educating investors about the new settlement cycle.



## Strategic Disinvestment

### Context

- The Department of Investment & Public Asset Management (DIPAM) assumed the role of the asset valuer to conduct a comprehensive assessment of IDBI Bank's assets and provide essential support throughout the process of the Strategic Disinvestment of IDBI Bank Limited.

### Disinvestment



- Disinvestment refers to the **process of reducing or liquidating the ownership stake of a government or public entity in a business or asset.** It involves the sale, transfer, or dilution of the government's ownership of a particular entity or asset. Disinvestment can take several forms, each with its objectives and implications. Here are some common types of disinvestment:
  - **Partial Disinvestment:** Involves the sale of a minority stake in a state-owned enterprise while retaining a majority ownership position. To raise funds for the government while maintaining a level of control over the entity.
  - **Strategic Disinvestment:** Involves the sale of a significant portion of government equity to private or strategic investors. To transfer ownership and management control to the private sector, typically to improve efficiency, increase competitiveness, and reduce government involvement in the entity.

#### **Objectives of Strategic Disinvestment**

- Governments may opt for strategic disinvestment **to raise funds and reduce fiscal deficits.** The sale of state-owned assets can generate revenue that can be used for other public expenditures or debt reduction.
- Privatization can lead to **increased efficiency, productivity, and competitiveness in the privatized entity.** Private ownership often introduces market discipline, competition, and a focus on profitability and shareholder value.
- Public-sector enterprises may require regular financial injections from the government to cover losses or sustain operations. Strategic disinvestment shifts the financial burden from the government to private investors.
- By divesting non-core assets or underperforming state-owned entities, governments can reallocate resources to areas of higher priority, such as infrastructure development or social welfare programs.
- **Privatization can attract domestic and foreign investment,** leading to economic growth and job creation. Private investors

may bring new technologies, management practices, and market expertise.

- **Private ownership can foster competition within industries,** leading to innovation and consumer benefits. Competition-driven markets often provide consumers with more choices and better-quality products and services.
- In some cases, governments may strategically disinvest in entities that are considered non-strategic or where private ownership aligns with national interests. Conversely, governments may retain control in sectors critical to national security or sovereignty.

#### **Conclusion**

- Strategic disinvestment is a complex and often politically sensitive process that requires careful planning and execution to achieve its intended goals. It can be a valuable tool for governments seeking to improve the efficiency of state-owned enterprises, raise funds, and stimulate economic growth. However, the success of such initiatives depends on various factors, including market conditions, regulatory environments, and the ability to attract suitable investors.



## **Currency Chest**

### **Context**

- The Reserve Bank of India (RBI) and Kochi police have initiated action following the detection of counterfeit currency notes within a shipment from the State Bank of India (SBI) currency chest in Kochi.

### **Key Highlights**

- A Currency Chest is a crucial component of India's banking infrastructure, serving as a secure facility where the **Reserve Bank of India (RBI) stores physical currency notes and coins** to meet the cash requirements of banks and ATMs.
- Currency chests are **administered and regulated by the Reserve Bank of India (RBI).** The RBI oversees the operation of currency chests across the country.

- These currency chests are typically located within the premises of various commercial banks. While the banks host the chests, the RBI maintains full control over the currency stored within them.
- The money stored in a currency chest belongs to the RBI, not the bank where the chest is located. In essence, the bank serves as a custodian of the RBI's currency holdings.
- Security arrangements for currency chests can vary from one bank to another and one location to another. The level of security is influenced by factors such as the area's security risks and infrastructure.
  - The RBI sets specific security standards and guidelines for currency chests to ensure the safeguarding of currency assets.
- Banks hosting currency chests incur expenses related to security measures. These expenses include the cost of security personnel, equipment, and infrastructure. The RBI reimburses these security expenses to the bank, following established norms and guidelines. This reimbursement helps ensure that the currency chests maintain a high level of security and protection.
- In cases of theft or loss of currency from a currency chest, the bank where the chest is located is typically held responsible for covering the loss. The recovery procedure is governed by established guidelines and agreements between the RBI and the hosting bank. The bank may need to compensate the RBI for the lost currency.

### Conclusion

- Currency chests play a vital role in the banking ecosystem of India, as they ensure the availability of physical currency notes and coins for day-to-day transactions conducted by banks and ATMs. These facilities help maintain liquidity in the financial system while adhering to stringent security and regulatory standards set by the RBI.

## **Agriculture Infrastructure Development Cess**

### Context

- Imports of LPG, liquified propane and liquid butane will not be subject to the 15% agri cess that the government had introduced in July. This decision was announced by the government as a relief measure for the consumers of these fuels.

### Key Highlights

- The Agriculture Infrastructure Development Cess (AIDC) was introduced in the 2021-22 budget as a special-purpose tax imposed over and above the basic tax rates.
- A cess, like AIDC, is a form of tax charged or levied in addition to the base tax liability of a taxpayer. It is typically imposed by the government to raise funds for specific purposes and is not a permanent source of revenue.
  - Unlike regular taxes (e.g., income tax, GST, excise duty) that go into the Consolidated Fund of India (CFI) and can be allocated for various purposes, the revenue generated from a cess must be used exclusively for the specified purpose. Cess revenue is not typically shared with state governments and is administered more flexibly.
- AIDC was introduced to offset reductions in Basic Customs Duty (BCD), Basic Excise Duty (BED), and Special Additional Excise Duty (SAED). This was done to ensure that the overall tax incidence on consumers remains relatively stable.
- The primary objective of AIDC is to raise funds specifically for the development of agricultural infrastructure in the country. This infrastructure includes facilities like cold storage units, warehouses, market yards, and more.
- It is applied to a specific list of 29 products, including gold, silver, imported items like apples, alcohol (excluding beer), pulses, palm oil, urea, and petrol/diesel (including branded varieties).

## Conclusion

- The Agriculture Infrastructure Development Cess (AIDC) is a specialized tax introduced to fund the development of agricultural infrastructure in India. While it aims to promote agricultural growth and support farmers, it has implications for state revenues and specific products. Overall, it serves as a dedicated source of funding for initiatives that benefit the agricultural sector.

## Entazia

### Context

- ENTAZIA is an innovative biofungicide product developed by FMC India, a global agricultural sciences company.

### Key Highlights

- **ENTAZIA falls under the category of biofungicides**, which are biological pesticides used to control fungal diseases in plants. Unlike chemical fungicides, biofungicides are derived from natural sources and rely on living organisms or their byproducts to combat fungal pathogens.
- **Bacillus subtilis, the active ingredient in ENTAZIA**, is known for its ability to suppress fungal pathogens. It can directly antagonize fungal pathogens or stimulate the plant's natural defence mechanisms.
- Biofungicides like ENTAZIA are considered environmentally friendly. They have minimal impact on non-target organisms, leave no harmful residues, and align with the goals of sustainable agriculture.
- **Advantages of ENTAZIA**
  - It effectively controls bacterial leaf blight in rice crops, reducing yield losses.
  - It activates the innate defence mechanisms of treated crops against plant pathogens.
  - It fosters natural pest defence mechanisms within plants.
  - It promotes a healthy plant microbiome, enhancing plant resilience and growth.
  - It can be integrated into integrated pest management (IPM) programs alongside other bio-stimulants and synthetic

fungicides for comprehensive crop protection.



- ENTAZIA is a biofungicide designed to **protect crops from fungal diseases**, with a focus on controlling bacterial leaf blight in rice. It achieves this by utilizing Bacillus subtilis and promoting plant health and environmental sustainability.

### Conclusion

- ENTAZIA represents an environmentally friendly and sustainable solution for farmers looking to protect their crops from fungal pathogens while minimizing the negative impacts associated with chemical fungicides.



## Koraput Kalajeera Rice

### Context

- The granting of the Geographical Indications (GI) tag to 'Koraput Kalajeera Rice' is a significant development that recognizes the unique agricultural heritage of the Koraput district in Odisha.

### Key Highlights

- The GI tag has been granted to 'Koraput Kalajeera Rice,' **a rice variety cultivated and domesticated by the tribal communities of Koraput district, Odisha**, for thousands of years.
- 'Koraput Kalajeera Rice' is **known as the 'Prince of Rice' due to its distinctive characteristics**, including its appearance resembling coriander seeds, nutritional qualities, delightful aroma, excellent taste, and appealing texture.
- **It offers various health benefits**, including enhancing memory, regulating diabetes, increasing haemoglobin levels, and boosting metabolism.
- It is attributed with medicinal properties such as being antispasmodic, stomachic, carminative, antibacterial, astringent, and sedative.
- Geographical Indications (GI) are a **form of intellectual property rights** that protect

products originating from specific geographical regions with unique qualities or reputations associated with that region. GIs can be applied to various products, including agricultural, handicraft, industrial, and food products.

- GI status provides legal protection to products that originate from specific geographical regions and possess unique qualities associated with that region. In the case of 'Koraput Kalajeera Rice,' the GI status recognizes and safeguards its geographical origin and distinct characteristics. This recognition is not only significant for preserving traditional knowledge but also for supporting the economic well-being of local farmers and communities.

### Conclusion

- GI status for 'Koraput Kalajeera Rice' is a significant achievement that not only protects and promotes this unique rice variety but also supports the cultural, economic, and environmental aspects associated with its production in the Koraput district of Odisha.



## **Incremental Capital Output Ratio (ICOR)**

### Context

- The ICOR, which measures the amount of capital needed for each unit of output, decreased from 7.5 in FY12 to 3.5 in FY22.

### Key Highlights

- The Incremental Capital Output Ratio (ICOR) is a valuable economic tool used to **assess the relationship between investment and economic output (GDP) in a country or entity.**
- ICOR measures the **additional unit of capital or investment required to produce an additional unit of output or GDP.** It is calculated as the ratio of the change in capital (investment) to the change in GDP over a specific period. The formula is  $ICOR = \frac{\text{Change in Capital}}{\text{Change in GDP}}$ .

- **A lower ICOR value is generally considered favourable** because it indicates that an economy is more efficient in producing output for a given level of investment. In contrast, a higher ICOR suggests that more capital investment is needed to generate the same increase in GDP, which can indicate inefficiency in resource utilization.
- ICOR is used in economic analysis and planning to **evaluate the efficiency of investment in an economy.** It helps policymakers and analysts understand how effectively a country is using its capital to generate economic growth.
- While ICOR is a useful tool, it has limitations. One significant limitation is its **inability to capture the full complexity of modern economies.** It may not adequately account for intangible assets like intellectual property, software, and research and development (R&D), which have become increasingly important in the knowledge-based economy.
- The case of India's Five-Year Plans and ICOR illustrates how changes in investment rates can impact economic growth. The decline in India's GDP growth rate during a period when investment rates remained relatively high suggests that other factors, such as structural issues or policy challenges, may have been affecting economic performance.

### Conclusion

- ICOR is a valuable economic metric for assessing the efficiency of capital investment in generating economic output. However, it should be used in conjunction with other economic indicators and analyses to provide a comprehensive understanding of an economy's performance and challenges, especially in the context of rapidly evolving economic landscapes.

## **West Coast Refinery Project**

### Context

- India and Saudi Arabia have agreed to establish a joint task force to expedite the implementation of the west coast refinery project.

## Key Highlights

- The **West Coast Refinery Project, also known as the Ratnagiri Refinery and Petrochemicals Ltd. (RRPCL), is a significant joint venture between India and Saudi Arabia** in the energy sector.
- The project is planned to be situated on India's western coast, specifically in Ratnagiri, Maharashtra.
- The West Coast Refinery Project was **first conceptualized in 2014**. It is envisioned as **India's largest greenfield refinery** with a production capacity of 60 million tonnes per annum. It is expected to become the largest integrated refinery and petrochemical facility globally.
- The project is a joint venture involving multiple stakeholders. Initially, it was a collaboration among three of India's leading government-owned public sector oil and gas companies: Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL), and Hindustan Petroleum Corporation Limited (HPCL). These companies held equity stakes in the project at a ratio of 50:25:25, respectively.
  - In 2019, Saudi Aramco, the Saudi Arabian oil giant, and the Abu Dhabi National Oil Company (ADNOC) expressed their intent to participate in the project. They collectively acquired a 50% stake in the project.
- **Once completed, the refinery is expected to produce approximately 1.2 million barrels of oil per day**, in addition to various petroleum products manufactured by attached petrochemical plants.

## Conclusion

- India and Saudi Arabia's commitment to the West Coast refinery project and their broader energy partnership reflects their efforts to strengthen economic ties and energy cooperation. The establishment of a joint task force and monitoring committee demonstrates their intent to overcome challenges and ensure the



successful implementation of this significant project.

## Viability Gap Funding Scheme

### Context

- The Union Cabinet has approved the Scheme for Viability Gap Funding (VGF) for the development of Battery Energy Storage Systems (BESS).

### Key Highlights

- Viability Gap Funding (VGF) scheme's primary objective is to promote the development of BESS projects, with the goal of achieving 4,000 MWh of BESS capacity by 2030-31. It will provide financial support of up to 40% of the capital cost in the form of Viability Gap Funding (VGF).
  - **Viability Gap Funding (VGF) is a financial mechanism or subsidy provided by the government or relevant authorities to make certain infrastructure projects financially viable**, especially in sectors where the private sector's return on investment may be insufficient or uncertain.
- By offering VGF support, the government aims to reduce the cost of battery storage systems, making them more economically viable. This, in turn, can enhance the integration of renewable energy into the electricity grid.
- The VGF support will be disbursed in five tranches, linked to the various stages of BESS project implementation, ensuring funds are released as per project progress.
- To benefit consumers, at least 85% of the BESS project capacity will be made available to Distribution Companies (Discoms). This enhances the integration of renewable energy into the grid, reduces wastage, and minimizes the need for costly infrastructure upgrades.
- BESS developers will be selected for VGF grants through a transparent competitive bidding process. This approach encourages both public and private sector entities to participate, fostering healthy competition and attracting investments.



## Conclusion

- Viability Gap Funding (VGF) is a financial tool used by governments to encourage private sector investment in infrastructure projects that have societal benefits but may not be financially attractive to private investors alone. It plays a crucial role in bridging the financial gap and facilitating the development of essential infrastructure for economic and social development.

## Self Regulatory Organization for Fintech

### Context

- The Reserve Bank of India (RBI) has proposed the establishment of a Self Regulatory Organisation (SRO) for fintechs to address various concerns and objectives within the fintech industry.

### The reasons behind this proposal

- Fintech companies operate in a rapidly evolving landscape, and the RBI recognizes the need for them to establish and follow industry best practices that align with legal and regulatory frameworks. This **ensures responsible and ethical business conduct.**
- **Fintechs handle sensitive customer data, making data privacy and protection paramount concerns.** The RBI expects fintech companies to establish robust privacy and data protection norms in compliance with relevant data protection laws.
- The RBI wants fintechs to set standards that prevent mis-selling and ensure transparent and ethical marketing and sale of financial products and services.
- Ethical conduct within the fintech industry is crucial for maintaining trust among customers and stakeholders, emphasizing the importance of fair and honest dealings.
- **Transparency in pricing is essential for informed decision-making.** Fintech companies are expected to provide clear information about the costs and charges associated with their products and services.

## Functions of a Self-Regulatory Organization (SRO)

- SROs **facilitate communication and collaboration between fintech industry participants and regulatory authorities like the RBI, conveying industry concerns and perspectives effectively.**
- **SROs set and enforce industry standards,** ensuring consistency and fairness in professional conduct, ethical behaviour, and compliance with laws and regulations.
- **SROs provide training and awareness programs** to enhance the knowledge and skills of industry professionals, keeping them updated with best practices and regulatory requirements.
- **SROs establish mechanisms for grievance redressal** and dispute resolution within the industry, contributing to smooth industry functioning and stakeholder trust.

### Conclusion

- SROs in the fintech sector play a vital role in promoting responsible and ethical conduct, facilitating communication with regulators, and upholding industry standards. This helps create a transparent, trustworthy, and well-regulated environment for all stakeholders in the fintech industry.



## Sovereign Gold Bond (SGB) Scheme

### Context

- The Reserve Bank of India (RBI) has announced the issue price for Sovereign Gold Bond (SGB) Tranche 2 as Rs 5,923 per gram, with a discount of Rs 50 per gram for online investors using digital payment methods.

### Key Highlights

- A Sovereign Gold Bond (SGB) is a government security denominated in grams of gold. It is a **financial instrument issued by the Reserve Bank of India (RBI) on behalf of the Government of India.**
- SGBs are designed to provide individuals, HUFs (Hindu Undivided Families), trusts,

universities, and charitable institutions with an alternative to holding physical gold.

- Investors pay the issue price in cash, and the bonds are redeemed in cash on maturity. The quantity of gold for which the investor pays is protected, and they receive the ongoing market price at the time of redemption/premature redemption.
  - There may be a risk of capital loss if the market price of gold declines, but the investor does not lose in terms of the units of gold they have paid for.
- Persons resident in India, as defined under the Foreign Exchange Management Act 1999, are eligible to invest in SGBs. This includes individuals, HUFs, trusts, universities, and charitable institutions. Joint holding of SGBs is allowed.
- **SGBs are issued in denominations of one gram of gold and multiples thereof.** The minimum investment is one gram, with a maximum limit of subscription of 4 kg for individuals, 4 kg for HUFs, and 20 kg for trusts and similar entities per fiscal year.
- The **Bonds bear interest at a fixed rate (e.g., 2.50%)** per annum on the amount of the initial investment. Interest is credited semi-annually to the investor's bank account, and the last interest is payable on maturity along with the principal.
- **SGBs can be traded on stock exchanges** if held in demat form. They are also tradable as per the provisions of the Government Securities Act, 2006. SGBs can be used as collateral for loans from banks, financial institutions, and NBFCs.
- **Capital gains tax on redemption of SGBs is exempt for individual investors.**

### Conclusion

- Sovereign Gold Bonds (SGBs) present a secure and tax-efficient option for investing in gold in India. With their fixed interest rates and various benefits, they offer a viable alternative to physical gold ownership. However, investors should assess their eligibility and investment



limits before considering SGBs as part of their financial strategy.

## Interbank Call Money Market

### Context

- The Reserve Bank of India (RBI) plan to launch a pilot project for a Central Bank Digital Currency (CBDC) in the call money market.

### Key Highlights

- The RBI intends to introduce CBDCs in phases, starting with the wholesale segment of the payment system. Initially, CBDCs will be used for large-value transactions between banks and financial institutions, including those in the call money market.
  - **CBDCs will be issued by the RBI as digital tokens representing the Indian Rupee.** These tokens will be considered legal tender and can be used for financial transactions within the call money market.
  - Banks participating in the call money market will use CBDCs to settle their short-term liquidity needs. Unlike traditional methods that involve multiple intermediaries, CBDC transactions will occur directly between participating banks.
  - **The RBI plans to use blockchain or distributed ledger technology to facilitate CBDC transactions** in the call money market. Blockchain ensures the security, transparency, and immutability of transactions, offering advantages such as real-time settlement, reduced operational costs, and enhanced security.
    - The use of CBDCs and blockchain technology can **reduce operational costs associated with traditional settlement methods**, benefiting both the central bank and participating financial institutions.
    - CBDC transactions on a blockchain are transparent and traceable, providing real-time data on liquidity conditions and interest rates in the call money market, and helping market participants make informed decisions.

- The streamlined nature of CBDC transactions can enhance the overall efficiency of the call money market, allowing banks to manage their short-term liquidity needs more effectively and reducing the risk of liquidity shortages.
- **The RBI will maintain regulatory oversight over CBDC transactions** in the call money market, ensuring compliance with existing financial regulations and monetary policies.

### Conclusion

- The RBI's CBDC pilot in the call money market is a crucial initial step, but it's experimental, not a full rollout. Extensive research, testing, consultations, and evaluations are essential to determine CBDC's optimal design and address technical, legal, regulatory, and economic challenges. This pilot will offer valuable insights into the potential adoption of CBDC in India.



## Overnight Index Swap

### Context

- Indian overnight index swap (OIS) rates have reached their highest levels in 10 months. This increase is attributed to offshore paying and the triggering of stop-loss orders.

### Key Highlights

- An Overnight Index Swap (OIS) is a derivative financial contract that involves two parties agreeing on the overnight lending rate.
  - **A derivative is a financial contract whose value is derived from an underlying asset, a group of assets, or a benchmark.** Derivatives are commonly used in financial markets for various purposes, including hedging, speculation, and risk management.
- In an OIS transaction, two parties are typically involved. **One party agrees to pay a fixed short-term interest rate, while the other party agrees to pay a floating overnight interest rate,** usually based on a specific reference rate like the Mumbai Interbank Outright Rate (MIBOR) in the case of Indian OIS contracts.

- An OIS rate is **calculated daily**, and it is based on the average interest rate that institutions with loans tied to the overnight rate have paid for that particular day. This daily resetting of rates helps ensure that the OIS accurately reflects market conditions.
- A rise in OIS rates generally means that borrowing costs increase for financial institutions and other market participants. This can impact the cost of funds and lending rates in the broader financial market.
- **An increase in OIS rates can be viewed as an indicator of tightening liquidity conditions.** It suggests that there may be less liquidity available in the interbank market, making it more expensive for banks to borrow funds.
- Rising OIS rates may signal a more restrictive monetary policy stance by central banks. Central banks often use interest rates as a tool to control inflation and economic growth. An increase in OIS rates could reflect expectations of central bank actions.

### Conclusion

- OIS contracts are essential tools in the financial markets for managing interest rate risk. Changes in OIS rates can have significant implications for borrowing costs, liquidity conditions, and monetary policy expectations.

## National Payments Corporation of India

### Context

- The National Payments Corporation of India (NPCI) has introduced a suite of digital payment products aimed at enhancing the digital payments ecosystem in India.

### Key Highlights

- National Payments Corporation of India (NPCI) has introduced a suite of digital payment products, including Credit Line on UPI, UPI LITE X, Tap & Pay, Hello! UPI - Conversational Payments, and BillPay Connect. These innovations aim to foster an inclusive and robust digital payments ecosystem in India.
  - **NPCI is an umbrella organization for operating retail payments and settlement**

**systems in India.** It was incorporated in 2008 and is owned by a consortium of major banks, and has been promoted by the country's central bank, the Reserve Bank of India (RBI).

- **Credit Line on UPI:** This product allows users to access pre-sanctioned credit lines from banks via the Unified Payments Interface (UPI). It provides a convenient way for users to access credit through the UPI platform.
- **UPI LITE X:** It facilitates offline payments, making digital payments accessible even in areas with limited connectivity. This feature is particularly valuable in regions with intermittent or weak internet access.
- **UPI Tap & Pay:** It aims to boost the adoption of QR codes and Near Field Communication (NFC) technology for digital payments. Users can simply tap NFC-enabled QR codes at merchant locations to complete their payments, offering a seamless and contactless payment experience.
- **Hello! UPI - Conversational Payments on UPI:** This feature enables users to make voice-enabled UPI payments via UPI Apps, telecom calls, and IoT devices in both Hindi and English. It will soon be available in multiple regional languages, making digital payments more accessible to a broader user base.
- **BillPay Connect - Conversational Bill Payments:** This product simplifies bill payments across India through a nationalized number provided by Bharat BillPay. Users can initiate payments by sending a simple 'Hi' on a messaging app. Even customers without smartphones or immediate mobile data access can pay bills by giving a missed call. They will receive a callback for verification and payment authorization. Voice-assisted bill payments are also available through smart home devices.
- **Voice-Assisted Bill Payments:** This feature allows customers to fetch and pay their bills through voice commands on smart home devices, providing an additional level of convenience and accessibility.
- **Instant Voice Confirmations:** Users will receive instant voice confirmations for bill

payments made at physical collection centres through payment soundbox devices, ensuring transparency and reliability in the payment process.



### Conclusion

- These initiatives by NPCI aim to create a more inclusive, resilient, and sustainable digital payments ecosystem in India by leveraging technology and expanding the range of payment options available to consumers.



## Initiatives for Agriculture

### Context

- The Union Ministry of Agriculture and Farmers Welfare unveiled several initiatives aimed at revolutionizing Indian agriculture and improving the lives of farmers.

### Key Highlights of the initiatives

#### **Kisan Rin Portal (KRP)**

- Developed collaboratively by multiple government departments and organizations, the Kisan Rin Portal **aims to revolutionize access to credit services under the Kisan Credit Card (KCC) scheme.**
- It provides farmers with a comprehensive view of their data, loan disbursement details, interest subvention claims, and progress in utilizing government schemes.
- The portal facilitates seamless **integration with banks**, allowing for proactive policy interventions and strategic guidance to improve agricultural credit and interest subvention utilization.

#### **Ghar Ghar KCC Abhiyaan (Door to Door KCC Campaign)**

- This campaign, known as the "Ghar Ghar KCC Abhiyaan," is focused on **ensuring that every farmer in the country has access to credit facilities provided through the Kisan Credit Card scheme.**
- The campaign will run from October 1, 2023, to December 31, 2023. The Ministry of Agriculture has verified the data of existing KCC account holders against the PM KISAN



database and identified beneficiaries who do not have KCC accounts, with the goal of extending the benefits of the KCC scheme to them.

### WINDS Manual (Weather Information Network Data Systems)

- The WINDS initiative aims to establish a network of Automatic Weather Stations and Rain Gauges at various levels, including taluk/block and gram panchayat levels, to collect hyper-local weather data. This data will support various agricultural services and help farmers make informed decisions regarding their crops.
- The WINDS Manual provides detailed information on the initiative's functionalities, data interpretation, and practical insights on leveraging weather data for improved crop management, resource allocation, and risk mitigation.



### Conclusion

- These initiatives represent the government's commitment to farmers' prosperity, innovation, technology adoption, and efficient service delivery in the agricultural sector, with the ultimate goal of doubling farmers' income and promoting sustainable economic growth in the farming community across India.



## Outward Direct Investment (ODI)

### Context

- The Reserve Bank of India (RBI) has released data on outward direct investment (ODI) and inward foreign direct investment (FDI) for the financial year 2023.

### Key Highlights

- Total outward direct investment (ODI) by Indian firms increased by 19.46% to Rs 9.11 lakh crore (\$109 billion) in FY2023, compared to Rs 7.62 lakh crore in the previous year.
- Singapore was the largest beneficiary of Indian ODI, receiving Rs 2.03 lakh crore (\$24.48 billion), which accounted for 22.3% of the total ODI. The United States received Rs

1.24 lakh crore (13.6% share), and the United Kingdom received Rs 1.16 lakh crore (12.8% share) of Indian ODI in FY2023.

- The total FDI flow into India in FY2023 was Rs 49.93 lakh crore (\$601 billion), compared to Rs 46.72 lakh crore in the previous year. Other major contributors to FDI inflows included Singapore, the Netherlands, and Japan.
  - The United States was the largest source of inward FDI into India in fiscal year 2023, followed by Mauritius, the United Kingdom, and Singapore. The top ten countries accounted for over 90% of the total FDI inflows into India.
  - The manufacturing sector continued to attract the largest share of FDI equity, both at market value and face value. Among services, information & communication and financial & insurance activities were the major recipients of FDI.
- Outward Direct Investment (ODI) is when a domestic company expands to foreign markets via Greenfield investments, mergers, acquisitions, or joint ventures. The process includes market research, strategy development, legal compliance, and cultural adaptation.
- ODI offers benefits like market access, risk diversification, cost advantages, and global influence. However, it involves economic risks (volatility, currency fluctuations), political risks (policy changes, instability), and cultural challenges. Understanding ODI's mechanics, benefits, and challenges is crucial for successful international expansion.

### Conclusion

- These trends and data illustrate the international investment activities of Indian firms and the global landscape of outward and inward direct investment. It also underscores the significance of tax policies in influencing investment decisions.



## Serious Fraud Investigation Office

### Context

- The Serious Fraud Investigation Office (SFIO) has arrested a chartered accountant in Hyderabad in connection with his role during the demonetisation period in India.

### Key Highlights

- The Serious Fraud Investigation Office (SFIO) is **responsible for investigating corporate fraud and financial irregularities.**
- SFIO was **established in response to the recommendations of the Naresh Chandra Committee on corporate governance**, which was created by the government in 2002. The agency's formation was also influenced by stock market scams and the failure of non-banking companies, resulting in significant financial losses to the public.
- SFIO was **initially established by a government resolution in 2003**, to investigate corporate frauds. It operated within the legal framework of sections 235 to 247 of the erstwhile Companies Act 1956.
  - **Its statutory status was later accorded** under Section 211 of the Companies Act, 2013.
- SFIO operates **under the jurisdiction of the Ministry of Corporate Affairs**, Government of India.
- The agency is primarily supervised by officers from various prestigious Indian services, including the Indian Administrative Service (IAS), Indian Police Service (IPS), Indian Corporate Law Service (ICLS), Indian Revenue Service (IRS), and other Central Services.
  - SFIO also includes experts from diverse financial sectors, including capital markets, accountancy, forensic audit, taxation, law, information technology, company law, customs, and investigation.
- SFIO's main mandate is **to conduct multi-disciplinary investigations into major corporate frauds** in India. It plays a crucial role in uncovering financial irregularities and frauds that impact the corporate sector and the public.

- SFIO is headquartered in New Delhi SFIO has established regional offices in key Indian cities, including Hyderabad, Mumbai, Kolkata, and Chennai.

### Conclusion

- SFIO is a specialized agency dedicated to investigating complex corporate frauds and financial misconduct in India. It operates with a multi-disciplinary approach, drawing expertise from various sectors to uncover and address financial irregularities that impact businesses and the broader economy.

## Bima Sugam

### Context

- The Bima Sugam platform, initiated by the Insurance Regulatory and Development Authority of India (IRDAI), is aimed at modernizing and simplifying the insurance sector in India.

### Key Highlights

- The primary objective of the Bima Sugam platform is **to make the process of buying insurance policies and accessing insurance-related services easier and more convenient.**
- It is designed to serve as a **one-stop solution for consumers as well as various industry stakeholders**, including insurance companies, agents, brokers, banks, and aggregators.
- The platform will offer a wide range of services, including policy purchase, claim settlement, insurance advice, grievance redressal, and the introduction of new or sandbox insurance products.
- It will **cover a broad spectrum of insurance products**, encompassing life insurance, health insurance, motor insurance, property insurance, commercial insurance, marine insurance, agricultural insurance, and more.
- **A steering committee has been established to oversee the development and implementation** of the Bima Sugam platform. The committee comprises members from various insurance companies and industry organizations, ensuring diverse perspectives and expertise.

- The platform is expected to have an easy-to-use interface, making it convenient for online users to access information, make informed decisions when purchasing policies, and efficiently manage their insurance policies.
- The **Insurance Regulatory and Development Authority of India (IRDAI), as the regulatory authority, oversees the entire project** and will be responsible for appointing a project consultant to ideate, design, and develop the platform.
  - IRDAI is an independent statutory body **under the Ministry of Finance**. Its main objectives include protecting policyholders' interests, regulating insurance and reinsurance industries, and ensuring financial stability in the insurance sector.

### Conclusion

- The Bima Sugam platform is a transformative initiative by IRDAI to revolutionize the insurance landscape in India by offering a digital marketplace that enhances accessibility and convenience for insurance consumers and industry players. It reflects the regulator's commitment to modernize and streamline the insurance sector in the country.

## **GST Appellate Tribunal**

### Context

- The establishment of 31 GST appellate tribunal benches across India is a significant step toward streamlining the resolution of disputes related to Goods and Services Tax (GST).

### Key Highlights

- The decision to expand the GST Appellate Tribunal (GSTAT) was taken during the recent GST Council meeting.
  - The **GST Council is a constitutional body** responsible for making recommendations to the Union and State Governments on issues related to Goods and Services Tax (GST). It is chaired by the Union Finance Minister and includes representatives from the Centre and States.

- The GST Appellate Tribunal (GSTAT) is a **quasi-judicial body established to resolve disputes arising from the implementation and interpretation of GST laws**. It serves as an appellate authority that hears appeals against decisions and orders of lower authorities.
- The GSTAT has **powers similar to a civil court** under the Code of Civil Procedure, 1908. It can hear appeals, pass orders and directions, impose penalties, revoke or cancel registrations, and take measures to ensure compliance with GST laws.
- The jurisdiction of the Appellate Tribunal covers cases where appeals are filed against orders, decisions, or directions of lower authorities under GST laws. It can handle disputes related to tax assessment, liability determination, penalties, and more.
- **Appeals must be filed within 30 days of receiving an order, decision, or direction from a lower authority**. The appeal should be accompanied by necessary fees and documents.
- Fees for appeals include the full amount of tax, interest, fines, and/or penalties along with 20% of the total disputed tax amount.
- The Tribunal can confirm, modify, or annul orders and decisions. In case of a difference of opinion, decisions are taken by majority vote. Orders must be communicated to relevant parties, and a party benefiting from the order can file cross-objections.



### Conclusion

- The establishment of GST appellate tribunal benches is a significant step toward improving the efficiency of GST dispute resolution in India. It is expected to benefit both businesses and the overall business environment by reducing delays and costs associated with legal proceedings, fostering a more favourable climate for economic growth and development. The GST Council plays a crucial role in overseeing and implementing these reforms.



## Rubber Cultivation

### Context

- Project initiated by the Rubber Board, in collaboration with the Central government and the Automotive Tyre Manufacturers' Association, to expand natural rubber cultivation in the Northeastern States of India,

### Key Highlights

- India has approximately 8.5 lakh hectares of land dedicated to rubber cultivation. The majority of rubber cultivation is concentrated in Kerala, Tamil Nadu (Kanyakumari district), and Tripura.
- The Rubber Board aims to expand rubber cultivation beyond traditional rubber-producing regions, focusing on the Northeastern States of India (excluding Sikkim) and including West Bengal. The potential for rubber cultivation in these states is estimated to be around 4 lakh hectares.
  - The expansion of rubber cultivation is expected to bring socio-economic benefits to the Northeastern States, potentially creating employment opportunities and contributing to economic development. States like Chhattisgarh have also shown interest in adopting rubber cultivation.
- Rubber plants thrive in a **tropical climate with a temperature range of 20-35°C and an annual rainfall of 1500-3000 mm. They require well-drained, loamy soils with good moisture retention and a slightly acidic pH (4.5 to 6.5).**
- India's tropical climate and suitable soil conditions make it ideal for rubber cultivation. Currently, **Kerala leads in rubber production**, followed by the Kanyakumari district in Tamil Nadu, Karnataka (Malnad region), and Tripura in the Northeastern region.
- Rubber cultivation and the rubber industry are significant contributors to employment, particularly in rural areas. India's rubber exports contribute to foreign exchange earnings, helping stabilize the balance of payments. Rubber is a crucial raw material for

various industries, including the automotive and manufacturing sectors.

- Challenges:** Managing pests and diseases is essential to maintain healthy rubber plantations. Global price fluctuations can impact the income and profitability of rubber farmers. Unsustainable rubber cultivation practices can lead to deforestation, soil degradation, and chemical runoff.
- Ways to Promote Sustainable Growth:** Invest in research to develop disease-resistant varieties and sustainable cultivation practices. Explore new markets and value-added products to reduce dependence on global price fluctuations. Promote environmentally friendly practices like agroforestry and responsible pesticide use. Provide training and support to enhance productivity and income for rubber farmers. Encourage government support through subsidies, incentives, and access to credit and insurance.

### Conclusion

- The rubber industry in India is a critical contributor to the economy and foreign exchange earnings. However, it faces challenges related to pests, price volatility, and environmental concerns. To ensure its sustainable growth, India should focus on research, market diversification, sustainable practices, farmer training, and government support. These efforts will not only strengthen India's position in the global rubber market but also promote environmentally responsible and economically viable rubber production practices.



## Weather Information Network Data Systems (WINDS) Portal

### Context

- The release of the Weather Information Network Data Systems (WINDS) manual by the Finance Minister is an important development for the agricultural sector in India.

## Key Highlights

- WINDS Portal was **launched by the Union Ministry of Agriculture and Farmers' Welfare**. It will leverage advanced meteorological data analytics to provide valuable insights for decision-making in agriculture.
- The WINDS manual has been designed to offer a comprehensive understanding of the WINDS portal's features, data interpretation, and effective utilization. This is intended to empower a wide range of stakeholders, including farmers, policymakers, and agricultural enterprises, with the knowledge they need to make informed decisions related to weather and agriculture.
- WINDS will serve as a **platform for delivering crucial weather-related information and data to farmers**. This information can be instrumental in helping farmers plan their agricultural activities, manage risks associated with weather fluctuations, and optimize crop yields.
- The WINDS portal will also **provide information about the Ministry of Agriculture and Farmers' Welfare's parametric crop insurance scheme**. Additionally, it will cover non-scheme parametric insurance industry programs aimed at mitigating crop risks and reducing catastrophe-related risks in agriculture.
- One of the key priorities of the WINDS initiative is the **establishment of a robust network of meteorological stations**. This network will extend to the block and gram panchayat levels, ensuring widespread coverage. Having a vast network of weather stations will enable accurate monitoring of weather patterns, effective planning, risk assessment, and rapid responses to meteorological concerns.
- The overarching goal of the WINDS initiative is **to bridge the knowledge gap and empower decision-makers, farmers, and stakeholders at the grassroots level**. By providing access to reliable weather data and insights, WINDS aims to enhance the resilience and productivity of India's agricultural sector.

## Conclusion

- The launch of the WINDS portal and the accompanying manual is a significant step in leveraging technology and data analytics to support agriculture in India. It has the potential to improve the livelihoods of farmers, enhance agricultural productivity, and contribute to the overall growth and sustainability of the sector.

## Gold Exchange-Traded Funds (ETFs)

### Context

- Gold ETFs in India saw a surge of Rs 1,028 crore in August, the highest monthly inflow since April 2020. This shows a significant rise in investor interest and investment in Gold ETFs during that month.

### Key Highlights

- Gold Exchange Traded Funds (Gold ETFs) are a **type of investment that is backed by physical gold**. The value of these ETFs is directly tied to the prevailing market price of gold. As the price of gold goes up or down, so does the value of the Gold ETF.
- Gold ETFs are **passive investment instruments**, meaning they are designed to replicate the performance of the underlying asset, which is gold. **They do not actively trade or manage a portfolio of assets** like actively managed mutual funds.
- Gold ETF units are **listed on stock exchanges, making them highly liquid assets**. Investors can buy and sell these ETF units during regular trading hours, just like stocks, providing flexibility and easy access to gold exposure.
- **Investing in Gold ETFs is often more cost-effective than buying physical gold**. Investors are spared the expenses associated with storing, insuring, and transporting physical gold. Additionally, management fees for Gold ETFs are generally lower compared to actively managed funds.
- Depending on the tax laws in a particular jurisdiction, **Gold ETFs may offer tax advantages compared to owning physical**

- **gold.** These advantages can include tax efficiency and ease of reporting.
- Gold ETFs provide an accessible way for various types of investors, including retail investors, to invest in gold. They eliminate the barriers associated with buying and storing physical gold, making it easier for a broader range of people to participate in the gold market.
- While Gold ETFs offer many advantages, **they are not without risks.** The value of a Gold ETF can still be influenced by factors such as changes in the gold market, currency fluctuations, and management expenses. Additionally, they are subject to general market risks, similar to stocks and other securities.

### Conclusion

- Gold Exchange-Traded Funds (ETFs) offer an accessible and liquid way for investors to gain exposure to the price of gold. They provide diversification, convenience, and transparency in gold investments, making them a popular choice among investors seeking exposure to the precious metal. However, like all investments, investors should carefully assess their financial goals and risk tolerance before investing in gold ETFs.



## **Dividend Distribution Tax**

### Context

- The ruling by the Income Tax Appellate Tribunal (ITAT) against Cognizant Technology Solutions India regarding the payment of Dividend Distribution Tax (DDT).

### Key Highlights

- Dividend Distribution Tax (DDT) was a tax levied by the Indian government **on Indian corporations based on the amount of dividends they paid to their shareholders.** The primary purpose of DDT was to tax the company distributing dividends rather than the individual shareholders receiving those dividends.

- DDT was first introduced in 1997 and was governed by Section 115-O of the Income Tax Act. Under this provision, Indian companies were required to pay DDT when they declared, paid, or distributed dividends to their shareholders.
- Initially, the tax rate for DDT was set at 15% of the gross amount of the dividend. However, the effective rate often exceeded 20.5% when surcharges and cess were added. This made it a significant tax liability for companies distributing dividends.
- **In 2018, the Finance Minister proposed an extension of DDT to equity mutual funds.** This meant that mutual fund companies were also liable to pay DDT on the dividends they distributed to their unit holders, impacting the returns received by mutual fund investors.
- A significant change occurred **in the 2020 Union Budget when the Finance Minister announced the elimination of the Dividend Distribution Tax.** This marked a shift in India's tax structure related to dividends. With the removal of DDT, the responsibility for paying dividend taxes shifted from corporations to individual investors.
- **Following the removal of DDT, individual shareholders are now required to include their dividend income in their total taxable income and pay taxes on it at their applicable income tax slab rates.** This means that shareholders are now responsible for paying taxes on the dividends they receive, rather than the companies distributing those dividends being taxed.

### Summary

- DDT was an Indian corporate tax on dividend payouts, aiming to tax companies, not shareholders. Introduced in 1997 with an initial 15% rate, it often exceeded 20.5% due to surcharges. In 2020, DDT was eliminated, shifting dividend tax responsibility from corporations to individual investors, who now pay based on their income tax rates.





## Credit Information Companies

### Context

- The Reserve Bank of India (RBI) has issued a directive for Credit Information Companies (CICs) to develop a common Data Quality Index (DQI) specifically for the commercial and microfinance segments.

### Key Highlights Credit Information Company (CIC)

- A Credit Information Company (CIC) in India **plays a significant role in the financial sector by collecting, managing, and providing access to financial data related to individuals' credit history and financial behaviour.**
- CICs must be **established as companies and registered under the Companies Act 1956.** They need to obtain a Certificate of Registration from the Reserve Bank of India (RBI) to operate legally. This ensures that CICs adhere to regulatory standards.
- All CICs in India are regulated and supervised by the RBI.** The RBI ensures that CICs follow the provisions laid out in the Credit Information Companies Regulation Act (CIC Act), 2005, and other guidelines and regulations. The Credit Information Companies, Regulations, and Rules Act, 2006, also supplement the regulatory framework governing CICs.
- CICs collect financial data from their member banks and financial institutions.** This data includes information about loans, credit cards, and other financial activities. Member institutions are required to share this data with CICs to ensure a comprehensive view of an individual's credit history.
- Using the collected data, **CICs compile Credit Information Reports (CIR) for individual**

**consumers.** These reports contain details about an individual's credit history, including both positive and negative aspects. Additionally, CICs calculate Credit Scores, which are numerical representations of an individual's creditworthiness based on their financial behaviour.

- Credit history data is typically categorized by CICs into two primary segments:** negative data and positive data. Negative data may include late payments, defaults, or other adverse credit events, while positive data comprises records of punctual payments and responsible credit management.

- There are **four licensed Credit Information Companies operating in India:**

- Credit Information Bureau (India) Ltd (CIBIL)
- Equifax Credit Information Services Pvt Ltd
- Experian Credit Information Company of India Pvt Ltd
- CRIF High Mark Credit Information Services Pvt Ltd



### Conclusion

- CICs play a crucial role in facilitating informed lending decisions for banks and financial institutions, helping them assess the creditworthiness of individuals and manage credit risk effectively. They also empower individuals to monitor and improve their credit profiles by providing access to their credit reports and scores.

## Basel-III Capital Framework

### Context

- The Reserve Bank of India (RBI) has introduced the Basel III capital framework for All India Financial Institutions (AIFIs), a significant regulatory development in the Indian financial sector.

### Key Highlights

- The Basel III capital framework for AIFIs is set to come into effect from April 2024. This means that AIFIs will need to comply with the new capital adequacy norms and other guidelines specified by the RBI starting from that date.
- The **Basel III framework applies to five All-India Financial Institutions, which are regulated by the RBI.**

- These institutions are the Export-Import Bank of India (EXIM Bank), the National Bank for Agriculture and Rural Development (Nabard), the National Bank for Financing Infrastructure and Development (NaBFID), the National Housing Bank (NHB), and the Small Industries Development Bank of India (SIDBI).
- AIFIs will be required to **maintain a minimum total capital of 9% by April 2024**. This includes a minimum tier-I capital requirement of 7% and a common equity tier-I (CET-1) capital requirement of 5.5%. The capital adequacy norms are aimed at ensuring that AIFIs have sufficient capital to cover their risks.
- The RBI has imposed restrictions on AIFIs' investments in capital instruments of banking, financial, and insurance entities. **AIFIs are limited to investing up to 10% of their capital funds** in such instruments. Additionally, they cannot acquire a fresh stake in a bank's or AIFI's equity shares if it leads to their holding exceeding 5% of the investor's equity capital.
  - AIFIs' equity investment in a single entity is capped at 49% of the investor's equity. However, if the acquisition is against AIFI's claims, the stake must be reduced below 10% within three years.
- The RBI emphasizes the importance of effective and efficient capital planning for AIFIs. This includes assessing risks to which AIFIs are exposed and implementing risk management processes to mitigate these risks. The framework also requires forward-looking stress testing to evaluate the potential impact on earnings and capital during economic downturns.

### Basel III framework

- The Basel III framework is a **set of international banking regulations developed by the Basel Committee on Banking Supervision (BCBS)**. It was introduced as a response to the financial crisis of 2007-2008 to strengthen regulation, supervision, and risk management within the banking sector.
- It aims **to enhance the stability and resilience of the global banking system** by imposing stricter capital requirements and introducing new regulatory requirements on bank liquidity and leverage.
- One of the key components of Basel III is the focus on capital adequacy. **Banks are required to maintain higher levels of capital to withstand financial stress and economic downturns.**
- The framework introduces new definitions of regulatory capital and establishes minimum capital requirements, including Common Equity Tier 1 (CET1) capital, Tier 1 capital, and Total Capital. CET1 capital is considered the highest quality capital and includes common equity instruments and retained earnings.

### Conclusion

- The introduction of the Basel III capital framework for AIFIs is aimed at strengthening the financial stability and risk management practices of these institutions. It ensures that they have adequate capital to support their operations and withstand economic challenges while promoting responsible investment practices.

## **RoDTEP Scheme**

### Context

- The extension of the RoDTEP (Scheme for Remission of Duties and Taxes on Exported Products) scheme until June 2024 is a significant development for India's exporting community and the competitiveness of Indian products in the global market.

### Key Highlights

- The **RoDTEP scheme replaced the Merchandise Exports from India Scheme**

(MEIS). It is designed to address the limitations of MEIS and provide a more comprehensive mechanism for refunding taxes and duties on exported products.

- The primary objective of the RoDTEP scheme is **to refund exporters for central, state, and local duties or taxes that were previously not refunded**. This helps reduce the overall cost of production and distribution for exporters, making Indian products more competitive in the global market.

- The RoDTEP Committee, established within the Department of Revenue, plays a crucial role in determining the refund rates for different export sectors. These rates are calculated as a percentage of the Freight On Board (FOB) value of exports and vary depending on the sector.
- Rebates under the RoDTEP scheme are issued in the form of transferable duty credits or electronic scrips (e-scrips), which can be used to pay various duties and taxes. This facilitates flexibility in utilizing the benefits accrued under the scheme.
- By reimbursing taxes on various aspects of production and transportation, such as power charges and VAT on fuel, the scheme enhances the competitiveness of Indian products in global markets. This is expected to lead to increased trade flows and export numbers.
- The scheme aims to bring Indian exporters on par with international standards by offering affordable testing and certification services domestically. This reduces reliance on international organizations and contributes to the growth of the economy and the working capital of businesses.
- One of the benefits of the RoDTEP scheme is the automation of tax assessment for exporters, including streamlined access to Goods and Services Tax (GST) refunds. This simplifies the process and improves the ease of doing business for exporters.

### Conclusion

- The RoDTEP scheme is a vital initiative for boosting India's exports, reducing the tax and duty burden on exporters, and enhancing the competitiveness of Indian products in global markets. Its extension provides continued support to the exporting community and reinforces India's commitment to expanding its presence in international trade.



## Wilful Defaulters

### Context

- The Reserve Bank of India (RBI) has proposed significant revisions to the guidelines for handling wilful defaulters.

### Key Highlights

- The **definition of wilful default has been broadened** to include a wider range of cases where borrowers intentionally default on their loans.
- Lenders will need to **examine the 'wilful default' aspect in all accounts with outstanding amounts of ₹25 lakh and above.** The process of classification as a wilful defaulter must be completed within six months of the account being classified as a Non-Performing Asset (NPA). This is a significant change as there was no specific timeline in the previous regulations.
- Lenders can identify and classify a person as a wilful defaulter after an examination of evidence by an Identification Committee. This committee will issue a show-cause notice to the concerned person for submissions. **The defaulter will have an opportunity to present their case against the proposal within a reasonable time.**
- **Non-whole-time directors, including independent and nominee directors, will not be considered wilful defaulters** unless it is conclusively established that the wilful default was done with their consent or connivance, or they were aware of the default.
- **No additional credit facility can be granted by any lender to a wilful defaulter** or any entity associated with them. This includes subsidiary companies, joint ventures, or associate companies where the wilful defaulter is associated as a promoter, director, or in a managerial position. This bar on additional credit facility will be effective for up to one year after the wilful defaulter's name has been removed from the List of Wilful Defaulters (LWD) by the lender.
- Wilful defaulters will **not be eligible for the restructuring of credit facilities.** Lenders can

initiate legal and criminal proceedings and demand penal charges where applicable.

- The revised framework also addresses the treatment of wilful default loans sold to Asset Reconstruction Companies and their status under the Insolvency and Bankruptcy Code.

### Conclusion

- The Reserve Bank of India's proposed revisions in wilful defaulter guidelines represent a pivotal step toward stricter accountability and transparency in the banking industry. By imposing stringent timelines, broadening the definition, and excluding non-consenting directors, the RBI aims to curb intentional defaults and enhance responsible lending practices. These changes underscore the central bank's commitment to fostering a more resilient and secure financial environment in India.



## Copyright Infringement

### Context

- The case between Humans of Bombay (HOB) and People of India (POI) revolves around allegations of copyright infringement and passing off.

### Copyright Infringement

- Copyright protection **extends to a wide range of creative works**, including literary, dramatic, musical, and artistic works, as well as films and sound recordings.
- **Copyright owners have exclusive rights**, including the right to reproduce, communicate to the public, adapt, and translate their work.

## Angel Tax

### Context

- The Union Finance Ministry introduced final valuation rules for foreign and domestic investors in unlisted companies under the new angel tax mechanism proposed in the Finance Act 2023.

### Key Highlights

- The rules now **include compulsorily convertible preference shares (CCPS) in the valuation process**, addressing concerns raised by the industry, especially startups. The valuation of CCPS can be based on the fair market value of unquoted equity shares.

- **Copyright infringement occurs when someone uses a substantial part of a copyrighted work** without proper authorization from the copyright owner. This can include both direct copying and indirect copying, such as creating derivative works that are substantially similar to the original.



### Substantial Imitation

- Substantial imitation is a crucial concept in copyright law. It focuses on the extent to which one work imitates another, considering not only the quantity but also the quality or importance of the copied elements.
- Even if only a small but distinctive part of a copyrighted work is copied, it can still be considered infringement if it is essential to the original work's overall expression or character.

### Passing Off

- **Passing off is primarily a concept in trademark and unfair competition law.** It deals with situations where one entity misrepresents its products or services in a way that leads to consumer confusion.
- To establish passing off, the plaintiff typically needs to demonstrate that the defendant's actions have caused or are likely to confuse consumers regarding the source or origin of the products or services.
- **Passing off can involve various elements, including the use of similar names, logos, packaging, or marketing strategies** that create an impression of association with or endorsement by another well-established business.

- Angel tax, an income tax of 30.6%, is levied when unlisted companies issue shares to investors at a price higher than the fair market value. **Previously, it applied only to investments made by resident investors, but the Finance Act 2023 extended it to non-resident investors from April 1, 2024.**
- **Five valuation methods have been prescribed for non-resident investors**, including a comparable company multiple method, probability-weighted expected return method, option pricing method, milestone analysis method, and replacement cost method.
- The Finance Ministry exempted investors from 21 countries, including the US, UK, and France, from angel tax for non-resident investment in Indian startups. However, certain countries like Singapore, Netherlands, and Mauritius were not included in the exemption list.
- These changes are designed to bridge the gap between the rules outlined in the Foreign Exchange Management Act and the Income Tax Act, creating a more conducive environment for investments in Indian startups, both from domestic and international investors.



### Angel tax

- The term "angel tax" refers to the tax that is levied on the excess amount when a startup company issues shares to investors at a price more than its fair market value.
- The provision was **introduced in India in 2012 with the aim of discouraging the generation and utilization of unaccounted money through investments in closely held companies, particularly startups.**
- In the context of this tax, fair market value (FMV) is the estimated price that a willing buyer and a willing seller would agree upon in an open and unrestricted market when they have reasonable knowledge of the asset and are under no compulsion to buy or sell. If the shares of a startup are issued at a price higher than their fair market value, the excess amount is treated as income and taxed under the angel tax provision.

## 3.14 SNIPPETS

### Salem Sago



- Salem Sago, known as Javvarisi, in Tamil Nadu, has been granted a Geographical Indication (GI) tag, ensuring brand protection and quality promotion.
- It's derived from tapioca roots with 30-35% starch content and holds cultural significance in Indian cuisine. Over 80% of India's sago comes from Salem (Tamil Nadu).
- This versatile product finds applications in various industries beyond food, such as paper, construction, textiles, cosmetics, and more.
- The GI tag will preserve its regional identity, benefit local farmers, and expand its market presence, bolstering the Salem sago industry.





## Nyukmadung Dairy

APTI PLUS

- The Indian Council for Agricultural Research-National Research Centre on Yak has inaugurated a unique yak milk parlour in Nyukmadung village, West Kameng district, Arunachal Pradesh.
- The primary objective is to enhance the profitability of yak farming by promoting yak milk and its various derivatives.
- Yaks, specifically the *Poephagus grunniens* species, play a vital role in sustaining the livelihoods of highland ethnic communities residing in the Himalayan and trans-Himalayan regions, they contribute to these communities by providing milk, meat, fibre, hides, dung, and serving as a means of transportation.
- Yak milk and milk products are crucial components of the diet for these highland communities, who endure harsh, oxygen-deprived environments without access to vitamin and mineral supplements.



### 3.15 1 MAINS & 5 MCQs

**Q1. What are the key drivers of inflation in India, and how do they affect the country's economy and society? What are the hurdles India encounters in controlling inflation, and what steps or approaches should be explored to effectively tackle this issue in the future?**

#### Answer

- Inflation refers to the sustained increase in the general price level of goods and services in an economy over a period of time, leading to a decrease in the purchasing power of a currency. It is typically expressed as an annual percentage and is measured by various indices, such as the Consumer Price Index (CPI) and the Wholesale Price Index (WPI). Inflation can have significant economic and social implications, affecting individuals, businesses, and the overall stability of an economy.

#### Key drivers of inflation in India

- Demand-pull inflation results from increased demand for goods and services surpassing their supply, often driven by factors like rising consumer spending, government expenditure, and strong economic growth.
- Cost-push inflation occurs when rising production costs, such as wages, raw materials, or supply chain disruptions, lead to higher prices, independent of increased demand.
- Imported inflation is the vulnerability to inflationary pressures stemming from

fluctuations in global prices, exchange rates, and international economic conditions due to the country's reliance on imported goods and commodities.

- Fiscal policies (deficit spending) and central bank actions (interest rate changes) influence inflation, with loose policies stimulating inflation and tight policies helping to control it.
- Exchange rate fluctuations, especially currency depreciation, can result in increased import costs, thereby contributing to inflation, and are influenced by factors like international trade balances and capital flows.

#### Effects of inflation on India's economy and society

- Inflation erodes the real income of individuals and reduces their ability to purchase goods and services, especially for those with fixed incomes.
- High and volatile inflation can create economic uncertainty, making it difficult for businesses to plan and invest, which can hinder economic growth.
- Inflation can disproportionately affect low-income individuals and households, widening income inequality if wages do not keep pace with rising prices.
- To combat inflation, central banks may raise interest rates, which can increase borrowing costs for businesses and consumers, potentially slowing economic activity.

### Hurdles in controlling inflation in India

- India faces structural challenges, such as supply-side bottlenecks, inadequate infrastructure, and inefficiencies in the distribution of goods, which can contribute to inflationary pressures.
- Food prices are a significant component of India's inflation, and factors like weather-related disruptions and supply chain inefficiencies can lead to fluctuations in food prices.
- Persistent fiscal deficits can result in increased government spending, which can add to inflationary pressures.
- India is vulnerable to global economic and geopolitical events that can impact the prices of essential commodities like oil and food.
- Policy measures to control inflation, such as subsidies and price controls, are often plagued by inefficiencies and corruption, limiting their effectiveness.

### Approaches to Tackle Inflation in India

- Addressing supply-side issues like improving infrastructure, reducing bureaucratic red tape, and promoting agricultural productivity can help mitigate inflationary pressures.

- Implementing prudent fiscal policies to reduce budget deficits can help reduce government spending and inflationary pressures.
- The central bank should use its monetary tools, such as interest rates, to maintain price stability.
- Improved food distribution and storage systems, as well as reforms in the agricultural sector, can help stabilize food prices.
- Managing exchange rate fluctuations and building foreign exchange reserves can mitigate the impact of imported inflation.
- Expanding access to financial services can help individuals and businesses better manage their finances and cope with inflation.

### Conclusion

- Controlling inflation in India requires a multifaceted approach that addresses both demand and supply-side factors. Structural reforms, prudent fiscal and monetary policies, and targeted measures to manage food prices and supply chain issues are crucial in managing inflation effectively and fostering economic stability and growth. Additionally, continuous monitoring and timely policy adjustments are essential to respond to changing economic conditions and global factors that influence inflation in India.

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### Q2. Consider the following statements in the context of the 'Koraput Kalajeera Rice':

1. Geographical Indications (GI) Tag awarded to 'Koraput Kalajeera Rice'.
2. 'Koraput Kalajeera Rice' has been cultivated and domesticated by tribal communities in Bihar.
3. This rice variety is often referred to as the 'Prince of Rice' due to its unique characteristics.
4. 'Kalajeera Rice' is believed to offer various health benefits according to ancient texts.

How many of the above statement is/are correct?

- A) Only one
- B) Only two
- C) Only three
- D) All four

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### Q3. Consider the following statements in the context of the Sovereign Gold Bond Scheme (SGBS):

1. The bonds are denominated in grams of gold and have a flexible interest rate, payable semi-annually.
2. The bonds are issued by the Union Finance Minister on behalf of the Government of India.
3. The bonds have a maturity period of 8 years, with an option to redeem them after 5 years.
4. The bonds are traded on the stock exchanges, which provide investors with an exit option.

How many of the above statement is/are correct?

- A) Only one
- B) Only two
- C) Only three

D) All four

**Q4. Consider the following statements in the context of Cess:**

1. It is collected for a specific purpose, and the revenue generated from it must be used exclusively for that purpose.
2. If the collected cess goes unspent in a particular year, it carries over to the next year.
3. Cess revenue is shared with state governments.
4. The procedure for introducing, modifying, or abolishing a cess is generally simpler and more flexible.

**How many of the above statement is/are correct?**

- A) Only one
- B) Only two
- C) Only three

D) All four

**Q5. The term "ENTAZIA" was frequently seen in the news, it is related to:**

- A) Malware
- B) Ancient Tamil Script
- C) Biofungicide
- D) Programming language

**Q6. The term "Dark pattern" is frequently seen in the news, it is related to:**

- A) A design choice that guides users towards a desired action
- B) A design choice that manipulates users into doing something they don't want to
- C) A design choice that enhances the user experience and satisfaction
- D) A design choice that violates the user's privacy and security

ANSWERS: 2) c, 3) b, 4) c, 5) c, 6) b

## 4. DEFENSE & SECURITY

### 4.1 MARITIME INFRASTRUCTURE PERSPECTIVE PLAN (MIPP)

#### Context

- The Maritime Infrastructure Perspective Plan (MIPP) for developing maritime infrastructure in India, was unveiled by the Minister of State for Defence, at the Naval Commanders Conference.



#### Features of the Maritime Infrastructure Perspective Plan (MIPP)

- The MIPP is a **15-year roadmap designed to synchronize and enmesh the infrastructure requirements of the Navy**. It takes a holistic approach to address the Navy's infrastructure needs.
- The plan **aligns with the government's vision for sustainable infrastructure development**, emphasizing compliance with broader policy directives, including the PM Gati Shakti project, disaster resilience, and transitioning to net-zero carbon footprints.
- The plan includes a mechanism for regular reviews to assess the status of decisions made during previous editions. This ensures accountability and course correction if needed.
- The **introduction of the family logbook and electronic service document project** aims to provide financial support and efficient record-keeping for naval civilian personnel and their families.
- The Navy Chief emphasizes the importance of being prepared for responsibilities in the Indian Ocean Region as part of the Vision SAGAR initiative. This involves **working closely with other branches of the military** to enhance jointness and integration.
- The Navy is actively **pursuing indigenous projects in critical technology** areas like artificial intelligence, tactical communications, cyber security, and combat management systems to enhance its operational capabilities.

- New uniform items are being introduced to enhance comfort, hygiene, and functionality for naval personnel.

#### Significance of the Plan

- The plan ensures that the **Navy is well-prepared to meet strategic and operational challenges** in various maritime domains, including the Indian Ocean Region.
- By revising rules and regulations and focusing on indigenous projects, the Navy aims **to reduce dependence on external sources, promoting self-reliance in defence capabilities**.
- The family logbook **provides financial security and support for naval civilian personnel and their families** during emergencies or unforeseen events.
- Collaboration with other branches of the military fosters jointness and integration, enhancing the overall effectiveness of India's defence forces.

#### Challenges

- Implementing a comprehensive 15-year plan **requires significant financial and logistical resources**.
- Keeping pace with rapid technological advancements can be challenging and may **require continuous updates and investments**.
- Ensuring alignment with broader government policies and initiatives** requires effective interagency coordination.
- As the Navy embraces digitalization, it must also address cybersecurity challenges to protect sensitive data.

#### Way Forward

- Careful allocation and management of resources will be essential to execute the plan effectively.

- **Regular reviews should continue** to assess progress and adapt to changing circumstances.
- Maintaining a focus on emerging technologies and innovation will be critical to staying ahead in the maritime domain.
- **Collaboration with other government agencies** and the private sector can help address infrastructure challenges effectively.
- Robust cybersecurity measures should be integrated into digital initiatives to safeguard sensitive information.
- Personnel should be trained to make the most of digital tools and technologies.
- Ensuring that the broader public understands the significance of these infrastructure

developments can help garner support and resources.

### Conclusion

- The Naval Infrastructure Plan represents a strategic effort to enhance the capabilities and readiness of the Indian Navy. It aligns with the government's vision for sustainable development, self-reliance, and technological advancement while addressing challenges related to resource allocation and cybersecurity. Continuous review and adaptation will be essential to its successful implementation.

## 4.2 DEFENSE SECTOR INDIGENISATION

### Context

- The Indian Air Force (IAF) has taken delivery of its first C295 aircraft, marking a significant milestone in India's military aviation and the "Make in India" initiative for military aircraft production.

#### C295 Aircraft Overview

- The C295 is a versatile tactical transport aircraft capable of performing various missions, including troop and cargo transport, maritime patrol, surveillance, reconnaissance, close air support, medical evacuation, VIP transport, and airborne firefighting.
- It **can carry up to nine tonnes of payload** or 71 personnel, has a **maximum cruise speed of 260 knots**, and is equipped for air-to-air refuelling.
- The aircraft is powered by two Pratt & Whitney turboprop engines and **can operate at altitudes of up to 30,000 feet**, making it suitable for a range of missions.
- The **C295s will replace the ageing Avro fleet** of the IAF, which has been in service since the 1960s. This modernization will enhance the IAF's capabilities for troop and material transport across the country.

### Defence sector indigenization

#### About

- Defence sector indigenization refers to the **process of developing and producing defence equipment and technology within a country's borders**, reducing reliance on imports and promoting self-sufficiency in defence capabilities. In India, defence indigenization has been a long-standing goal since gaining independence in 1947.

### Significance of Defense sector indigenization

#### Reduced Dependence and ensured Strategic Autonomy

- India's historical dependence on foreign countries for defence equipment has made it vulnerable to geopolitical pressures and supply disruptions. Developing indigenous capabilities reduces this dependence, **ensuring a consistent supply of critical defence assets during times of need**.
- Relying on indigenous capabilities provides India with greater strategic autonomy. It **allows the country to make decisions based**



on its national interests rather than being influenced by the policies and agendas of foreign suppliers.

- The ultimate goal of defence indigenization is to enhance national security. A robust domestic defence industry ensures that India can meet its defence needs promptly and effectively, safeguarding its sovereignty and territorial integrity.

#### Technology Transfer

- Acquiring and developing technology domestically not only saves foreign exchange but also enhances India's technological capabilities. This can lead to the development of cutting-edge defence systems and potentially create opportunities for technology exports.

#### Cost-Efficiency

- Long-term cost savings are a significant advantage of defence indigenization. While the initial investment in building domestic capabilities may be high, it often results in lower operational and maintenance costs over the lifespan of defence equipment. Additionally, it reduces the impact of currency fluctuations and international market dynamics on defence budgets.

#### Economic Growth

- The defence sector can be a catalyst for economic growth. It generates employment opportunities, supports local industries, and attracts foreign investments, contributing to economic development.
- The advancements made in the defence sector can have ripple effects throughout the broader economy. Technologies developed for defence purposes often find applications in civilian sectors, driving innovation and economic growth in these areas as well.

### **Several steps to promote defense sector indigenization**

#### Make in India

- Encouraging domestic production and manufacturing, especially in the defence sector, is a core objective of the "Make in India" initiative. It aims to bolster India's

manufacturing capabilities and reduce dependence on imports.

#### FDI Policy

- Liberalizing the foreign direct investment policy in the defence sector has facilitated greater participation by foreign companies in joint ventures. This policy change encourages technology transfer, investments, and collaboration between Indian and foreign defence firms. The policy allows for FDI up to 100% through the government approval route.

#### Offset Policy

- The offset policy ensures that a portion of the contract value from defence procurement is reinvested in India's defence sector by foreign defence suppliers. This policy incentivizes foreign companies to contribute to India's domestic defence industry through technology transfer, investments, and partnerships.

#### Innovations for Defence Excellence (idEX) initiative

- The idEX initiative was launched in 2018 to promote innovation in the defence sector. Under this initiative, the government provides funding and support to start-ups and entrepreneurs to develop innovative defence technologies.

### **Obstacles to India's efforts in achieving defence sector indigenization**

#### Lack of Infrastructure

- Developing a robust defence industry requires state-of-the-art infrastructure and research facilities. Insufficient infrastructure can slow down research, development, and production processes, making it challenging to achieve self-reliance in defence manufacturing. Investments in infrastructure development are crucial to overcome this challenge.

#### Bureaucratic Delays

- India's complex procurement procedures and bureaucratic delays can result in protracted timelines for acquiring indigenous defence equipment. Streamlining procurement processes, reducing red tape, and improving

efficiency within the defence acquisition ecosystem are essential steps to mitigate these delays.

#### Technological Gaps

- In some cutting-edge technology areas, India may lag behind global leaders. Collaborating with foreign partners can help bridge these technological gaps through knowledge transfer and joint development efforts. Forming strategic partnerships with advanced defence technology countries can accelerate indigenous capabilities.

#### Budget Constraints

- Adequate funding is vital for research and development, as well as for the production of indigenous defence equipment. Budgetary constraints can limit the scale and pace of indigenization efforts. **Ensuring consistent and adequate funding** for defence R&D and production is critical to overcoming this challenge.

#### Quality Control

- **Ensuring the quality and reliability of indigenous defence equipment** is crucial for operational effectiveness and safety. Establishing stringent quality control processes, adherence to international standards, and continuous monitoring and improvement mechanisms are essential to address this challenge.

### **Proposed strategies for defence sector indigenization in India**

#### Investment in R&D

- India should significantly increase its investment in research and development (R&D) within the defence sector. This **increased funding will support the creation of cutting-edge technologies and the development of indigenous defence solutions.** By allocating resources to R&D initiatives, India can address technological gaps and remain at the forefront of defence innovation.

#### Streamlined Procurement

- The defence **procurement processes need to be simplified and made more efficient.** This includes reducing bureaucratic red tape,

ensuring transparent decision-making, and minimizing delays in acquiring critical equipment. Streamlining procurement will enable the timely acquisition of essential defence assets.

#### Public-Private Partnerships

- **Encouraging collaborations between the public and private sectors is imperative.** Public-private partnerships can harness the strengths of both sectors. The government should create a conducive environment for private defence firms to participate in research, development, and production, ultimately bolstering self-reliance in defence manufacturing.

#### Skill Development

- Investment in skill development and training programs is essential. To cultivate a highly skilled workforce, **India should establish training centres and educational institutions specializing in defence technology.** These programs should cover a wide range of skills, from research and design to manufacturing and maintenance.

#### International Collaboration

- Collaborating with foreign defence companies and institutions is vital for accessing advanced technology. India should **actively seek partnerships with foreign entities** to acquire expertise and gain access to critical technologies. Such collaborations can expedite the development of indigenous defence capabilities.

#### Export Opportunities

- Promoting the export of domestically developed defence equipment should be a strategic priority. This can be achieved through marketing and outreach efforts to foreign markets. Exporting defence products not only generates revenue but also enhances the reputation and capabilities of India's defence industry on a global scale.



#### **Conclusion**

- In India, defence sector indigenization is of paramount importance for self-reliance and national security. It reduces vulnerability to

supply disruptions and fosters economic growth through domestic production. Collaboration between the government and

private sector, as well as leveraging the expertise of research and development institutions, is crucial for success.

### 4.3 ARMED FORCES (SPECIAL POWERS) ACT 1958

#### Context

- The Union Home Ministry has extended the disturbed area status in parts of Arunachal Pradesh and Nagaland under the Armed Forces (Special Powers) Act, 1958, for another six months.

#### Supreme Court on AFSPA

- In 1997, the Supreme Court upheld the constitutionality of the AFSPA in the case of Naga People's Movement of Human Rights v/s Union of India. However, the court also laid down certain guidelines for the use of AFSPA, including the following:
  - AFSPA should be used sparingly and **only as a last resort**.
  - Armed forces should **use minimal force** necessary to achieve their objective.
  - Armed forces should not engage in extrajudicial killings or torture.
  - Government should review the declaration of "disturbed areas" on a regular basis.
- In 2016, the Supreme Court in the case of Extra Judicial Execution Victim Families Association v/s Union of India. In this case, the court held that **the AFSPA does not confer immunity on security forces from prosecution for serious human rights abuses**. The court also held that the government is liable for any human rights abuses committed by security forces under the AFSPA.
- Overall, the Supreme Court of India has played a positive role in shaping the interpretation and application of the AFSPA. The court's rulings have upheld the constitutionality of the AFSPA, while also imposing important safeguards to protect human rights. However, it is important to ensure that the Supreme Court's rulings are implemented effectively and that the AFSPA is used sparingly and only as a last resort.

#### Armed Forces (Special Powers) Act 1958

- The Act was enacted to grant special powers and immunity to the armed forces deployed in "disturbed areas" to maintain public order. The initial purpose was to suppress insurgent movements in the Northeastern states of India, but it has been extended to other regions, such as Jammu and Kashmir.

#### Key Provisions of AFSPA

- AFSPA is **applicable in areas that are declared "disturbed" either by the state government or the central government**. Once an area is designated as disturbed, the provisions of AFSPA can be invoked. The **government's decision to declare an area as "disturbed" is not subject to judicial review**.
- Under AFSPA, the armed forces are granted special powers, including the authority to:
  - Use force, even causing death, against individuals acting against law or order for the maintenance of public order after giving due warning.
  - Destroy any arms dump, hide-outs, prepared positions, or training camps used by armed groups.
  - **Arrest without a warrant anyone** who has committed cognizable offences or is reasonably suspected of doing so, and use necessary force for the arrest. Any person arrested must be handed over to the nearest police station with the least possible delay.
  - **Enter and search any premises** to make arrests or recover any person wrongfully restrained, arms, ammunition, or explosive substances.
  - Stop and search any vehicle or vessel suspected to be carrying individuals or weapons.

- The Act provides **legal protection to armed forces personnel**, ensuring that they cannot be prosecuted or sued for actions taken in the line of duty unless the central government permits legal proceedings.

### Significance

- Supporters of the Armed Forces (Special Powers) Act (AFSPA) present several arguments in favour of the legislation. While these arguments are not universally agreed upon, they reflect the perspectives of those who advocate for the Act's continuation:

#### National Security and Counterterrorism

- It is **crucial for maintaining national security and countering terrorism and insurgency**. Supporters argue that the special powers granted under AFSPA allow the armed forces to effectively combat armed groups and maintain public order in regions afflicted by militancy.

#### Deterrent Effect

- AFSPA is believed to **act as a deterrent against potential insurgents and terrorists**. The fear of encountering armed forces with significant powers is thought to discourage individuals and groups from engaging in violent activities, thereby reducing the overall level of conflict.

#### Quick Decision-Making

- The Act provides legal protection to soldiers, **enabling them to make quick decisions in high-pressure situations** without the fear of immediate legal consequences. Supporters contend that in conflict zones, rapid decision-making abilities are essential for the security forces to respond effectively to threats.

#### Prevention of Insurgent Activities

- Advocates argue that AFSPA **empowers the armed forces to take preventive measures**, thereby stopping insurgents from carrying out planned attacks. The ability to arrest without a warrant, for instance, is seen as a tool to preemptively disrupt potential threats.

#### Political Will

- Some proponents argue that the existence of AFSPA **demonstrates the political will of the government to tackle insurgency and maintain law and order in troubled regions**. They view the Act as a symbol of the state's commitment to dealing firmly with threats to national security.

### Controversies and Criticisms

- Opponents of the Armed Forces (Special Powers) Act (AFSPA) raise several compelling arguments against the legislation, expressing concerns about human rights violations, lack of accountability, and its impact on civil liberties.

#### Human Rights Violations

- AFSPA has been widely criticized for enabling **human rights violations, including extrajudicial killings, torture, disappearances, and sexual violence**. Critics argue that the Act's provisions have been used to shield security personnel from accountability for these violations, leading to a culture of impunity.



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### Impunity and Lack of Accountability

- The requirement for prior government sanction to prosecute armed forces personnel under AFSPA creates a **lack of accountability**. Critics contend that this provision often results in impunity, making it difficult to hold security forces accountable for their actions, even in cases of alleged gross human rights abuses.

### Civil Liberties and Freedom

- AFSPA grants **broad powers to the armed forces, infringing upon the civil liberties and freedoms of the residents** in the affected areas. Arbitrary arrests, searches, and restrictions on movement are seen as violations of individual rights, leading to a sense of insecurity and fear among the civilian population.

### Undermining Justice

- The Act, by **limiting legal recourse and hindering investigations**, is argued to undermine the principles of justice and fairness. Victims and their families often face significant hurdles in seeking justice for alleged abuses, leading to a loss of faith in the legal system.

## **Way forward to balance security concerns with human rights protection**

### Review and Reform

- **Conduct a comprehensive review of the AFSPA in consultation with legal experts, human rights organizations, and civil society representatives.** Identify specific provisions that are problematic and amend the law to align it with international human rights standards. Ensure that any exceptional powers granted are clearly defined and subject to strict oversight.

### Training and Accountability

- **Provide specialized training to armed forces personnel on human rights**, the use of force, and the importance of respecting civilian populations. Establish robust mechanisms for accountability, including independent investigations of alleged violations. Perpetrators of human rights abuses must be

held accountable through fair and transparent legal processes.

### Limited Application

- Limit the geographical scope and duration of AFSPA. **Implement the act only in areas where there is a genuine threat** to national security, and regularly reassess the need for its continuation. Clearly define the circumstances under which it can be invoked and ensure that it is not used arbitrarily or indefinitely.

### Transparency and Reporting

- **Increase transparency by regularly reporting to the public and the parliament** about the deployment of armed forces under AFSPA. Publish periodic reports detailing the incidents involving the use of special powers, ensuring that the information is accessible to the public while respecting national security concerns.

### Civil-Military Cooperation

- **Foster better cooperation and communication** between the armed forces, local law enforcement agencies, and civil administration. Collaboration between these entities can lead to more effective operations while minimizing the risk of human rights violations.

### Community Engagement

- **Engage with local communities to build trust and address their concerns.** Involve community leaders, civil society organizations, and local representatives in decision-making processes related to security operations. Their insights can help in ensuring that military actions are targeted and proportional.

### Use of Technology

- Utilize modern technology, such as body cameras and other forms of surveillance, to monitor the activities of armed forces personnel. This can serve as a deterrent against misconduct and provide valuable evidence in case of allegations of human rights violations.

### Independent Oversight

- Establish an independent oversight body, comprising respected individuals from diverse backgrounds, to monitor the implementation



of AFSPA. This body could review complaints, conduct investigations, and ensure that the rule of law is upheld.

#### Public Awareness

- Increase public awareness about AFSPA, its provisions, and the rights of citizens in areas where it is enforced. Empowering people with knowledge about their rights can serve as a check on potential abuses.

#### International Collaboration

- Seek collaboration with international human rights organizations and experts to ensure that the enforcement of AFSPA aligns with global human rights standards. International

scrutiny can provide valuable perspectives and help maintain accountability.

#### Conclusion

- A thoughtful reform of the Arr (Special Powers) Act, guided by international human rights standards, transparency, community engagement, is important. Striking a careful balance between security imperatives and the protection of civil liberties, it is possible to ensure both national safety and the fundamental rights of citizens in conflict-affected regions.



## 4.4 SHORT ARTICLES

### Armoured Recovery Vehicles

#### Context

- The Army plans to acquire 170 Armoured Recovery Vehicles (ARVs) that can run on tracks. These ARVs will be deployed in both desert and plain areas along the western borders.

#### Key Highlights

- The Defence Research and Development Organisation (DRDO) has collaborated with state-owned Bharat Earth Movers Limited (BEML) to manufacture Armoured Recovery Vehicles (ARVs) for the Indian Army.
- An armoured recovery vehicle (ARV) is typically a **powerful tank or armoured personnel carrier (APC) chassis** modified for use during combat for military vehicle recovery (towing) or repair of battle-damaged, stuck, and/or inoperable armoured fighting vehicles, such as tanks and armoured personnel carriers.
- The primary function of these ARVs is to **provide repair and recovery cover to disabled Armoured Fighting Vehicles (AFVs) during hostile operations**. They will be configured on a tracked chassis, ensuring mobility across different terrains.
- These ARVs are **capable of operating in various terrains, including plain, semi-desert,**

**desert, high altitude, and mountainous areas.**

They are capable of operating under different



weather conditions, both during the day and night and in snowy, rainy, dusty, and sandy environments.

- In high altitude and mountainous regions, the ARVs must be able to endure harsh cold temperatures of -20° to -10° Celsius and maximum temperatures of 40° Celsius.
  - They can **carry utility equipment** such as a crane, dozer, winches, general tools, special maintenance tools, and ancillary equipment required for repair and recovery operations.
- For self-defence, the **vehicle will be equipped with a Remote-Controlled Weapon Station (RCWS)** featuring a 12.7 mm anti-aircraft machine gun and smoke grenade launcher.
- The service life of these ARVs is expected to be a minimum of 32 years, with the possibility of one major overhaul or repair intervention.

### Summary

- The procurement of Armoured Recovery Vehicles marks a pivotal step in enhancing India's defence capabilities. These vehicles will provide invaluable support to the Indian Army, ensuring the swift recovery and repair

of combat assets under challenging conditions. The 'Make in India' and 'Atmanirbhar Bharat' initiatives continue to drive self-sufficiency and innovation in India.



## Kinzhal Missile

### Context

- Russia has used the Kinzhal hypersonic air-launched missiles during its military operation in Ukraine.

### Key Highlights

- The Kinzhal is a **hypersonic air-launched ballistic missile (HGV) developed by Russia**. It was introduced as one of the six new strategic weapons by the Russian President.
- The missile is reported to have a **range of 1,500 to 2,000 kilometres**, allowing it to strike targets at considerable distances.
- It is versatile and **can be armed with either conventional or nuclear warheads**. This flexibility makes it adaptable to various mission profiles.
- It is capable of achieving **speeds of up to Mach 10**, which is approximately 12,350 kilometres per hour. This exceptional speed makes it extremely challenging to intercept using conventional air defence systems.
- It is designed to be highly manoeuvrable during its flight. This capability enables it to evade enemy defences and enhances its chances of reaching its intended target.
- It is specifically designed to be launched from the Russian MiG-31 fighter jets. This air-launched capability provides flexibility in deployment and targeting.

**Russia reports use of hypersonic missile**

**Kinzhal missile (Kh-47M2)**  
Highly manoeuvrable, air-launched ballistic missile fired from MiG-31 - hypersonic means can fly 5x speed of sound (Mach 5)



<b>Type:</b> Conventional or nuclear-capable
<b>Range:</b> 2000km approx
<b>Missile length:</b> 8m
<b>Speed:</b> Possibly to Mach 10 (12,350 kmh or 7,674 mph)

Source: CSIS, BBC research Image: Planetpix/Alamy Live News BBC



## Heads of Asian Coast Guard Agencies Meeting

### Context

- The 19th Heads of Asian Coast Guard Agencies Meeting (HACGAM) took place in Istanbul, Turkey.

### Key Highlights

- The heads of Coast Guards from member nations engaged in discussions covering critical topics such as maritime law enforcement, safety and security of life at sea, marine environment protection, and combating illicit trafficking of drugs, weapons, and humans at sea.
- The Heads of Asian Coast Guard Agencies Meeting (HACGAM) is an **annual event aimed at promoting cooperation among the Coast Guard agencies of Asian nations**.
- HACGAM has **23 member Coast Guard agencies from various Asian nations**. In addition to the member agencies, there are two associate members: the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) and the United Nations Office on Drugs and Crime (UNODC).
- The idea for HACGAM was born after the successful capture of the pirated vessel MV Alondra Rainbow by the Indian Coast Guard

in 1999. This event highlighted the need for enhanced cooperation among Asian coastguards to address maritime security challenges.

- The primary focus of HACGAM is **to ensure and promote safe, secure, and clean seas in the Asian region.** To achieve these objectives, **HACGAM consists of four working groups** that address various maritime issues. These working groups are; Search and Rescue (SAR), Environmental protection, Controlling unlawful acts at sea, and Information sharing.
- The **Indian Coast Guard chairs the Search and Rescue (SAR) working group** within HACGAM. Additionally, the Indian Coast Guard actively participates in the other working groups and plays a proactive role in addressing common maritime issues.
- The HACGAM meeting is hosted annually by one of its member nations on a rotational basis. In 2022, the 18th edition of the meeting was hosted by the Indian Coast Guard in New Delhi, India.

#### **Conclusion**

- The Heads of Asian Coast Guard Agencies Meeting (HACGAM) is a regional forum that brings together Asian coastguard agencies to promote cooperation, address maritime security challenges, and work towards safe, secure, and clean seas in the Asian region. It was initiated by Japan and has evolved into a significant platform for collaboration among its member agencies.

## **Indo-Tibetan Border Police**

#### **Context**

- The Indo-Tibetan Border Police (ITBP) plans to establish more border outposts and deploy newly recruited troops in Arunachal Pradesh.

#### **Key Highlights**

- ITBP to establish more border outposts and deploy newly recruited troops in Arunachal Pradesh, a sensitive area along the Chinese frontier, due to recent Chinese territorial claims and increased transgressions by Chinese patrols along the Line of Actual Control (LAC).

- The ITBP is **India's primary defence force on the Chinese border**, with the Indian army positioned behind it. This decision is intended to monitor Chinese troop movements in vulnerable areas prone to incursions.
- The primary mission of the ITBP is to **safeguard the security of India's borders, particularly along the India-China border**, which stretches for 3,488 kilometres. This involves monitoring and patrolling the border to prevent any unauthorized or illegal activities, ensuring the territorial integrity of the country.
- In addition to physical security, the **ITBP aims to promote a sense of security among the people living in border areas.** Their presence and vigilance help reassure the local population, allowing them to go about their daily lives without fear.
- The ITBP is responsible for preventing trans-border crimes such as smuggling and unauthorized entry or exit from Indian Territory. They work to **curb illegal activities that can threaten national security and economic interests.**
- The force is tasked with providing security to sensitive installations, including government facilities, banks, and individuals at risk of security threats. This ensures the safety of critical infrastructure and key personnel.
- The **ITBP serves as "First Responders" for natural calamities in the Himalayan region.** They conduct relief and rescue operations during disasters such as earthquakes, avalanches, and floods, assisting citizens in distress.

#### **Conclusion**

- The Indo-Tibetan Border Police Force is a specialized armed police force dedicated to maintaining the security of India's borders, preventing illegal activities, providing security to sensitive areas, and responding to various emergencies and calamities. Their dedication and service are essential in safeguarding the nation's interests and promoting the well-being of its people,



especially in the challenging and high-altitude

Himalayan region.

## Vibhav Anti-Tank Munition

### Context

- The introduction of the "Vibhav" anti-tank mines into the Indian Army is a significant development in enhancing defence capabilities.

### Key Highlights

- The primary purpose of these mines is **to immobilize or render enemy armoured vehicles inoperable**, thus reducing their combat effectiveness. This is achieved through their explosive and mechanical components.
- The mines are **constructed using advanced plastic materials**. This choice of materials ensures durability and enables them to withstand the challenges of storage, handling, and various field conditions.



- The mines are developed entirely within India in collaboration with the Defense Research and Development Organisation (DRDO). This reflects India's commitment to self-reliance in defence technology.
- These anti-tank mines **can be deployed both mechanically (using machinery or equipment) and manually**, providing flexibility in their use on the battlefield.
- They are designed to be highly lethal against all types of current and future armoured vehicles, making them a formidable asset in anti-armour operations.
- The mines **incorporate a range of safety and actuation mechanisms to ensure safe handling, effectiveness against targets, and overall reliability**. The integration of explosive, mechanical, and electronic safety features prioritizes operator safety.
- "Vibhav" is **equipped with an Electronic Anti-Handling and Anti-Lift Device (EAHALD) that remains active for 120 days once armed**. This feature adds a layer of protection against tampering or removal by enemy forces. After 120 days, mechanical timers cause the mines to self-neutralize.
- These mines have a **storage life of 10 years with no special storage requirements**. This makes them easier to maintain and ensures their readiness for extended periods, contributing to their cost-effectiveness.

### Conclusion

- The "Vibhav" anti-tank mines represent a technologically advanced and versatile addition to the Indian Army's arsenal, enhancing their ability to address armoured threats effectively while prioritizing safety and reliability.





## Pralay Ballistic Missiles

### Context

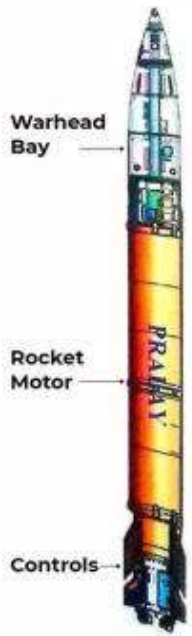
- The clearance of the proposal to acquire a regiment of Pralay tactical ballistic missiles by the Indian Army represents a significant development in India's defence capabilities.

### Key Highlights

- Pralay is a **canisterized Tactical Surface-to-Surface Short-Range Ballistic Missile (SRBM)** designed for battlefield use. It is a part of India's efforts to bolster its missile capabilities and enhance its deterrence posture.
- The missile has been **developed by the Defence Research Development Organisation (DRDO)**. It draws on elements from various missile programs, including the Prahaar missile program, as well as aspects from the K-series of submarine-launched ballistic missiles and the ballistic defence shield program.
- It is **capable of striking targets at distances ranging from 150 to 500 kilometres**. It follows a "quasi-ballistic trajectory," which combines elements of a ballistic missile's trajectory with the ability to manoeuvre during flight. This makes it challenging to intercept, enhancing its effectiveness.
- The missile is **equipped with state-of-the-art navigation systems and integrated avionics**. It carries a high explosive preformed fragmentation warhead, with **payload options ranging from 350 kg to 700 kg**.
- It is designed to target a variety of strategic assets, including radar and communication installations, command and control centres, and advanced airfields. Its deployment enhances India's strategic flexibility and deterrence posture along its borders.
- The missiles are intended for deployment along the Line of Actual Control (LAC) with China and the Line of Control (LoC) with Pakistan. Both China and Pakistan have already deployed ballistic missiles in these regions, and Pralay enhances India's capabilities for credible deterrence.
- Pralay, along with the BrahMos supersonic cruise missile, is expected to play a central role in India's Rocket Force. This integration of advanced missile systems enhances India's capabilities for both offensive and defensive purposes.

### PRALAY: Surface-to-Surface Missile

Pralay is a canisterised tactical, surface-to-surface, and short-range ballistic missile for battlefield use developed by the Defence Research and Development Organisation of India



<b>ENGINE:</b> Two stage rocket motor with third stage MaRV	
<b>SPEED:</b> Mach 1 to 1.6	
<b>RANGE:</b> 150-500 km	
<b>TRAJECTORY:</b> low	
<b>GUIDANCE SYSTEM:</b> Inertial navigation system	
<b>LAUNCH PLATFORM:</b> 8x8 BEML-Tatra transporter erector launcher	
<b>MASS:</b> 5 tonnes (4.9 long tons; 5.5 short tons)	
<b>OPERATIONAL RANGE:</b> 150-500 km (93-311 mi)	

Can change its path after covering certain range mid-air and is difficult to be tracked

It is capable of being launched from a mobile launcher and has latest navigation system and integrated avionics

It has the **capability to defeat interceptor missiles**

### Conclusion

- The acquisition of the Pralay tactical ballistic missile regiment represents a significant advancement in India's defence capabilities. It provides the Indian Army with a potent tool for deterring potential adversaries and responding effectively to threats along its borders. Moreover, the incorporation of cutting-edge technologies into the Pralay missile promises to enhance India's offensive capabilities and its overall strategic posture in the region.





## 4.5 SNIPPETS

### MQ-9B Predator Drone

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- India is in the final stages of finalizing a Letter of Request (LoR) to the United States government for the acquisition of 31 MQ-9B drones from General Atomics.
- The MQ-9B drones are high-altitude, long-endurance (HALE) unmanned aerial vehicles (UAVs) that can carry out a variety of missions, including intelligence, surveillance, and reconnaissance (ISR), precision strikes, and maritime patrol.
- The drones will be able to provide real-time intelligence on a variety of targets, including terrorist camps, militant hideouts, and ships at sea. They will also be able to carry out precision strikes against these targets, without putting pilots at risk.
- The key benefits of the MQ-9B drones for India include enhanced ISR capabilities, increased strike capabilities, improved interoperability, and increased strategic autonomy.



### DSC A 20 (YARD 325)

APTI PLUS

- DSC A 20', the first of five Diving Support Crafts (DSC) in the project, was launched in Kolkata on Sept. 2, 2023.
- These 30m catamaran hull ships, built by Titagarh Rail Systems Ltd (TRSL), weigh approximately 300 tons.
- Designed for diving operations in harbours and coastal waters, they adhere to Indian Naval Rules and Regulations.
- Diving support vessels play a crucial role in both commercial and military diving, providing essential assistance for divers working in the oceans.
- All five DSCs are scheduled for delivery to the Indian Navy in FY 2024-25, equipped with advanced diving equipment.



### Bharat Drone Shakti 2023

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- The Indian Air Force (IAF) partnered with the Drone Federation of India to host 'Bharat Drone Shakti 2023', at Hindan airbase in Ghaziabad, Uttar Pradesh.
- The event showcases India's expertise in drones and features live aerial demonstrations, highlighting the transformative impact of drone technology in both civil and defence sectors.
- 'Bharat Drone Shakti 2023' displayed the full potential of the Indian drone industry through over 50 live aerial demonstrations, covering a wide spectrum of applications, including surveying, agriculture, fire-fighting, surveillance, logistics, loitering munition systems, drone swarms, and anti-drone solutions.



## Naval Exercise VARUNA

APTI PLUS

- Phase II of the 21st edition of Varuna, a bilateral naval exercise between the Indian and French Navies, took place in the Arabian Sea, phase 1 was held in January 2023.
- This exercise witnessed the participation of various naval assets, including the indigenous guided missile stealth destroyer INS Chennai, guided missile frigate INS Teg, maritime patrol aircraft P-8I, Dornier aircraft, integral helicopters, and MiG29K fighter aircraft.
- Varuna, which was initiated in 1993 and named in 2001, has grown in scope and complexity over the years, reflecting the strong strategic bilateral relationship between India and France.
- The exercise serves as a platform for both navies to learn from each other's best practices, enhance interoperability, and showcase their ability to work as an integrated force, promoting peace, security, and stability in the region's maritime domain.



## A400M ATLAS

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- Airbus has responded to the Indian Air Force's Request for Information (RFI) for a Medium Transport Aircraft (MTA) with the A400M Atlas
- It is a European four-engine turboprop military transport plane, weighing 76,500kg with a 141,000 kg max take-off weight.
- Originally named "Future Large Aircraft," it serves multiple European air forces. Designed for tactical and strategic purposes, it operates at 555km/h but can reach 780km/h.
- It carries heavier loads than the C-130, handles rough landing strips, and performs aerial refuelling and medical evacuations.
- Short, soft field landings are within its capabilities due to six-wheel high-flotation landing gear.



## Dhruvastra Missile

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- The Dhruvastra, formerly known as Helina, is a versatile helicopter-launched anti-tank guided missile (ATGM) developed under India's Integrated Guided Missile Development Program (IGMDP) by the Defence Research and Development Organisation (DRDO).
- It's a third-generation fire-and-forget system with a range from 500 meters to 7 kilometres, capable of engaging targets moving at speeds up to 70 km/h.
- Key features include its imaging infrared-seeker (IIS) for precision targeting in various conditions and a special warhead designed to penetrate different armour types, including reactive armour.
- Dhruvastra, deployed on DHRUV MK-IV helicopters, significantly enhances India's military capabilities against enemy tanks and armoured vehicles.



## Operation SAJAG

APTI PLUS

- Operation Sajag is a coastal security drill conducted by the Indian Coast Guard along the west coast of India.
- The Indian Coast Guard is responsible for protecting India's maritime interests and enforcing maritime law. It operates under the Ministry of Defence and is headed by the Director General Indian Coast Guard (DGICG).
- The drill involves all stakeholders of the Indian coastal security construct, including Customs, Marine Police, Ports, and the Indian Navy.
- The primary objective of the drill is to revalidate and strengthen the coastal security mechanism. It also aims to raise awareness among fishermen at sea about the importance of coastal security.
- During the drill, extensive checking and verification of documents and crew passes of fishing boats, barges, and craft at sea are carried out.





## Exercise Yudh Abhyas

APTI PLUS

- The Indian Army and the United States Army conducted the 19th edition of "EXERCISE YUDH ABHYAS" from 25th September to 8th October 2023 at Fort Wainwright, Alaska, USA.
- This is an annual bilateral exercise that aims to enhance the interoperability and cooperation between the two armies. The last edition of the Exercise was held in Auli, Uttarakhand, India in November 2022.
- The theme of the Exercise is 'Employment of an Integrated Battle Group in Mountain/ Extreme Climatic Conditions' under Chapter VII of the United Nations mandate.
- The Field Training Exercise covered the validation of Integrated Battle Groups against hostile forces at the Brigade level, validation of logistics and casualty management during operations, evacuation and combat medical aid and other aspects as applicable to High Altitude Areas and Extreme Climatic Conditions.



## SIMBEX 23

APTI PLUS

- The bilateral maritime exercise SIMBEX (Singapore-India Maritime Bilateral Exercise) involves naval assets from both the Indian Navy and the Republic of Singapore Navy (RSN).
- SIMBEX is taking place in the southern parts of the South China Sea, which is a strategically important region for maritime security.
- The primary objective of SIMBEX is to enhance the professionalism and operational capabilities of both navies. It provides an opportunity for joint training, exercises, and exchanges between naval personnel.
- During the exercise, both navies signed a submarine rescue joint standard operating procedures (JSOP) document, emphasizing cooperation in submarine rescue operations.



## National Investigation Agency (NIA)

APTI PLUS

- The NIA has issued a list of 43 individuals associated with a terror gangster network.
- It was established in response to the 26/11 terror attack in Mumbai in 2008.
- Its primary mandate is to investigate and prosecute offences related to terrorism, insurgency, and other matters with national and cross-border implications.
- It has the authority to investigate cases involving threats to India's sovereignty, security, and integrity. It can conduct searches, seizures, arrests, and collect evidence. It maintains a database of terrorist organizations and their members.
- It can operate and investigate cases across states without requiring special permission from individual states. This allows for a more centralized and efficient response to terrorist activities that may span multiple regions.



### 4.6 1 MAINS & 5 MCQs

**Q1. What are the key arguments both in support of and against the continued existence and enforcement of the Armed Forces (Special Powers) Act 1958 in India and what measures have been suggested to strike a balance between security concerns and human rights protection in the context of this law?**

#### Answer

- The Armed Forces (Special Powers) Act 1958 (AFSPA) in India has been a topic of extensive debate, with diverse opinions on its continuation and enforcement.

#### Arguments in support of AFSPA

- It is considered vital for national security, granting the armed forces essential powers to effectively counter terrorism, maintain public order, and combat armed groups.
- It acts as a deterrent, dissuading potential insurgents and terrorists from engaging in violence due to the fear of encountering armed forces with significant powers, potentially reducing conflicts.
- The legal immunity granted by AFSPA enables soldiers to make rapid decisions in high-pressure situations, crucial in conflict zones

for effective responses to threats without immediate legal concerns.

- It empowers armed forces to take preventive measures, stopping insurgents from carrying out planned attacks. Powers such as arrest without a warrant are seen as tools to disrupt potential threats proactively.

### Arguments against AFSPA

- AFSPA has faced criticism for enabling human rights abuses, such as extrajudicial killings and torture, as its provisions have shielded security personnel from accountability, fostering a culture of impunity.
- The need for government sanction under AFSPA hampers accountability, fostering impunity, and making it challenging to hold security forces responsible for alleged human rights abuses, even in cases of severe violations.
- It grants extensive powers to armed forces, infringing on civil liberties in affected areas, with arbitrary arrests and searches seen as violations, fostering insecurity and fear among residents.
- It can damage the social fabric by fostering resentment and anger due to human rights abuses and fear, potentially fueling further violence and unrest in affected regions.
- AFSPA's presence in certain regions can hinder development and economic progress, as investor reluctance in perceived conflict zones may lead to economic stagnation and poverty.

### Measures to strike a balance

- Conduct a comprehensive review of AFSPA with input from legal experts, human rights organizations, and civil society to align the law with international human rights standards, clearly define exceptional powers, and establish strict oversight.
- Provide specialized training to armed forces on human rights and the use of force,

emphasizing civilian respect, and establish robust accountability mechanisms, including independent investigations of alleged violations.

- Limit AFSPA's scope and duration to genuine security threats, reassess regularly, define specific invocation circumstances, and prevent arbitrary or indefinite use in designated areas.
- Enhance transparency by regular public and parliamentary reporting on armed forces' deployment under AFSPA, publishing periodic reports detailing special powers use incidents, and balancing accessibility with national security considerations.
- Promote collaboration among armed forces, local law enforcement, and civil administration to enhance communication, ensuring effective operations while minimizing the risk of human rights violations through better coordination.
- Engage local communities, involve leaders, civil society, and local representatives in decision-making, fostering trust, and ensuring targeted and proportional military actions through their valuable insights.
- Establish an independent oversight body to review complaints and uphold the rule of law under AFSPA, while increasing public awareness to empower citizens and serve as a check against potential abuses in enforced areas.

### Conclusion

- A careful reform of AFSPA, guided by international human rights standards, transparency, and community engagement, is essential. Balancing security concerns with the protection of civil liberties requires a multifaceted approach involving legal reforms, accountability mechanisms, community involvement, and international cooperation.

**Q2. Consider the following statements with reference to Vibhav.**

1. It is a point-attack anti-tank munition.
2. The anti-tank mine is made of new-age plastic.
3. After 120 days, it is self-neutralised.

**How many of the above are incorrect?**

- A) Only one
- B) Only two
- C) All three
- D) None

**Q3. What is Operation Sajag?**

- A) An Indian Navy exercise in the Arabian Sea.
- B) A coastal security drill conducted by the Indian Coast Guard.
- C) An annual cricket tournament in India.
- D) A civilian disaster preparedness program.

**Q4. Consider the following statements in the context of the Dhruvastra:**

1. It was formerly known as Helina.
2. It is a versatile helicopter-launched anti-tank guided missile (ATGM)
3. It is developed under India's Integrated Guided Missile Development Program (IGMDP).

4. It has a fire-and-forget system with a range from 5 Km to 70 Km.

**How many of the above statement is/are correct?**

- A) Only one
- B) Only two
- C) Only three
- D) All four

**Q5. Which country manufactures the MQ-9B drones that India is seeking to acquire?**

- A) India
- B) Russia
- C) United States
- D) China

**Q6. Match the following:**

- |                          |                        |
|--------------------------|------------------------|
| 1. Exercise Yudh Abhyas  | a. Indian and US Army  |
| 2. Desert Eagle          | b. India and China     |
| 3. Nomadic Elephant      | c. Indian and Mongolia |
| 4. Exercise Hand in Hand | d. India and UAE       |

**Choose the correct code:**

- A) 1-a, 2-d, 3-c, 4-b
- B) 1-c, 2-a, 3-d, 4-b
- C) 1-c, 2-d, 3-a, 4-b
- D) 1-c, 2-a, 3-b, 4-d

ANSWERS: 2) d, 3) b, 4) c, 5) c, 6) a



## 5. ENVIRONMENT & ECOLOGY

### 5.1 NATIONAL MISSION FOR CLEAN GANGA

#### Context

- Indian scientists have developed the first ever low-pungent mustard that is pest and disease-resistant. It is based on CRISPR/Cas9 gene editing, while being non-GM and transgene-free.



#### Key details:

- In the seven years since the government unveiled its ambitious ₹20,000 crore **National Mission for Clean Ganga (NMCG)**, it has installed treatment plants capable of treating just 20% of the sewage estimated to be generated in the five major States that lie along the river.
- This is expected to increase to about 33% by 2024**; and according to the latest projections by senior officials in the NMCG, treatment plants will be capable of treating 60% of sewage by December 2026.

- These calculations are premised on sewage to the tune of **11,765 million litres per day (MLD)** being generated in the five States – Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal – through which the river courses.
- This figure derives from a report submitted to the **National Green Tribunal** earlier this year. However, the NMCG plans on setting up sewage treatment plants (STPs) capable of treating about 7,000 MLD of sewage by 2026; States are expected to set up the remaining capacity, both on their own, and drawing on separate initiatives by other arms of the Union government.

*The main objective of the Namami Ganga mission is to ensure that no untreated sewage flows into the river. The estimate of 11,765 MLD is dynamic and also includes sewage that is generated within the State, but which doesn't necessarily flow into the river.*

#### About National Mission to Clean Ganga

<b>About</b>	<ul style="list-style-type: none"> <li>The NMCG is a registered society under the Ministry of Jal Shakti, with a mandate to plan, execute, monitor and coordinate various activities under the Namami Gange programme, which is an integrated approach to clean and rejuvenate the Ganga River and its tributaries.</li> </ul>
<b>Background</b>	<ul style="list-style-type: none"> <li>Recognizing the need to restore the health and glory of the Ganga River, the Government of India launched the National Mission for Clean Ganga (NMCG) in 2011 as the implementation wing of the National Ganga River Basin Authority (NGRBA).</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li><b>The Namami Gange programme has four main components:</b> <ul style="list-style-type: none"> <li>Sewage treatment</li> <li>Riverfront development</li> <li>Biodiversity conservation</li> <li>Public awareness</li> </ul> </li> <li>To create sewage treatment capacity for <b>2.5 billion litres per day</b>, rehabilitate <b>4465 km of sewer lines</b>, develop <b>197 ghats</b> and <b>66 crematoria</b>, and conserve 83 wetlands and five dolphin habitats.</li> </ul>
<b>Collaborations</b>	<ul style="list-style-type: none"> <li>Engage with various stakeholders such as <b>state governments, local bodies, civil society groups, academic institutions and religious leaders.</b></li> </ul>

### Approaches

- The NMCG has adopted a **project-based approach** to implementing the Namami Gange programme, with a focus on outcomes, timelines and accountability.
- The NMCG has also leveraged **innovative technologies, financing models and partnerships** to enhance the efficiency and effectiveness of its interventions.

### Key Highlights of the Status Report of NMCG

- **Treatment of Sewage:** Since the launch of NMCG, the government has installed sewage treatment plants (STPs) capable of treating only 20% of the sewage generated in the five major states along the Ganga River (Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal). The plan is to increase this capacity to 33% by 2024 and 60% by December 2026.
- **Sewage Generation:** The estimate of sewage generation is around 11,765 million litres per day (MLD) in these five states, according to a report submitted to the National Green Tribunal. However, the NMCG plans to set up STPs with a capacity of about 7,000 MLD by 2026, and the states are expected to set up the remaining capacity.
- **Progress:** As of July 2023, STPs capable of treating 2,665 MLD have been commissioned and are operational. The progress had been slower in the earlier years due to issues like

land acquisition and revisions in Detailed Project Reports.

- **Funding:** The government has given in-principle approval for projects worth ₹37,396 crore, out of which ₹14,745 crore has been released to states for infrastructure work as of June 2023.
- **Water Quality:** The water quality in the Ganga River has improved to meet the prescribed limits of primary bathing water quality. This improvement is indicated by an increase in the population of dolphins and the presence of clean-water fish species.

### Closing remarks

- The National Mission for Clean Ganga is a critical initiative aimed at restoring the Ganga River to its pristine glory, and its success is essential not only for India's environment but also for its cultural and spiritual heritage. Ongoing commitment, public awareness, and sustained efforts are crucial for achieving the mission's objectives.

## 5.2 INDIAN GREEN BUILDING COUNCIL

### Context

- **Vijayawada Railway Station** was awarded the 'Green Railway Station' certification with the highest rating of Platinum by the Indian Green Building Council (IGBC) for its efforts in improving the environmental standards and providing eco-friendly services to passengers.

### Details

- Some of these measures include use of star-rated electrical appliances, LED lights, installation of a sewage treatment plant to recycle wastewater, periodic testing to check smoke emission, increasing green coverage, improvement in amenities for passengers, provision of medical facilities, proximity to

bus stops, avoidance of single-use plastic, use of comprehensive mechanised cleaning for effective waste segregation and its disposal, among others.

- The IGBC, with the support of Environment Directorate of Indian Railways, developed the Green Railway Stations rating system to facilitate adoption of green concepts and enhance the overall commuter experience.
- The rating is based on six environmental categories as defined by IGBC which include **sustainable station facility, health, hygiene and sanitation, energy efficiency, water efficiency, smart and green initiatives and innovation and development.**

## What is IGBC?

IGBC is India's Premier certification body, headquartered at Hyderabad. IGBC is the founding member of World Green Building Council discussing global issues at COP and similar global platforms.

- IGBC is a part of the **Confederation of Indian Industry(CII)**. It was formed in the year 2001.
- **The vision of IGBC** is to facilitate India emerge as a global leader in green buildings and green built environment by 2025. In a span of last 2 decades, CII-IGBC through its multi-pronged approach could facilitate in bringing about a paradigm shift in the way buildings are conceived and designed across various forms of built environment.
  - CII-IGBC has launched 31 Green Rating Systems for Buildings and Built Environment which are designed to address various building typologies
- **IGBC is representing India at global forum** – 'World Green Building Council' among 90+ country councils and is the founding member of World GBC since 2004. IGBC is leading the Asia Pacific Network in green building related discussions.



## Terms related to Green buildings

- **Green Building Congress:** This annual flagship event organized by IGBC serves as a platform for discussions and knowledge sharing on green building trends and practices. **It brings together industry leaders, experts, and stakeholders to advance sustainability.**
- **World Green Building Council:** IGBC is one of the five countries represented on the board of the **World Green Building Council**. This global organization **focuses on addressing environmental challenges** through sustainable building and construction practices.
- **Environmental Categories:** The certification rating is based on six environmental categories, which include **Sustainable Station Facility, Health, Hygiene, Energy Efficiency, Water Efficiency, and Smart and Green Initiatives**. These categories assess a railway station's commitment to eco-friendly operations and sustainability.

## Advantages

### Energy Efficiency:

- Green buildings prioritize energy conservation by incorporating certain features. These features include proper insulation, energy-efficient appliances, LED lighting, and renewable energy systems like solar panels. These measures significantly reduce energy consumption and lower utility bills.

### Water Conservation:

- Green Buildings employ innovative techniques for water conservation, including rainwater harvesting, greywater recycling, and low-flow fixtures. These practices help reduce water wastage and promote responsible water usage.

### Sustainable Materials:

- Green buildings utilize eco-friendly materials with minimal environmental impact. These materials are often sourced locally, reducing

transportation emissions, and are chosen for their durability and recyclability.

#### Indoor Air Quality:

- Green buildings prioritize occupants' health and well-being by ensuring good indoor air quality. This involves using low-VOC (volatile organic compound) paints, and proper ventilation systems. You must also avoid the use of harmful chemicals that can negatively affect air quality.

#### Waste Management:

- Green buildings implement efficient waste management systems, including waste segregation, recycling programs, and composting facilities. This helps minimize landfill waste and promotes a circular economy.

#### Green Building Certification:

- Green building certification in India, such as the certification provided by the Indian Green Building Council (IGBC), verifies that a building meets rigorous sustainability standards. IGBC-certified buildings in India, including IGBC-certified green homes, adhere to specific criteria and undergo audits to ensure compliance.

### **Government Incentives to IGBC-Certified Buildings**

#### Financial Incentives:

- The government offers financial incentives such as tax rebates, subsidies, and reduced interest rates on loans. These benefits are available for developers and individuals investing in IGBC-certified green building projects. These incentives help offset the initial costs and encourage more sustainable construction practices.

#### Faster Approvals and Clearances:

- To facilitate the development of IGBC-certified buildings, state governments often provide various services. This includes expedited approvals and clearances for projects that meet IGBC certification standards. This streamlined process accelerates the project timeline and reduces administrative burdens.

#### Grant Programs:

- Various government departments and agencies provide grants and funding opportunities to support IGBC-certified green building projects. These grants can be used for research, development, and implementation of innovative sustainability measures within the project.

#### Green Building Certifications as Eligibility Criteria:

- In some cases, the government mandates IGBC certification as a prerequisite for eligibility for certain benefits or incentives. This requirement ensures that sustainable practices are promoted and adopted across the construction industry.

#### Recognition and Awards:

- The government acknowledges and rewards outstanding IGBC-rated green building projects through recognition and awards. These accolades not only provide public recognition to the developers but also inspire others to follow suit and adopt sustainable building practices.

### **Closing remarks**

- Green building rating brings together a host of sustainable practices and solutions to reduce the environmental impacts. Green building design provides an integrated approach considering life cycle impacts of the resources used.

## **5.3 GLOBAL PUSH TO CRIMINALIZE ECOCIDE**

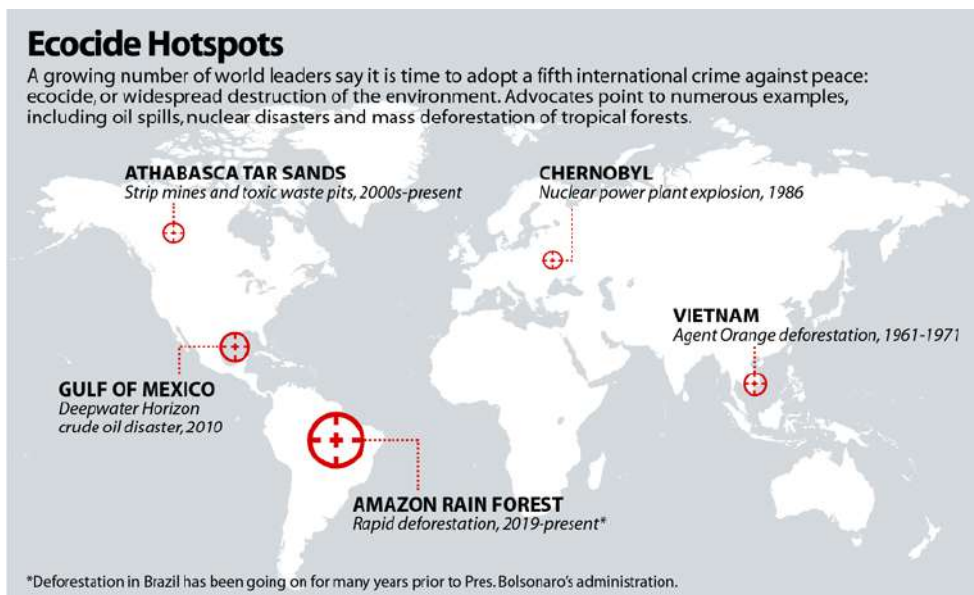
### **Context**

- Mexico is considering passing a law to make ecocide a crime.



### Key details

- Mexico's Maya train project has earned a contradictory reputation. Some describe it as a "Pharaonic project", the train route covers 1,525 km (about the distance from Florida to New York City), connects tourists in the Caribbean with historic Maya sites and costs \$20 billion (almost four times India's Great Nicobar Project).



- It has also been described as a "megaproject of death" – it imperils the Yucatán peninsula's rich wilderness, ancient cave systems and indigenous communities.
- The Tribunal for the Rights of Nature in August said the project caused "crimes of ecocide and ethnocide".

*Ecocide is derived from Greek and Latin. It translates to 'killing one's home' or 'environment'.*

*Such 'killing' could include port expansion projects that destroy fragile marine life and local livelihoods; deforestation; illegal sand mining; polluting rivers with untreated sewage.*

### About Ecocide

<b>Legal definition</b>	<ul style="list-style-type: none"> <li>There is no accepted legal definition of ecocide, but a Stop Ecocide Foundation in 2021 prepared a definition of ecocide.</li> <li>It has defined Ecocide as the unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.</li> </ul>
<b>Examples of Ecocide</b>	<ul style="list-style-type: none"> <li>Deforestation during the Vietnam War, the destruction of the environment during the Russian invasion of Ukraine, deforestation in Indonesia and the Amazon rainforest, oil pollution in the Niger Delta and the Chernobyl disaster.</li> </ul>
<b>History</b>	<ul style="list-style-type: none"> <li>The term 'ecocide' was popularized by Olof Palme when he accused the United States of ecocide at the 1972 UN Conference on the Human Environment.</li> </ul>
<b>Status (internationally)</b>	<ul style="list-style-type: none"> <li>At present, the <b>Rome Statute of the International Criminal Court (ICC)</b> deals with four atrocities: genocide, crimes against humanity, war crimes and the crime of aggression.</li> </ul>
<b>Provisions</b>	<ul style="list-style-type: none"> <li>The provision on war crimes is the only statute that can hold a perpetrator responsible for environmental damage albeit if it is intentionally caused and during wartime situations.</li> </ul>



## Possible Benefits of Criminalizing Ecocide

- **Expansion of international accountability for environmental harms:** The proposed crime extends the possibility of prosecutions for environmental damage beyond the context of war, theoretically enabling individuals to be prosecuted for harms such as ocean damage through oil spills, deforestation, land and oil contamination, and air pollution.
- **Individual criminal liability:** The International Criminal Court is a court premised on individual criminal liability, meaning that it would be **individuals at the top of industries, financial institutions, and government** who would face charges, rather than organizations or states.
- **War criminals:** Proponents of the new crime often refer to the **deterrent effect that introducing** a new crime will have for business owners and financiers reluctant to be classed in the same category as war criminals.
- **Accountability:** While the ICC will be constrained by the limits on its jurisdiction, it is also worth noting the possibility of accountability that extends beyond the ICC. **Under the norm of universal jurisdiction**, state parties to the ICC who ratify the crime of ecocide might choose to pursue prosecutions in their own legal systems.
- **Signaling a serious concern:** The criminalization of ecocide may play an important symbolic role, signaling that the **international community considers the destruction of the environment** to be one of the **“most serious crimes of concern.”** In doing so, they would be **contributing to a growing consciousness** of the need to prevent and meaningfully address the harms perpetrated against the natural world.

## Which countries have criminalized ecocide?

- Ecocide is a crime in **11 countries**, with **27 other nations** mulling laws around

criminalizing environmental damage that is wilfully caused and harms humans, animals and plant species.

- **The European Parliament voted unanimously** this year to enshrine ecocide in law.

## What has been India's stance on ecocide?

- Some Indian judgments have used the term **‘ecocide’** in passing, but the **concept hasn't fully materialized** in law.
- In **Chandra CFS and Terminal Operators Pvt. Ltd. v. The Commissioner of Customs and Ors (2015)**, the **Madras High Court** noted: The prohibitory activities of ecocide have been continuing unbridledly by certain sections of people by removing the valuable and precious timbers.
- In an ongoing case, **T.N. GodavarmanThirumulpad vs Union of India &Ors**, the **Supreme Court** called attention to an **“anthropogenic bias”** and argued that **“environmental justice could be achieved only if we drift away from the principle of anthropocentric to ecocentric”**.

## Closing remarks

- The introduction of ecocide could play an important role in increasing accountability and access to reparations for environmental destruction. **However, is important to acknowledge the limitations** of criminalization as a means of addressing environmental destruction.
- There are challenges associated with both introducing ecocide as a crime and prosecuting it once it is introduced. **Aslaw alone cannot solve the biggest problems we face.**
- **While accountability and repair may play important parts** in the pursuit of environmental and climate justice, far larger systematic changes will be needed to realize those goals.

## 5.4 E-WASTE MANAGEMENT IN INDIA

### Context

- The Indian Cellular and Electronics Association (ICEA) on August 28 released a report on 'Pathways to Circular Economy in Indian Electronics Sector,' following a government effort with NITI Aayog to explore opportunities to harness e-waste.

### Key details

- The report talks about changing the outlook on **e-waste management to build a system where discarded electronics can have a new life**, either by themselves, or by reintroducing components and precious metals into new hardware.
- There could be an **additional \$7 billion market opportunity in harnessing e-waste**.
- The informal sector is good at salvaging older devices** for parts and profiting from repairs with them. Then there are almost industrial hubs like Moradabad, where printed circuit boards (PCBs) arrive in the tonnes to have gold and silver melted out of them and sold.

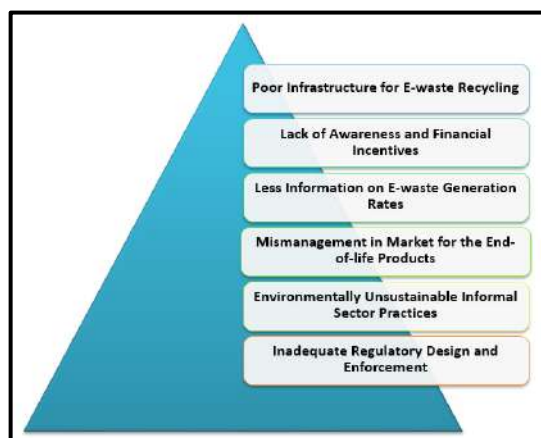
*E-waste management is largely informal in India, as in the case of recycling. "Roughly 90% of collection and 70% of the recycling are managed by a very competitive informal sector,".*

### Challenges for E-waste Management in India

- Poor Infrastructure for the Recycling of E-waste:** India has very limited infrastructure capacity for large-scale management of e-waste. There are very few governments approved e-waste recycling centers in the country, which **only constitutes about 1/5th of the total amount of e-waste generated each year**.
  - The Indian Government offers the co-funded grant scheme that covers **between 25% to 50% of the project costs** for the e-waste management facilities and building capacity for e-waste businesses.
- Lack of Awareness and Financial Incentives:** There is the lack of public awareness of e-waste hazards in India, and recycling is, therefore, very low. Most

### About National Mission to Clean Ganga:

- Electronic waste, as known as e-waste**, is generated when **any electronic or electrical equipment** becomes unfit for the intended use or if it has crossed its expiry date.
- Due to rapid **technological advancements and the production of newer electronic equipment**, the old ones get easily replaced with new models. It has **particularly led to an exponential increase in e-waste in India**.
- People tend to switch to the **newer models and trending technologies**; also, the lives of products get reduced with time. But the issue is left with e-waste management in India and its challenges.
- Consumers are the key to better e-waste management in India. **Initiatives such as Extended Producer Responsibility; Design for Environment; (3Rs) Reduce, Reuse, Recycle technology platform** for linking the market facilitating the **circular economy aim to encourage consumers** to correctly dispose of the e-waste, with an increased reuse and recycling rates, and also adopt sustainable consumer habits.



consumers **do not know or have less knowledge** about the hazardous nature of e-waste components or the penalties for improper disposal. **They do not know about e-waste management** in India is done by urban municipal or state government agencies.

- **Less Information on E-waste Generation Rates:** It is acknowledged that there is a **lack of e-waste inventories and all the responsibility placed on the state-wise e-waste inventories** on the respective State Pollution Control Boards (SPCBs). The **sales data on electronic products is an important input** in the estimation of e-waste quantities.
  - **It is often available at a national-level aggregation**, which making it challenging to produce inventories at the state levels. In addition to domestic generation, the e-waste is imported from developed countries, often illegally.
- **Mismanagement in Market for the End-of-life Products:** The **inability to reliably source e-waste quantities** create economies of scale restricts the entry of private players to set up e-waste management systems in a formal sector.
  - **For instance, employing effective recycling technologies** for e-waste management in India may require **significant upfront capital expenditures**, which cannot be justified for private entities in the absence of certainty about sourcing enough quantities of e-waste.
  - **Environmentally Unsustainable Informal Sector Practices:** Despite the formal dismantling and recycling sector's growth, the **actual waste processed in the formal sector still very low**. Most of these formal facilities are operating below the approved capacities because of inability to source enough waste.
  - **The lack of awareness regarding e-waste and the costs of returning the end-of-life equipment** to formal collection centres are reducing the willingness of household and institutional consumers to return their waste to the formal sector.

### Improvement of E-waste Management in India

#### Providing Market Information about E-waste Prices

- It is a well-established market for e-waste within and between informal and formal sector operators. However, the prices for e-waste & its components are not widely known or publicized among urban consumers.
- **A consolidated price list must be updated on a weekly basis** as it would be a powerful market signal for customers who sell the e-waste to local vendors.

#### Incentivizing Formal E-waste Recycling

- The Indian Government has introduced a point-based reward system of **E-waste Recycling Credits (ERCs)** for formal organizations to incentivize them to channel their e-waste through government-approved recycling centers.
- The **E-Waste Rules** already classify and code e-waste like laptops, computers, and mobile phones.

#### Training and Upskilling Informal Sector Players

- The majority of an informal e-waste recycling workforce needs upskilling, particularly for **handling and dismantling hazardous materials**.
- It must ensure the work's environmental and occupational health and safety and link supply to formal sector processors.



- It is pursued by the Indian government's National Skill Development Mission.

### Deploying Readily Available and Mature Recycling Technologies

- There is an **urgent need for deploying mature recycling technologies** alongside existing manual techniques to improve the recycling efficiency of the large volumes of e-waste management in India.
- India has a very large and mature plastics processing sector which can recycle **plastic material from e-waste**.

### Developing Innovative Methods & Technologies for Processing New Forms of E-waste

- The composition of e-waste is changing rapidly due to the new electronic devices to enter the market.
- It **requires significant investment in research & development** for innovative recycling methods and technologies for future-proofing India's e-waste policies and management.
- **For example, smartphones usage has expanded dramatically** in India over the past five years, but any e-waste recycling rules do not yet cover the lithium-ion batteries that power the devices..

### Closing remarks

- **Addressing the problem of informal sector e-waste practices** requires a greater understanding of the sector itself in terms of its incentives and challenges.
- **Engagement with informal sector workers and the groups**, in a manner that recognizes the right of their livelihoods, builds trust, and develops an understanding of the problems along with potential solutions, can be an initial step.
- **The government must institute a platform that facilitates consultations** among various stakeholders like informal sector workers, NGOs working with the informal sector, third parties, private entities, and registered recyclers, and manufacturers.



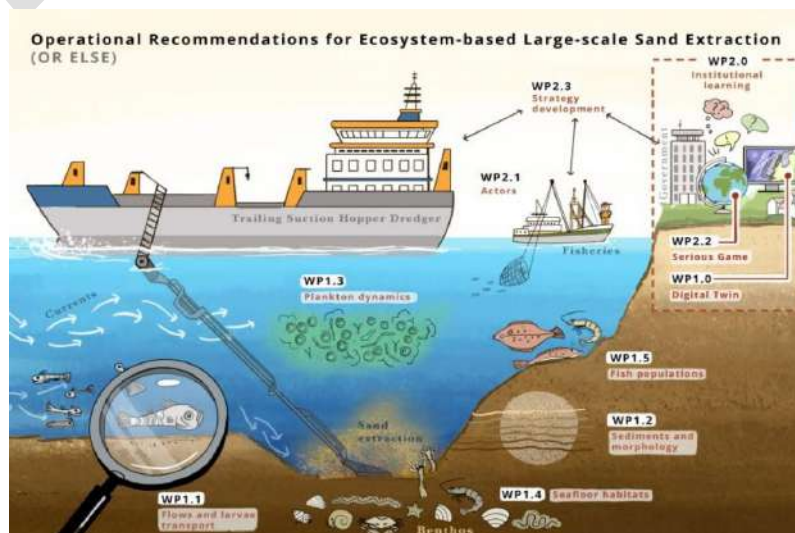
## 5.5 MARINE SAND EXTRACTION

### Context

- The marine dredging industry is digging up six billion tonnes per year, the equivalent of more than one million dump trucks per day, according to a report by the UN Environment Programme (UNEP).

### Details:

- Data analysed for the years 2012-19 shows the scale of dredging is growing. The new data platform, Marine Sand Watch, has been developed by GRID-Geneva, a **Centre for Analytics within the UN Environment Programme (UNEP)**.
- The world is approaching the natural replenishment rate of **10 to 16 billion tonnes per year** which is needed by rivers to maintain coastal and marine ecosystem structure and function.
- **This is especially concerning for regions where dredging is more intense and extraction already substantially surpasses the sediment budget from land to sea.**





The platform will track and monitor dredging activities of sand, clay, silt, gravel, and rock in the world's marine environment, including hotspots like the North Sea, Southeast Asia, and the East Coast of the United States.

### About Marine Sand Extraction

- It is the **process of removing sand from the seabed or the coastal zone for various purposes**, such as construction, land reclamation, beach nourishment, or mining.
- It is a data platform **developed by a Centre for Analytics within the United Nations Environment Programme (UNEP)**.
- The platform will **track and monitor dredging (removal) activities of sand, clay, silt, gravel, and rock** in the world's marine environment.
- It will **provide information on areas used for sand extraction**, areas of capital and maintenance dredging, sand trading ports/hubs, number of vessels and operators, and extraction of sediment and other types of activities by countries with Exclusive Economic Zones.

### How is it tracked?

- **Marine Sand Watch:** The first-ever global data platform on sand and other sediment extraction—tracks and monitors dredging activities of sand, clay, silt, gravel, and rock in the world's marine environment, including hotspots like the North Sea, South East Asia, and the East Coast of the United States.
- **Developed by GRID:** Geneva, a centre for analytics within the UN Environment Programme (UNEP), the platform uses Automatic Identification System (AIS) signals from vessels and Artificial Intelligence (AI) to identify the operations of dredging vessel.
- **The platform provides information** on areas used for sand extraction (sand concessions), areas of capital and maintenance dredging, sand trading ports/hubs, number of vessels and operators, and extraction of sediment and other types of activities by countries with Exclusive Economic Zones.
- **The Marine Sand Watch cannot yet detect** artisanal and very small-scale mining along very shallow coastlines, despite its intensity in some regions.

### Impact of Marine Sand Extraction

#### Turbidity of Water:

- Sand extraction increases water turbidity (the measure of relative clarity of a liquid), reducing water clarity and affecting aquatic ecosystems.

#### Nutrient Alteration:

- It disrupts nutrient availability, potentially harming marine flora and fauna.

#### Noise Pollution:

- The extraction process generates noise pollution, which can disturb marine organisms and their habitats.

#### Coastal Community Vulnerability:

- Coastal communities face risks as sand is needed for coastal defence structures, critical in mitigating rising sea levels and storms.

#### Infrastructure Support:

- Marine sand is crucial for building offshore infrastructure, including wind and wave turbines.

#### Salinization Risk:

- Coastal or near-shore extraction can lead to the salinization of aquifers, impacting freshwater resources.

#### Tourism Development:

- Sand extraction can hinder future tourist development in coastal areas, affecting local economies.

### What is the specific negative impact from marine sand mining?

- The mining of marine aggregates is increasing significantly and although the **consequences of substrate** mining are hidden, they are tremendous. Marine sand mining has an impact on seabed flora and fauna.
- **Dredging and extraction of aggregates from the benthic** (sea bottom) zone destroys organisms, habitats and ecosystems.
- It **deeply affects the composition of biodiversity**, usually leading to a net decline in faunal biomass and abundance or a shift in species composition. Long term recovery can



occur only where original sediment composition is being restored.

### Steps to tackle Sand Mining

- **Legal course:** Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) empowers state governments to make rules for regulating the grant of mineral concessions in respect of minor minerals and for purposes connected therewith.
- Ministry of Environment, Forest and Climate Change has issued **Sustainable Sand Mining Management Guidelines, 2016**.
- Grant of Environment Clearance for minor minerals, including sand and gravel, for mining

lease of area up to 5 hectare will be done by the District Environment Impact Assessment Authority headed by the District Collector / District Magistrate.

- Several states have formed their own rules to regulate sand mining.

### Closing remarks

- India is progressing on the technological front, and lot of progress has taken place in remote monitoring as well as surveillance in the field of mining. Hence, it is only reasonable to use technological progression to keep an effective check on mining activities, especially sand mining, in the country.

## 5.6 STATE OF THE RHINO REPORT 2023

### Context

- Recently, the International Rhino Foundation (IRF) published the report, State of the Rhino, 2023 which documents current population estimates and trends for the five surviving rhino species in Africa and Asia.

### Key Findings of the Report

- **Across the globe, rhino populations** that were once considered less threatened have seemingly become the primary target of poaching efforts, which are orchestrated by highly organised, transnational criminal syndicates.
  - However, the rhino population in India, Bhutan and Nepal is increasing and is estimated to touch 4,014, noted the report.
- **After reporting no poaching deaths in 2022**, India has recorded two deaths of Greater One-Horned Rhino (*Rhinoceros unicornis*) until September 2023.
- **The deaths were reported from Manas National Park and Kaziranga National Park.** Nepal also reported two poaching cases from Chitwan National Park in January, resulting in arrests of 15 suspected poachers.
- **The strict protection and transboundary management** have helped to increase the

rhino population by 20 per cent in the past decade.

- However, the species has been driven from areas where it was commonly sighted and full recovery depends on reintroducing them to spots from where they have disappeared.
- **A proposed rhino translocation to Manas National Park, scheduled for 2024**, is expected to ensure better growth opportunities and increased security and free movement of the population.
- **In 2022, the Assam government** sanctioned about 200 square kilometres of land to Orang National Park in north central Assam to expand the protected area by almost double.
- **The national park is connected to Burhachapori Wildlife Sanctuary** in the east, and it can create link across all protected areas that house rhinos – Manas National Park, Pobitora Wildlife Sanctuary, Orang National Park, the Laokhowa and Burhachapori Wildlife Sanctuaries and Kaziranga National Park.
- **The population of black rhinos**, described as critically endangered, is increasing, the report noted; the population is estimated at 6,195.
  - However, populations of white rhinos and Sumatran rhinos are decreasing,

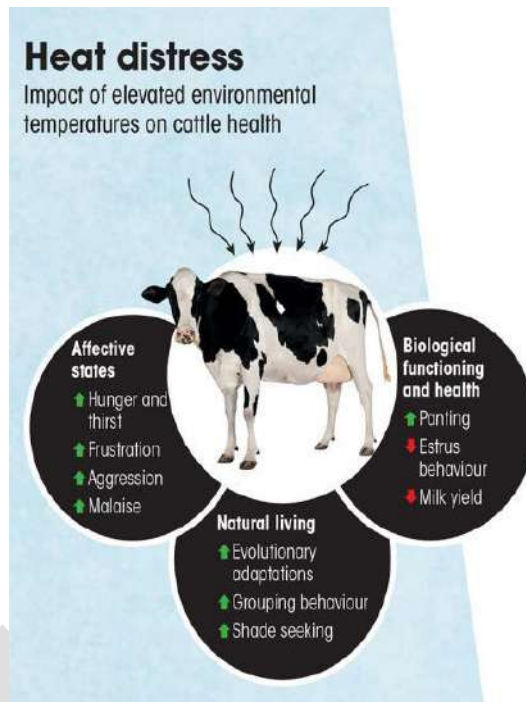
estimated to be about 15,942 and 34 to 47.

- **White rhino is near threatened and the latter is critically endangered.** The population of Javan rhinos are estimated to be stable, at around 76.
- **Around 15 rhinos went missing from Indonesia's Ujung Kulon National Park** over the past three years as they have not been captured in trap cameras, according to the Indonesian government.

*Black rhinos or Dicerosbicornis are spread across 12 African countries and once were most common among the other rhino species. It is estimated that the population of over 100,000 in the continent around the 1960s declined due to heavy poaching, reducing them to about 2,300 individuals in the mid-1990s.*

- However, the intense protection and management efforts have helped to stabilise and increase the population by 28 per cent in the past decade.
- **White rhinos or Ceratotheriumsimum are estimated to be around 15,942**, making them the most populous species found across 11 countries of Africa.
- "Historically as a species, white rhinos made an incredible comeback from fewer than 100 individuals in the early 1900s to more than 21,000 at the end of 2012," the report noted.

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last decade, the species has become a primary target of poachers who belong to transnational criminal syndicates.

- "Since 2012, white rhino numbers have decreased by 24 per cent to an estimated 15,942. The International Union for the Conservation of Nature Species Survival Commission's African Rhino Specialist Group reports that the species is still in decline today.

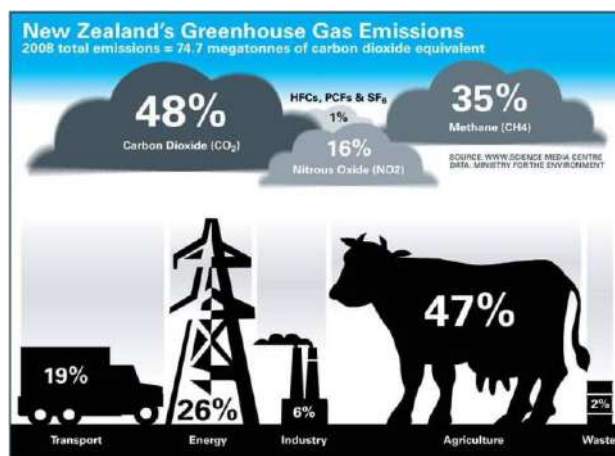
## 5.7 IMPACT OF CLIMATE ON DAIRY SECTOR

### Context

- In 2022, a study published in 'Lancet' estimated that increasing temperatures could reduce milk production in India's arid and semi-arid regions by 25% by end century in 2085.

### Key details:

- **Lactating dairy cows have an increased sensitivity to heat stress** compared with nonlactating (dry) cows, according to a review paper, published in the November 2017 issue of Journal of Dairy Science.
- **Moreover, because of the positive relationship between milk yield and heat production, higher**



- yielding cows are more challenged by heat stress than lower yielding animals.
- **Heat stress also decreases** reproductive success. Elevated temperatures affect the cow's ability to display natural mating behaviour, as it reduces both the duration and intensity of oestrus expression.
    - The decrease in conception rates during summer seasons can range between 20 and 30 per cent, it states.
  - **Farmers are already seeing high failures in conception rates** of the animals. Goyla has 120 animals at his farm in Delhi, and has a milk production of 700 to 750 kg daily.
  - **"Usually animals conceive every year but in the last few years, it's not happening.**
  - **At least 50 per cent of my buffaloes** are not conceiving every year. And milk is our primary business so we have to sell those buffaloes to carry on our livelihood.

#### Status of Milk Production in India

- According to 'Basic Animal Husbandry Statistics 2022, total milk production in India was 221.06 million tonnes in 2021-2022, keeping it the largest milk producing country in the world.
- The Indigenous cattle contribute 10.35% of the total milk production in the country whereas non-descript cattle contribute 9.82% and non-descript buffaloes contribute 13.49% of the total milk production in the country.

### Issues being faced by Dairy Farmers

#### Fluctuating Milk Prices:

- **Market Volatility:** Milk prices are subject to market fluctuations influenced by factors such as supply and demand, global economic conditions, and government policies.
- **Income Uncertainty:** Constant changes in milk prices make it challenging for dairy farmers to predict their income, plan for the future, and make informed financial decisions.

#### Input Costs:

- **Feed Costs:** The cost of animal feed, which is a significant expense in dairy farming, can be influenced by factors such as weather conditions, crop yields, and global commodity prices.
- **Veterinary Care and Medications:** Costs associated with veterinary care, medications, and disease prevention can add to the overall input costs for dairy farmers.

#### Regulatory Compliance:

- **Environmental Regulations:** Dairy farms may need to comply with environmental regulations related to waste management, water usage, and emissions, adding complexity and costs to their operations.
- **Milk Quality Standards:** Compliance with milk quality standards and regulations requires adherence to specific protocols, testing, and record-keeping.

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**5.8 SHORT ARTICLES**

## National Carbon Registry

### Context

- UNDP has developed an open-source software which allows countries to effectively manage national data and processes for trading carbon credits.

### Details:

- Carbon finance is key for the implementation of the NDCs, and the Paris Agreement enables the use of market mechanisms through provisions in Article 6.
- For this reason, interest in carbon markets is growing around the world, with 83 percent of NDCs stating the intent to make use of international market mechanisms to reduce GHG emissions.
- However, until now, there has not been an open-source software that allowed countries to start their own national registry to issue and manage carbon credits.



### About National Carbon Registry:

<b>About</b>	<ul style="list-style-type: none"> <li>• It is an open-source software that allows countries to effectively manage national data and processes for trading carbon credits.</li> <li>• <b>The software, called the National Carbon Registry, has recently been accredited as a digital public good (DPG).</b></li> </ul>
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>• The registry follows national and international best practices based on inputs from countries and is a result of ongoing work by the <b>Digital4Climate (D4C) Working Group, which includes UNDP, the World Bank, the United Nations Framework Convention of Climate Change (UNFCCC) and the European Bank for Reconstruction and Development (EBRD)</b> among others.</li> <li>• The initiative is also supported by a community of practice for knowledge exchange.</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• This initiative is a valuable opportunity for <b>countries to work together</b> towards a shared good with potential benefits beyond the <b>open-source registry system.</b></li> <li>• <b>To engaging with the evolution of ideas and testing</b> of approaches that can inform the arrangements of any country implementing Article 6 of the Paris Agreement.</li> </ul>
<b>Significance</b>	<ul style="list-style-type: none"> <li>• Developing carbon markets is an investment in <b>our sustainable future.</b></li> <li>• Digital market infrastructure will be critical to <b>scale-up high integrity, transparent carbon markets</b> that can be used by countries to increase the level of climate action and ambition.</li> <li>• This is why the <b>World Bank’s Climate Warehouse programme</b> is working closely with our partners on the implementation of this open-source carbon registry platform.</li> </ul>

## Assessment Report on Invasive Alien Species and their Control

### Context

- The severe global threat posed by invasive alien species is underappreciated, underestimated, and often unacknowledged.

### Key findings of the report:

- The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) Assessment Report on Invasive Alien Species and their Control (known as the “Invasive Alien Species Report”) finds that



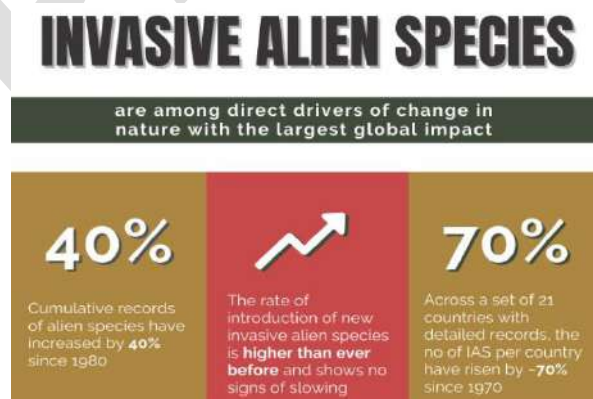
more than 37,000 alien species have been introduced by many human activities to regions and biomes around the world.

- It also reveals that alongside dramatic changes to biodiversity and ecosystems, the global economic cost of invasive alien species exceeded \$423 billion annually in 2019, with costs having at least quadrupled every decade since 1970.
- Invasive alien species are one of the five major direct drivers of biodiversity loss globally, alongside land and sea-use change, direct exploitation of organisms, climate change, and pollution.
- Target 6 of the recently adopted Kunming-Montreal Global Biodiversity Framework is to “eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services”.
- The IPBES Invasive Alien Species Assessment responds to the need to support decision-makers in understanding the current status and trends of invasive alien species, their impacts, their drivers, management, and options for policy that effectively deal with the challenges they pose.
- The Report was approved on Saturday in Bonn, Germany, by representatives of the 143 member States of IPBES.



#### The Invasive Alien Species Assessment:

- Assesses the array of invasive alien species that affect biodiversity and ecosystem services
- Analyzes the extent of the threat posed by such species to various categories of biodiversity and ecosystem services, including impacts on agrobiodiversity and food, human health and livelihood security
- Identifies the major pathways for and drivers of the introduction and spread of such species between and within countries
- Highlights the global status of and trends in the impacts of invasive alien species and associated management interventions by region and subregion, taking into account various knowledge and value systems
- Assesses the effectiveness of current international, national and subnational control measures and associated policy options that could be employed to prevent, eradicate and control invasive alien species, with an emphasis on response options.



## Funga

### Context

- United Nations Biodiversity has urged people globally to use the word ‘funga’ whenever they say ‘flora and fauna’, in order to highlight the importance of fungi.

### Details

- “It is time for fungi to be recognised and protected on an equal footing with animals and plants in legal conservation frameworks #saytheirname,” UN Biodiversity.



- Language creates reality, and including the word “FUNGA” in your language is important. Whenever referring to the macroscopic diversity of life on Earth, we should use “flora, fauna and FUNGA”, and “animal, plants and FUNGI.

**Fungi, along with Animalia (animals), Plantae (plants), Protista, Archaea/Archaeobacteria, and Bacteria or Eubacteria form the six ‘kingdoms’ of biology.**

**Key significance:**

**Fungi's Ecological Importance:**

- Fungi play crucial roles in ecosystems as decomposers, mycorrhizal partners with plants, and in nutrient cycling. They are essential for the health and balance of ecosystems, impacting both flora and fauna.

**The Power of Language:**

- Language shapes our perception of the world and influences our attitudes and actions. By adding "funga" to discussions about biodiversity, we acknowledge the importance of fungi and emphasize their role in the natural world.

**Scientific and Conservation Recognition:**

- The International Union for Conservation of Nature (IUCN) and the United Nations Biodiversity recognize the importance of incorporating fungi into conservation strategies and communication. This recognition can lead to better conservation efforts and policy development.

**Holistic Understanding:**

- Recognizing fungi alongside plants and animals promotes a more holistic understanding of ecosystems. It highlights that biodiversity encompasses not only the macroscopic world but also the often overlooked microorganisms like fungi.

**Promoting Fungal Conservation:**

- By elevating fungi's status in conservation discussions, there is a greater likelihood of efforts to protect and conserve fungal diversity, which is critical for maintaining healthy ecosystems.

**Indigenous and Local Perspectives:**

- Indigenous and local perspectives on conservation and biodiversity are essential. Language should be decolonized to reflect the values and knowledge of these communities and to avoid harmful practices in the name of conservation.

## Fin Whales

**Context**

- Iceland's government said it will resume hunting fin whales after a two-month halt, but with new guidelines aimed at killing them as quickly as possible to reduce suffering.

**Details**

- Iceland resumed hunting fin whales, which can reach lengths of over 20 metres (65 feet), in 2006 after a 20-year pause.
- A Regulation will be issued that will include detailed and stricter requirements for hunting equipment and hunting methods, as well as increased supervision,” the Ministry of Food, Agriculture and Fisheries.

**The International Whaling Commission** – a global body that oversees whale conservation – imposed a moratorium in 1986 after some species came close to extinction. Although several are still endangered or even on the brink of extinction, Iceland, along with Norway and Japan, have resumed commercial whaling.

**About Fin Whales**

<b>Status</b>	• They are the <b>second-largest animals</b> on Earth and are listed as <b>vulnerable</b> on the International Union for Conservation of Nature (IUCN) Red List.
<b>Family</b>	• The fin whale, scientifically known as <b>Balaenoptera physalus</b> , is a marine mammal belonging to the family.
<b>Size and shape</b>	• Fin whales are among the <b>largest animals on Earth</b> , reaching lengths of up to 85

	<p>feet (26 meters).</p> <ul style="list-style-type: none"> <li>• <b>They have long, sleek bodies with a narrow, pointed head</b>, and a prominent dorsal fin located about two-thirds of the way down their back.</li> </ul>
<b>Preferred environment</b>	<ul style="list-style-type: none"> <li>• Fin whales prefer deep, offshore waters, where they feed on small schooling fish, krill, and other planktonic organisms.</li> <li>• Breeding and calving occur in warmer, more sheltered waters.</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>• Fin whales face threats from <b>ship strikes, entanglement in fishing gear, habitat degradation, and noise pollution.</b></li> <li>• Historical whaling severely reduced their populations.</li> <li>• Fin whales are protected by <b>international agreements</b> like the International Whaling Commission's moratorium on commercial whaling.</li> </ul>
<b>Significance</b>	<ul style="list-style-type: none"> <li>• <b>As filter feeders</b>, fin whales play a crucial role in controlling plankton populations and maintaining the health of marine ecosystems.</li> <li>• <b>Keystone Species:</b> Their presence and feeding behavior can have cascading effects on the abundance and distribution of prey species.</li> </ul>

## Asiatic Wild Dog (Dhole)

### Context

- Villagers in Shivamogga district, Karnataka, were recently treated to a rare sighting of an Asiatic Wild Dog group, also known as Dholes.

### About Asiatic wild dogs

<b>About</b>	<ul style="list-style-type: none"> <li>• The Asiatic Wild Dog, also known as <b>kadunai, selunai, or the red dog</b>, is an elusive and <b>wolf-like forest-dwelling creature</b> that tends to avoid human contact. Its name 'Seelunai' is derived from the distinctive whistling sounds it produces.</li> <li>• These creatures are known to <b>travel in packs and are referred to as Asiatic Wild Dogs (Dhole) in English.</b></li> </ul>
<b>Native</b>	<ul style="list-style-type: none"> <li>• Central, South, East, and Southeast Asia.</li> </ul>
<b>Habitat and distribution</b>	<ul style="list-style-type: none"> <li>• The dhole occurs in most of India south of the Ganges, particularly in the <b>Central Indian Highlands and the Western and Eastern Ghats.</b></li> <li>• It is also present in <b>Arunachal Pradesh, Assam, Meghalaya, and West Bengal and in the Indo-Gangetic Plain's Terai region.</b></li> </ul>
<b>Other names</b>	<ul style="list-style-type: none"> <li>• Asian wild dog, Asiatic wild dog, Indian wild dog, whistling dog, red dog, and mountain wolf.</li> </ul>
<b>Status</b>	<ul style="list-style-type: none"> <li>• It is listed as <b>Endangered on the IUCN Red List.</b></li> <li>• <b>CITES Appendix II</b></li> <li>• protected under <b>Schedule 2 of the Wildlife Protection Act, 1972.</b></li> </ul>
<b>Reasons for the declining population</b>	<ul style="list-style-type: none"> <li>• Habitat loss, loss of prey, competition with other species, persecution due to livestock predation, and disease transfer from domestic dogs.</li> </ul>

## Swachh Vayu Survekshan 2023

### Context

- Chandigarh has been ranked a dismal 22nd among 47 cities with a population of over 10 lakh in the Swachh Vayu Survekshan 2023.

### Details:

- Better performing cities i.e top 3 cities in each category, will be rewarded by the Ministry of Environment, Forest and Climate change with cash prize, trophy and,

- Certificate with title “National Clean Air City” under National Mission for Clean Air on 7th September every year on “International day of Clean Air for Blue skies”.

**About Swachh Vayu Sarvekshan:**

**Under ministry**

- ‘Swachh Vayu Sarvekshan-Ranking of Cities’ falls under the Ministry of Environment, Forest and Climate Change under the National Clean Air Programme (NCAP).

**Components**

- The programme “Swachh Vayu Sarvekshan” is covered under the sub-component-3 “National and State level interventions and public outreach activities” of the Component “National Mission for Clean Air” (NMCA) of central sector scheme “Control of Pollution”.

SWACHH VAYU SARVEKSHAN 2023				City Name	Assesment by city	Assesment by CPCB	Rank
				<b>Category I: Population above 10L</b>			
<b>Category 1</b> (<10 Lakh Population)	1 <sup>st</sup>	Indore	187	Indore	191	187	1
	2 <sup>nd</sup>	Agra	186	Bhopal	187	181	5
	3 <sup>rd</sup>	Thane	185.2	Jabalpur	172	172	12
<b>Category 2</b> (3-5 Lakh Population)	1 <sup>st</sup>	Amravati	194	Gwalior	171	114	41
	2 <sup>nd</sup>	Moradabad	186.2	<b>Category II: Population ranging from 3 to 10L</b>			
	3 <sup>rd</sup>	Guntur	185.5	Ujjain	189	182	5
<b>Category 3</b> (<3 Lakh Population)	1 <sup>st</sup>	Parwanoo	193.6	Sagar	188.2	170.7	9
	2 <sup>nd</sup>	Kala Amb	193	<b>Category III: Population less than 3L</b>			
	3 <sup>rd</sup>	Angul	187.5	Dewas	181	180	6

Source: CPCB

**Objectives**

- To create awareness among all sections of the society
- Inform citizens about the health impacts related due to exposure
- Comparing air quality conditions at different locations/cities
- To achieve the goal of NCAP “Clean air for all”.



**Cities covered**

- The Swachh Vayu Sarvekshan promotes ranking of 131 cities in the country for implementing City Action Plans prepared as part of National Clean Air Programme (NCAP) for reducing air pollution upto 40% by 2025-26.

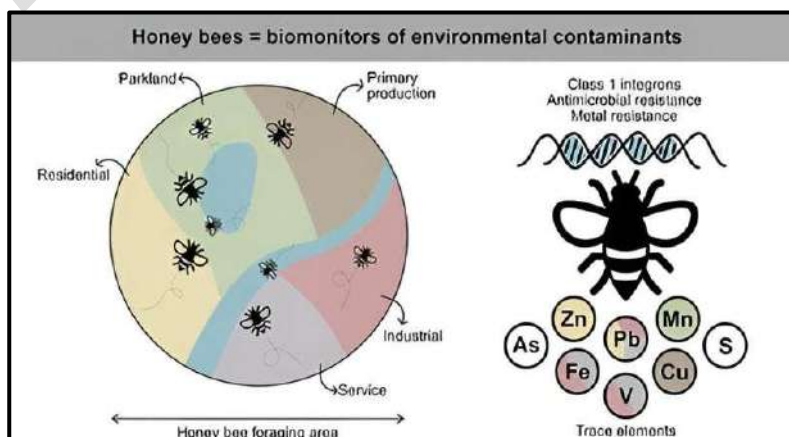
**Biomonitoring Agents for AMR**

**Context**

- A recent paper published in the journal Environmental Microbiology Reports proposes that honeybees could serve as biomonitors for the spread of antimicrobial resistance (AMR) in the environment.

**Details**

- **Biomonitoring** organisms can be plants, animals, microorganisms, or any biological entity that can respond to environmental changes and stressors.



- The study published in the journal Environmental Science and Technology highlights the potential of European honeybees (*Apis mellifera*) as biomonitoring agents for assessing the spread of antimicrobial resistance (AMR) in urban environments.

- The honeybee gut samples could be collected and analyzed for AMR genes using molecular methods, and this could provide a cost-effective and non-invasive way of monitoring AMR in different regions and habitats.

#### About Biomonitoring

- Biomonitoring is the **process of using living organisms to assess and monitor the quality of the environment, including air, water, soil, and ecosystems**. These living organisms, referred to as bioindicators or biomarkers, can provide valuable information about the environmental conditions, the presence of pollutants, and the health of ecosystems.

#### Key of the research and its implications

- **AMR refers to the ability of bacteria and other microorganisms** to resist the effects of drugs commonly used to treat infections.
  - This resistance can render previously treatable infections untreatable, posing a major threat to global public health.
- **The United Nations Environment Programme** report from February 2023 highlighted that if AMR is not effectively addressed, it could result in up to 10 million deaths annually by 2050.
  - This projection is comparable to the global death rate from cancer in 2020, underlining the severity of the issue.
- **The 2022 World Health Organization report** indicated that over 50% of life-threatening bacterial infections were becoming resistant to treatment.
  - This statistic is alarming, especially considering that data reporting challenges during the COVID-19 pandemic may have underestimated the true extent of the problem.

#### Role of European Honeybees

- **European honeybees, or Apis mellifera, were used in this study as environmental proxies or indicators**. They interact with various elements in the environment, including soil, dust, air, water, and pollen, as they forage for nectar and pollen.
- **These interactions with the environment make honeybees valuable for monitoring pollution** and environmental contaminants that could pose risks to humans. Essentially, the bees act as "crowdsourced" monitors of environmental health.



## **International Tribunal for the Law of the Sea**

### Context

- The nine island states have turned to the International Tribunal for the Law of the Sea to determine if carbon dioxide emissions absorbed by the oceans can be considered pollution.

### Details

- The **UN maritime court will hear a landmark case brought by a group of small island states** seeking protection of the world's oceans from catastrophic climate change.
- **The nine island states have turned to the International Tribunal for the Law of the Sea** to determine if carbon dioxide emissions absorbed by the oceans can be considered pollution, and if so, what obligations countries have to prevent it.
- During the hearing – regarded as the first climate justice case aimed at saving the ocean – small island nations that have been disproportionately harmed by the climate crisis will go up against high-emitting nations.
- **A group of nine SIDS countries will urge the International Tribunal for the Law of the Sea (ITLOS)** to rule on whether **greenhouse gas emissions absorbed by the marine environment** should be considered pollution. It will also seek the tribunal's advisory opinion on the obligations countries have to prevent it.

**Small Island Developing States (SIDS)** are a group of low-lying island nations that are home to approximately 65 million people and extremely vulnerable to the **impacts of climate change – despite being responsible for less than 1 per cent of global greenhouse gas emissions.**

**About International Tribunal for the Law of the Sea (ITLOS):**

<b>About</b>	<ul style="list-style-type: none"> <li>It is an intergovernmental organization created by the mandate of the <b>Third United Nations Conference on the Law of the Sea.</b></li> </ul>
<b>Established</b>	<ul style="list-style-type: none"> <li>It was established by the United Nations Convention on the Law of the Sea, signed at <b>Montego Bay, Jamaica, on December 10, 1982.</b></li> <li>The Convention <b>entered into force on November 16, 1994</b>, and established an international framework for law over all ocean space, its uses and resources.</li> </ul>
<b>Forum status</b>	<ul style="list-style-type: none"> <li>The ITLOS is one of four <b>dispute resolution mechanisms</b> listed in Article 287 of the UNCLOS.</li> </ul>
<b>Headquarters</b>	<ul style="list-style-type: none"> <li>The Tribunal is based in Hamburg, Germany.</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>The Convention also established the International Seabed Authority, with <b>responsibility for the regulation of seabed mining beyond the limits of national jurisdiction</b>, that is beyond the limits of the territorial sea, the contiguous zone and the continental shelf.</li> </ul>
<b>Signatories</b>	<ul style="list-style-type: none"> <li>There are <b>currently 168 signatories, 167 states plus the European Union.</b></li> <li>As of December 2022, holdouts included the United States and the Islamic Republic of Iran.</li> </ul>

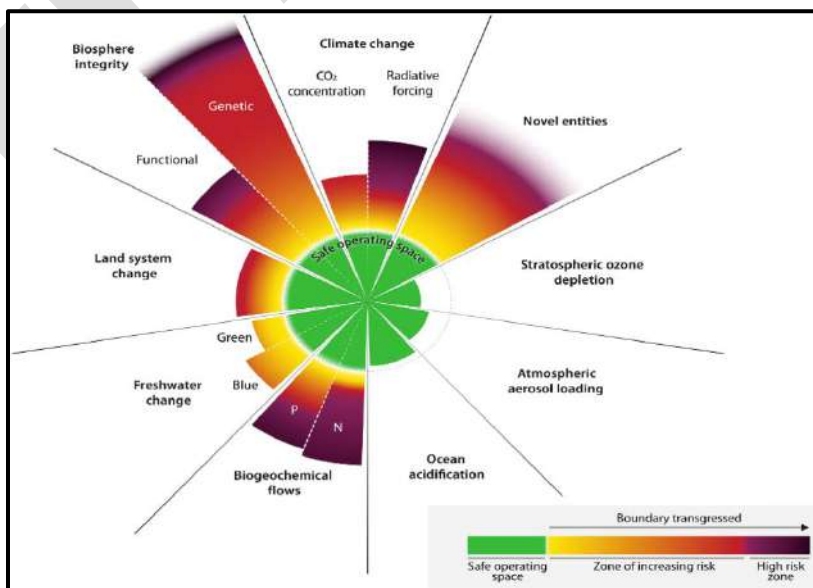
**Planetary Boundaries**

**Context**

- According to a new study, published in the journal Science Advances. The world has breached six out of nine planetary boundaries necessary to maintain Earth's stability and resilience.

**Details**

- The six boundaries include climate change, biosphere integrity (genetic diversity and energy available to ecosystems), land system change, freshwater change (changes across the entire water cycle over land), biogeochemical flows (nutrient cycles), and novel entities (microplastics, endocrine disruptors, and organic pollutants).
- The study results show that humans have caused a breach in our planet's safe climate and land system in 1988 and are now facing a risk of systemic disruption.
- The world has breached six of the nine planetary boundaries necessary to maintain Earth's stability and resilience, according to a new study.





- The study, published in Science Advances, was carried out by 29 scientists from eight different countries. The findings are an update to the planetary boundaries framework that was launched in 2009 to define the environmental limits within which humanity can safely operate.

**About Planetary Boundaries:**

- The planetary boundaries framework was first proposed by Johan Rockström and a group of 28 internationally renowned scientists in 2009 to define the environmental limits within which humanity can safely operate to maintain Earth's stability and biodiversity.



**Key findings of the study:**

<b>Climate change</b>	<ul style="list-style-type: none"> <li>• Climate change refers to the long-term alterations in Earth's temperature, precipitation patterns, and other meteorological phenomena, primarily driven by anthropogenic greenhouse gas emissions. The concentration of atmospheric carbon dioxide has surpassed 410 ppm, the highest level in the past 800,000 years at least.</li> </ul>
<b>Biosphere integrity</b>	<ul style="list-style-type: none"> <li>• The rapid decline in global biodiversity, driven by habitat destruction, overexploitation, pollution, and climate change, has led to what is now recognized as the Earth's sixth mass extinction. Species are currently going extinct at a rate 1,000 times higher than the background rate.</li> </ul>
<b>Biogeochemical flows</b>	<ul style="list-style-type: none"> <li>• The biogeochemical flows of nitrogen and phosphorus have been dramatically altered by human activities, such as fertilizer application and fossil fuel combustion. Approximately 80% of nitrogen and 75% of phosphorus applied to croplands end up in the environment.</li> </ul>
<b>Novel entities</b>	<ul style="list-style-type: none"> <li>• Novel entities encompass new substances, organisms, and technologies introduced into the environment by human activities, such as synthetic chemicals, genetically modified organisms, and nanomaterials. Over 350,000 different chemicals and mixtures are commercially available, with many having unknown long-term impacts.</li> </ul>
<b>Land system change</b>	<ul style="list-style-type: none"> <li>• Land-system change encompasses the conversion of natural landscapes, such as forests and wetlands, into agricultural and urban areas. Since the 1960s, the world has lost approximately 20% of its forest cover.</li> </ul>

**Red-necked phalarope**

**Context**

- A group of birders, who visited Kurichi tank in Coimbatore spotted a Red-necked phalarope (Phalaropus lobatus).

**Details**

- A group of birders, who visited Kurichi tank in Coimbatore on Sunday had a rare visitor who made their day memorable.
- They spotted a Red-necked phalarope (Phalaropus lobatus), a shore bird that breeds in the Arctic region, that possibly made a halt during its flight to a coastal destination.



**About Red-necked phalarope:**

<b>About</b>	<ul style="list-style-type: none"> <li>• The red-necked phalarope (Phalaropus lobatus) is a <b>small migratory bird species</b> belonging to the phalarope family, Phalaropidae.</li> <li>• These birds are known for their <b>striking breeding plumage</b>, unique feeding behavior, and long-distance migrations.</li> </ul>
<b>Physical Characteristics</b>	<ul style="list-style-type: none"> <li>• <b>Female Plumage:</b> Female red-necked phalaropes have more colorful plumage than males. They exhibit a reversed sexual dimorphism, with females being larger and more brightly colored than males. They have a brighter red neck during breeding.</li> <li>• <b>Non-breeding Plumage:</b> Outside of the breeding season, both males and</li> </ul>

	<p>females have a more subdued, grayish-brown plumage with a white belly.</p> <ul style="list-style-type: none"> <li>• <b>Size:</b> Red-necked phalaropes are small birds, measuring around 7-8 inches (18-20 centimeters) in length, with a wingspan of about 12-13 inches (30-33 centimeters).</li> </ul>
<b>Habitat and Distribution</b>	<ul style="list-style-type: none"> <li>• <b>Breeding Habitat:</b> These birds breed in Arctic and subarctic regions of North America, Europe, and Asia. They prefer marshy areas, shallow lakes, and tundra ponds where they build their nests.</li> <li>• <b>Migration:</b> Red-necked phalaropes are long-distance migrants. They travel to wintering grounds in the open ocean, typically in tropical or subtropical waters. Their migration routes can cover thousands of miles.</li> </ul>
<b>Conservation Status</b>	<ul style="list-style-type: none"> <li>• IUCN Red List: <b>Least Concern.</b></li> </ul>

## Gandhi Sagar Wildlife Sanctuary

### Context

- Authorities, in accordance with the Cheetah Action Plan, can most likely shift African cheetahs to Gandhi Sagar sanctuary situated on the northern border of Mandasaur and Nimach districts of Madhya Pradesh.

### Details

- India is preparing to import a fresh batch of cheetahs from South Africa, which some wildlife experts interpreted as an “all-is-well” message on the eve of the first anniversary of the cheetahs’ arrival from Namibia.
- As per Cheetah action plan there is a need to identify newer habitats for cheetahs.
- For monitoring, survival and other aspects of this species details plan is prepared by official.
- Earlier SC directed government to distribute cheetahs over a wider geographic range after three cheetahs were died within a short span of 45 days.

### About Gandhi Sagar Wildlife Sanctuary:

<b>About</b>	<ul style="list-style-type: none"> <li>• Gandhi Sagar Wildlife Sanctuary is a protected area located in the Indian state of <b>Madhya Pradesh</b>. It is situated in the <b>Mandasaur and Neemuch districts</b> of the state and covers a significant portion of the catchment area of the Gandhi Sagar Dam, a large reservoir on the <b>Chambal River</b>.</li> </ul>
<b>Established</b>	<ul style="list-style-type: none"> <li>• <b>Gandhi Sagar Wildlife Sanctuary was established in 1974</b>. It derives its name from the nearby Gandhi Sagar Dam, which was built on the Chambal River in 1960.</li> </ul>
<b>Geography and terrain</b>	<ul style="list-style-type: none"> <li>• The sanctuary's landscape is characterized by a combination of forested hills, grasslands, and the water bodies created by the <b>Gandhi Sagar Dam</b>. The topography includes <b>hills, plateaus, and valley</b>.</li> </ul>
<b>Flora</b>	<ul style="list-style-type: none"> <li>• The vegetation in Gandhi Sagar Wildlife Sanctuary is predominantly dry deciduous forest. The sanctuary is home to a variety of tree species, <b>including teak, tendu, babul, salai, and khair</b>.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>• Some of the mammals found in the sanctuary include <b>Indian leopard, chital (spotted deer), sambar deer, four-horned antelope, sloth bear, Indian fox, Indian wolf, striped hyena</b>, and various species of smaller carnivore.</li> </ul>
<b>Conservation</b>	<ul style="list-style-type: none"> <li>• The sanctuary is protected under Indian wildlife protection laws to conserve its biodiversity and ecosystems.</li> <li>• Efforts are made to <b>curb illegal activities</b> such as poaching and illegal logging to safeguard the wildlife and their habitats.</li> </ul>

## Elephant Corridors

### Context

- A new elephant corridor report released by the central government showed a 40 per cent increase in elephant corridors across 15 elephant range states in India.

### Details

- **The number of elephant corridors have increased to 150 against 88 registered** by the Government of India in 2010. The elephant population in the country is estimated to be over 30,000.

*Elephant corridors can be described as a strip of land that enables elephant movement between two or more friendly habitats.*

- The corridors were reported by respective state governments and ground validation methods were used to verify them.
- **West Bengal has the most elephant corridors – 26** – amounting to 17 per cent of the total corridors.
- **East central region contributed to 35 per cent**, that is 52 corridors, while North East region was second largest with 32 per cent number meaning 48 corridors in total.
- **Southern India registered 32, that is 21 per cent of the elephant corridors**, while northern India was lowest with 18 corridors or 12 per cent.
- **Majority of the corridors were noted to be within state boundaries** and the intensity of the use of corridors has increased by 40 per cent.
  - However, it showed that 19 per cent of the corridors, that is 29, showed a decrease in use while 10 others were seen impaired and demanding restoration for facilitating elephant movement.
- The decrease in corridor use is attributed to the habitat fragmentation, shrinkage and destruction.

### Notable Elephant Corridors in India:

- **The Elephant Corridor in Valparai:** Located in the Anamalai Hills of Tamil Nadu, this corridor connects the Anamalai Tiger Reserve and the Parambikulam Wildlife Sanctuary.
- **The Corridor in Rajaji National Park:** Connecting the Rajaji National Park in Uttarakhand, this corridor is crucial for the movement of elephants between the Shivalik and Himalayan ecosystems.
- **The Kalapathar Corridor:** Situated in Assam, this corridor facilitates the movement of elephants between the Karbi Anglong Hills and the Nagaon district.
- **The Eastern Ghats Elephant Corridor:** Spanning multiple states, this corridor connects fragmented habitats in the Eastern Ghats, providing crucial links for elephant populations.



## Balsam

### Context

- Balsams (genus Impatiens) are in full bloom in Munnar.

### Details:

- Impatiens is a genus of more than 1,000 species of flowering plants, widely distributed throughout the Northern Hemisphere and the tropics.
- The genus Impatiens occurs in Africa, Eurasia and North America. Two species (Impatiens turrialbana and Impatiens mexicana) occur in isolated areas in Central America (southern Mexico and Costa Rica).
- Most Impatiens species occur in the tropical and subtropical mountain forests in Africa, Madagascar, the Himalayas, the Western Ghats (southwest India) and southeast Asia.
- In Europe only a single Impatiens species (Impatiens noli-tangere) occurs naturally. However, several neophytic species exist.

### About Balsam

#### About

- "Balsam" is a term that can refer to various botanical entities, including plants, resins, or products derived from plants.

## Products

- **Balsam Fir Essential Oil:** Extracted from the needles of the Balsam Fir, this essential oil is known for its fresh and invigorating fragrance. It is used in aromatherapy and as a natural remedy.
- **Balsam Pillow:** A pillow filled with the needles or resin of certain balsam trees. These pillows are often used for their aromatic properties.
- **Balsam of Tolu:** Another balsam obtained from a tree (*Myroxylon toluiferum*). It is used in perfumery and traditional medicine.

## Traditional Uses

- **Balsams have been historically used in traditional medicine** for their perceived healing properties, including anti-inflammatory and soothing effects.
- Some balsamic substances are used in the **production of ointments, salves, and topical applications.**
- **The aromatic nature of balsam** has led to its use in perfumery and as a fragrance in various products.

## Tasmanian Tiger

### Context

- Scientists have for the first time recovered Ribonucleic acid (RNA) from an extinct species, the Tasmanian tiger, raising hope for the resurrection of animals once thought lost forever.

### Details

- Scientists were recently able to recover and sequence RNA from a roughly 130-year-old Tasmanian tiger, also known as a thylacine, preserved at a museum in Stockholm.
- The feat marks the first time RNA molecules have been isolated and decoded from an extinct species.
- Tasmanian tigers were a large, carnivorous marsupial that experts say went extinct about 80 years ago.
- Found on the island of Tasmania off Australia's south coast, the animal had distinct dark stripes running from its shoulders to its tail, as well as a dog-like head with powerful jaws and a pouch, according to the Australian Museum.

### About Tasmanian Tiger

<b>Name</b>	<ul style="list-style-type: none"> <li>• <b>The thylacine</b> (<i>Thylacinus cynocephalus</i>), also commonly known as the Tasmanian tiger or Tasmanian wolf, is an extinct carnivorous marsupial.</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• <b>Native to the Australian mainland</b> and the islands of Tasmania and New Guinea.</li> </ul>
<b>Description</b>	<ul style="list-style-type: none"> <li>• <b>The thylacine was known as the Tasmanian tiger</b> because it displayed dark transverse stripes that radiated from the top of its back, and it was known as the Tasmanian wolf because it had the general appearance of a medium-to-large-size canid.</li> <li>• <b>The name thylacine is derived from thylakos</b> meaning "pouch" and ine meaning "pertaining to", and refers to the marsupial pouch.</li> <li>• <b>Both genders had a pouch.</b> The females used theirs for rearing young and the males used theirs as a protective sheath, covering the external reproductive organs.</li> </ul>
<b>Cause of extinction</b>	<ul style="list-style-type: none"> <li>• <b>They had almost died out on the Australian mainland</b> from around 2,000 years ago, most likely because of the introduction of dingoes or due to climate change.</li> <li>• Prior to European settlement around 5,000 remained in the wild on Tasmania.</li> <li>• <b>European settlers, some of whom harbored mostly unwarranted</b> fears that the animal would attack livestock, relentlessly hunted the striped, carnivorous marsupials, which resembled wolves more than felines.</li> </ul>
<b>Significance</b>	<ul style="list-style-type: none"> <li>• The thylacine is widespread in popular culture and is a cultural icon in Australia.</li> <li>• <b>The thylacine has been used extensively</b> as a symbol of Tasmania.</li> <li>• The animal is featured on the official coat of arms of Tasmania.</li> </ul>



## 5.9 SNIPPETS

### GRIHA Norms

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- The Green Rating for Integrated Habitat Assessment (GRIHA) is India's national framework for the assessment of environmental impacts of built environments with an individual version applying to new buildings and one for existing buildings (both starting at 2,500 sqm built-up area).
- The system has been developed to help 'design and evaluate' new buildings (buildings that are still at the inception stages).
- A building is assessed based on its predicted performance over its entire life cycle – inception through operation.



### Chitala Fish

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- Chitala is a knife fish from Bangladesh, India, Nepal, and Pakistan, found in the Brahmaputra, Indus, Ganges, and Mahanadi River basins.
- It is sometimes known as the Indian featherback or Indian knifefish.
- Chitala reaches a maximum length of 122 cm but more commonly reaches about 75 cm.



### Caribbean false Mussel

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- It is originally from the Atlantic and Pacific coasts of South and Central America.
- It could have reached the Indian coast through ballast waters (the seawater that ships carry inside for better stability) and later spread to the estuaries through smaller fishing vessels.
- This invasive species has spread across estuaries from Thiruvananthapuram to Kasaragod.
- It has also started affecting the mussel aquaculture farms in Kerala.
- It reproduces rapidly, is very tolerant, and can even survive in freshwater.



### Schizostachyum Andamanicum

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- This is an endemic bamboo species native to the Andaman and Nicobar Islands, characterized by its thin, large, hollow, erect culms with long internodes.
- It serves as the primary material for the reusable straw.
- It has small, white flowers that are arranged in clusters. The seeds are small and black, and the seedlings have thin, light green leaves.





## Fujianvenatorprodigiosus

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- Fujianvenator is a member of a grouping called avialans that includes all birds and their closest non-avian dinosaur relatives.
- Despite their modest beginnings, birds survived the asteroid strike 66 million years ago that doomed their non-avian dinosaur comrades.
- Its lower leg bone - the tibia - was twice as long as its thigh bone - the femur.
- Such dimensions are unique among theropods; it also had a long bony tail.
- The forelimb is generally built like a bird's wing but with three claws on the fingers, which are absent from modern birds. So you can call it wing.



## Samudra Prahari

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- It is an Indian Coast Guard Ship (ICGS) specially designed for pollution control.
- It is the first pollution control vessel of its kind in Southeast Asia.
- It is equipped with the most advanced pollution Response and Control equipment for mitigating oil spills in the Exclusive Economic Zone.
- It has tanks and inflatable barges for storage of oil spills.
- The ship is capable of unhindered oil recovery operations with a storage capacity of 500 KL.



## Red Fire Ants

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- The Red Imported Fire Ant (Solenopsisinvicta), also known as the fire ant or RIFA, is a species of ant native to South America.
- Red Imported Fire Ant is native to South America but has spread throughout much of the United States, Mexico, the Caribbean, China, and Australia over the past century.
- They can be found in rainforests, disturbed areas, deserts, grasslands, alongside roads and buildings, and in electrical equipment.



## Caribbean Box Jellyfish

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- Researchers have discovered that the brainless Caribbean box jellyfish, Tripedalia cystophora, belonging to the Cnidaria phylum, can learn to avoid obstacles using both visual and mechanical cues.
- These jellyfish, measuring just a centimeter in length, have a primitive nervous system but exhibit an extraordinary cognitive ability known as "associative learning."
- They can navigate murky waters and complex environments, such as submerged mangrove roots, by responding to visual cues and adapting their behavior to avoid harm.



## Ephemerals

- An ephemeral plant is one marked by short life cycles. They are of two types — annual and perennial.
- Annual ephemerals form new individuals every year and are seen for a very short period. They form seeds at the end of their life cycle, remaining dormant till the next year.
- Perennials have a source like a tuber or a bulb in the soil, so it is the same individual, but the other parts (stem, flowers) are newly formed.

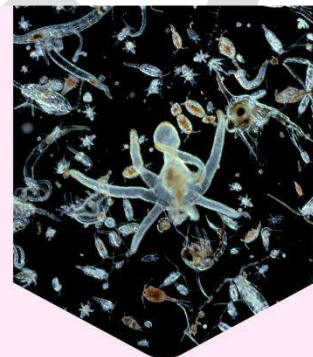
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## Plankton

- Phytoplankton are microscopic, unicellular, filamentous, or colonial, photosynthetic microalgae or cyanobacteria that live in water.
- Primary Producers: Phytoplankton serves as the primary producers in aquatic ecosystems, producing organic compounds from inorganic substances.
- Base of the Food Chain: Phytoplankton forms the base of the marine food chain, providing food for various zooplankton and other higher trophic levels.
- Role in Oxygen Production: Phytoplankton contributes significantly to global oxygen production through photosynthesis.

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### 5.10 1 MAINS & 5 MCQs

**Q1. Despite producing a quarter of global milk production, India is struggling with runaway milk prices. Critically analyze.**

#### Answer

- India, the world's largest milk producer for over half a century, is struggling with runaway milk prices. Despite producing a quarter of global milk production, milk prices are at an all-time high. Average retail price of milk has increased by 18 % in the past two years.

#### Factors for the struggle in India:

- **Overproduction:** While India is a major producer of milk, there can be instances of overproduction, leading to a surplus in the market. Oversupply without a corresponding increase in demand can put downward pressure on milk prices.
- **Fluctuating Demand:** The demand for milk and dairy products can be influenced by various factors, including economic conditions, consumer preferences, and

changing dietary habits. Fluctuations in demand can contribute to price volatility.

- **Lack of Infrastructure:** India's dairy sector may face challenges related to the lack of robust infrastructure for milk storage, transportation, and processing. Inefficient supply chains can contribute to wastage and reduce the overall value realization for farmers.
- **Seasonal Variability:** Milk production can be seasonal, leading to fluctuations in supply. The lack of effective cold storage and processing facilities to handle seasonal variations can impact prices.
- **Government Subsidies:** The government's interventions, including subsidies on inputs such as fodder and animal healthcare, can impact the cost of production for farmers. However, the effectiveness and efficiency of these subsidies may vary.
- **Price Support Mechanisms:** Government-initiated price support mechanisms and procurement programs can influence prices

but may also face challenges in implementation and reach.

- Addressing this challenge requires a comprehensive approach that considers both the supply and demand sides, improves infrastructure, enhances market efficiency,

and ensures fair returns to farmers. Additionally, policy measures need to be implemented effectively to stabilize prices and create a sustainable and equitable dairy ecosystem.

**Q2. Consider the following statements:**

1. 'Swachh Vayu Sarvekshan- Ranking of Cities' falls under the National Clean Air Programme (NCAP).
2. Rankings of Cities under it are based on measurement of air quality parameters.

**Which of the statements given above is/are correct?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q3. Which of the following methods can be used to mitigate Phytoplankton/ Algal Blooms?**

1. Water Column Mixing
2. Legacy Nutrient Removal
3. Manipulating the Food Web
4. External Nutrient Loading Reduction

**How many of the above are correct?**

- a) Only 1
- b) Only 2
- c) Only 3
- d) All are correct.

**Q4. Consider the following statements:**

1. Balsams are widely distributed throughout the Northern Hemisphere and the tropics.
2. The zygomorphic flowers of Impatiens are protandric.
3. All Impatiens species are herbaceous annuals or perennials with succulent stems.

**How many of the above statements are incorrect?**

- a) Only 1
- b) Only 2
- c) All 3
- d) None

**Q5. Consider the following statements with reference to Red-necked phalarope.**

1. It breeds in the Arctic regions of North America and Eurasia.
2. It is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies.
3. It is listed as critically endangered in the IUCN Red List.

**How many of the above are incorrect?**

- a) Only 1
- b) Only 2
- c) All 3
- d) None

**Q6. Which of the following statements about fungi is true?**

1. Fungi are photosynthetic organisms.
2. Yeasts are a type of fungi commonly used in baking and brewing.
3. Fungi belong to the Plantae kingdom.

**Select the correct answer using the code given below:**

- a) Only Statement 1 is true.
- b) Only Statement 2 is true.
- c) Only Statement 3 is true.
- d) Statements 2 and 3 are true.

ANSWERS: 2) a, 3) d, 4) a, 5) a, 6) b



## 6. SOCIAL ISSUES

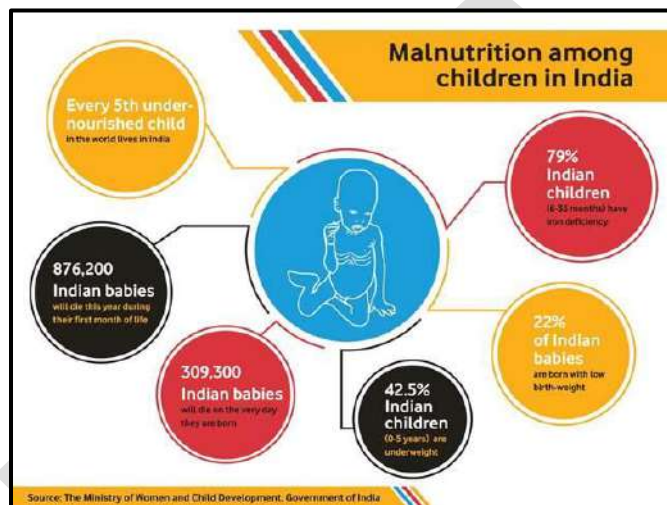
### 6.1 BRIDGING THE MALNUTRITION GAP IN INDIA

#### Context

- Nutrition counselling is a simple but powerful strategy to combat malnutrition.

#### What is Malnutrition?

- Malnutrition refers to deficiencies or excesses in nutrient intake, imbalance of essential nutrients or impaired nutrient utilization. The double burden of malnutrition consists of both undernutrition and overweight and obesity, as well as diet-related noncommunicable diseases.
- Undernutrition manifests in four broad forms: **wasting, stunting, underweight, and micronutrient deficiencies.**



#### Ecology of undernutrition

- Malnutrition is an ecological problem that does not occur alone. It accompanies poverty, disturbed family structure, ignorance and despair.

#### Poverty

- Because of low purchasing power, poor cannot afford to buy desired amount and desired quality of food for the family. This adversely affects their capacity for physical work and they earn less. Thus starts a vicious cycle of poverty, under nutrition, diminished work capacity, low earning and poverty

#### Feeding habits

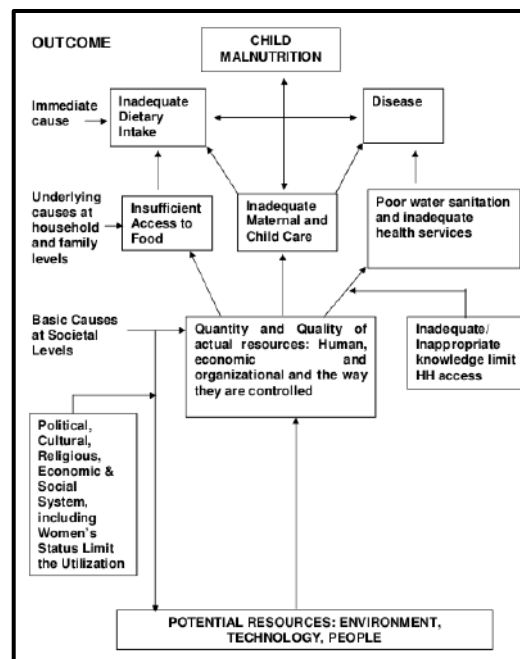
- Lack of awareness of nutritional qualities of food, irrational beliefs about food, inappropriate child rearing and feeding habits all lead to undernutrition in the family.

#### Infections

- Infections like malaria and measles or recurrent attacks of diarrhoea may precipitate acute malnutrition and aggravate the existing nutritional deficit. Metabolic demands for protein are higher during infections and the child may take in less food either due to reduced appetite or due to food restrictions by the mother. Thus, leading to malnutrition.

#### Socio-cultural factors

- Inequitable distribution of food in the family. In most of the poor households, women and preschool children especially girls receive less food than the economically active male members
- Large families Rapid succession of pregnancies adversely affects the nutritional status of the mother. As she tries to manage the big family she may neglect her own health and antenatal checkups during



- pregnancy. Undernutrition may lead to low birth weight baby. In large families per capita availability of food is also less.
- Poor quality of housing, sanitation and water supply. These contribute to ill health and infections thus Contributing to malnutrition.
- Inadequate maternal and child care- Improving the primary health centres and other health care services in the rural areas will definitely improve the nutrition profile of women and children.

### Government Efforts

- Over the years, the government has made painstaking efforts to ensure food security. Now, children have mid-day meals in their schools and people receive **monthly rations through an ever-improving Public Distribution System. Ready-to-eat packets and hot meals** are served to mothers and children at **Anganwadi Centres (AWCs), under the Prime Minister's Overarching Scheme for Holistic Nourishment (POSHAN) Abhiyaan: to address Malnutrition.**
- Further, various add-ons such as **egg, banana, protein powders, peanut chikki and jaggery** are also being distributed under various special State-specific schemes, an example being the Mukhyamantri Suposhan Yojana in Chhattisgarh.

*But, nutrition security is still a distant dream.*

### Direct nutrition and health interventions

#### Improved health care system

- Infections like malaria, measles and diarrhea are prevalent in our society and they precipitate acute malnutrition among children and infants. A good health care system that provides immunization, oral rehydration, periodic deworming, early diagnosis and proper treatment of common illnesses can go a long way in preventing malnutrition in the society.

#### Nutrition education

##### People can be educated on

- The nutritional quality of common foods
- Importance and nutritional quality of various locally available and culturally accepted low cost foods
- Importance of exclusive breastfeeding for six months and continuing to breast feed up to two years or beyond.
- Damage caused by irrational beliefs and cultural practices of feeding
- Recipes for preparing proper weaning foods and good supplementary food from locally available low cost foods.
- Importance of including milk, eggs, meat or pulses in sufficient quantities in the diet to enhance the net dietary protein value.
- Importance of feeding children and adults during illness
- Importance and advantages of growing a kitchen garden
- Importance of immunizing their children and following proper sanitation in their day to day life.

#### Early detection of malnutrition and intervention

- The longer the developmental delays remain uncorrected, the greater the

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chance of permanent effects and hence intervention must occur during pregnancy and first three years of life.

- A well recorded growth chart can detect malnutrition very early. Velocity of growth is more important than the actual weight at a given time
- If growth of the child is slowed or is arrested as shown by flat curve on the growth card, physician should be alerted and any hidden infection or any reason for nutritional deficiency must be evaluated and taken care of.
- If growth chart is not maintained, anthropometric indices like, weight, height mid arm circumference, and chest circumference etc. can be measured and used for evaluation of nutrition.

#### Nutrition supplementation

- Usually, biologically vulnerable groups like pregnant women, infants, preschool going and school going children are targeted by various welfare measures conducted by the government. Calories, proteins and micronutrients like iron, vitamin A and zinc can be supplemented.

#### Objective of nutrition supplementation of infants and children includes

- To treat and rehabilitate severely malnourished subjects .
- Improve the general health and wellbeing of children, increase the resistance to infectious illnesses and thereby decrease morbidity,
- Accelerate the physical growth and mental development of children
- Improve the academic performance and learning abilities of children.

#### Objective of supplementing pregnant and lactating women include

- Preventing anemia in the mother thus improving her health and the pregnancy outcome.
- Improving calorie intake and prevent low birth weight baby, thus breaking the vicious cycle of intergenerational cycle of growth failure.
- Supplementing calcium to prevent osteoporosis.

#### **Focussing on Nutrition Counselling: An important way ahead**

- People often lack knowledge of proper eating and feeding practices. Myths around food and increased accessibility to highly processed food have compounded the problem. Nutrition counselling can potentially be the answer to this problem.
- It is important to note that **“Jan Andolan”, or social and behaviour change communication (SBCC)**, has been a facet of POSHAN Abhiyaan.
- This includes bicycle rallies, plantation of Poshan Vatikas, celebration of Poshan Maah, Poshan Pakhwaras and GodhBharaais.
- Different States have held various awareness programmes under the SBCC. However, the **concept of nutrition counselling has yet to be properly institutionalised and implemented uniformly across States.**
- In fact, according to the POSHAN Abhiyaan Progress Report, 2018, **“A focused and coherent SBCC Action Plan is essential to take the work of POSHAN Abhiyaan forward.”** Thus, there is **a need for field staff to be properly trained in nutritional counselling and there is a need for it to be implemented, mandatorily and uniformly, by States.**

## CASE STUDY

### Lessons from Bemetara

Bemetara in Chhattisgarh is a puzzling district in the context of its malnutrition status. Situated in the fertile plains of Chhattisgarh, it is unaffected by Naxalite activities and is agriculturally rich. Its inhabitants are also relatively affluent. However, the number of Severe Acute Malnourished (SAM) children there was as high as 3,299 in December 2022. This figure bears a striking resemblance to the situation in tribal-dominated and Naxal-affected districts such as Bastar. It points to the lack of proper knowledge about feeding practices. The problem is not about access but improper knowledge around when, how and what to eat. This is why nutrition counselling combined with robust monitoring was chosen as the modus operandi for this area.

**Potth Laika Abhiyaan – which means “Healthy Child Mission” (literal translation) in the Chhattisgarhi language – is a nutrition counselling programme that is being implemented** in 72 of the most affected AWCs in the Bemetara sub-division of Bemetara district. It has the technical support of UNICEF, Chhattisgarh. Here, ground-level staff from the Health and Women and Child Development departments have been well trained on how to provide nutrition counselling in the region. Every Friday, the parents of the targeted SAM and Medium Acute Malnourished (MAM) children are summoned and counselled. They are taught in simple Chhattisgarhi language the importance and the constituents of “TirangaBhojan” (a balanced diet), the need to wash hands regularly and many other tips in order to lead a healthy lifestyle.

Many harmful dietary myths and superstitions are dispelled as well. The progress of the targeted children is being monitored. Local leaders such as sarpanchs, panchayat sachivs and religious heads have also participated in the counselling sessions. Door-to-door visits to the houses of targeted children are also done to monitor their progress.

Data that is encouraging and significant

As a result of the simple mantra of nutrition counselling along with regular monitoring and evaluation, as many as 53.77% of targeted children were brought out of malnutrition by the Potth Laika Abhiyaan, in a span of nine months, i.e., from December 2022 to July, 2023 – 599 out of 1,114 children. Further, 61.5% of MAM children and 14.67% of SAM children have been brought out of malnutrition. These figures are both encouraging and statistically significant. When comparing this with a random control group of 20 AWCs where this mission was not being implemented, only 30.6% children were taken out of malnutrition. That is, 33.8% MAM children and zero SAM children were taken out of malnutrition. This shows a total increase of 23% over and above the control group, which is very encouraging. Further, while providing meals requires elaborate budgeting and the risk of leakages, this mission is a zero cost one, requiring no more than a few training sessions and regular monitoring. Thus, it has shown itself to be cost effective as well.

## 6.2 GENDER DISPARITY

### Context

- The reason so few women win awards lies in the selection process. People nominating for prizes are predominantly men who fail to nominate their women colleagues.

### Detail


- A Shanti Swarup Bhatnagar Prize is known to be a significant boost not just to the scientific career of the winner, but also to the profile of their institution.

- But there's another thing that the prize is known for: Its consistent failure to recognise women scientists.
- Instituted in 1958 by the Council of Scientific and Industrial Research (CSIR), about 12 scientists under the age of 45 years win this prize every year.
- The prizes cover seven domains of science – physical, chemical, biological, medical, engineering, mathematics and atmospheric.
- Women make up around 14 per cent of India's working scientists. While this figure is concerning, it renders the argument there aren't enough women.
- The Nobel Prizes have a similarly pathetic gender ratio. Only 24 of the 343 science prizes have gone to women. However, for all its faults, the Royal Swedish Academy of Sciences, which awards the prizes, has indicated that they are conscious of the gap.
- Encouragingly, 31 of the 61 prizes for women (across all categories) came since the year 2000. There are no comparably encouraging signs from the Bhatnagar awards.

## Gender gap

**India jumped eight spots to rank 127 in the Global Gender Gap Index, 2023. A look at how select countries fared**

Rank	Country	Score	Rank change
1	Iceland	0.912	-
2	Norway	0.879	+1
59	Bangladesh	0.722	+12
103	Bhutan	0.682	+23
107	China	0.678	-5
115	Sri Lanka	0.663	-5
116	Nepal	0.659	-20
127	India	0.643	+8
142	Pakistan	0.575	+3



**Gender disparity in India** refers to the unequal treatment, opportunities, and outcomes between individuals based on their gender, particularly favoring males over females. This issue manifests in various aspects of life, impacting social, economic, and political spheres.

### Dimensions of gender disparity in India

#### Education:

- **Enrollment Rates:** Historically, there has been a gender gap in enrollment rates, with fewer girls attending schools compared to boys, particularly in rural areas.
- **Dropout Rates:** Girls often face higher dropout rates due to factors like early marriage, cultural norms, and lack of facilities like separate toilets for girls.

#### Employment:

- **Workforce Participation:** Women's workforce participation is lower compared to men. Many women, especially in rural areas, are engaged in unpaid household work and are not part of the formal labor force.
- **Wage Gap:** Even when women participate in the workforce, they often face a wage gap, receiving lower remuneration than their male counterparts for similar work.

#### Healthcare:

- **Sex-Selective Practices:** Sex-selective practices, including female feticide and infanticide, contribute to a skewed sex ratio. The preference for male children has led to imbalances in the population.
- **Healthcare Access:** Women, especially in rural areas, may face challenges in accessing healthcare services, leading to disparities in maternal and child health.

#### Legal Rights:

- **Property Rights:** Despite legal provisions, women's access to and control over property are limited in many regions.
- **Violence Against Women:** Gender-based violence, including domestic violence and harassment, remains a significant concern. Legal frameworks exist, but implementation and reporting challenges persist.

#### Political Representation:

- **Underrepresentation:** Women are underrepresented in political spheres, including at the local, state, and national levels. While there have been efforts to increase women's participation, progress has been slow.

### Challenges of Gender disparity in India:

#### Gender-Based Violence:

- High levels of violence against women, including domestic violence, sexual harassment, and dowry-related violence, persist. Lack of stringent enforcement of laws and societal norms contribute to this issue.

#### Limited Access to Education:

- Despite progress, gender gaps in educational attainment persist. Girls, particularly in rural areas, may face barriers such as lack of schools, cultural norms, and economic constraints, limiting their access to quality education.

#### Unequal Economic Opportunities:

- Gender-based occupational segregation is prevalent, with women often concentrated in low-paying and informal sectors. Disparities in wages and limited access to economic resources contribute to gender-based economic inequality.

#### Underrepresentation in Decision-Making:

- Women are underrepresented in political and decision-making processes. Limited political representation and decision-making roles hinder the formulation of policies that address gender-specific concerns.

### Measures taken by the government

- **Laws Against Gender-Based Violence:** Stringent laws have been enacted to address gender-based violence, including the Criminal Law (Amendment) Act, 2013, which amended the Indian Penal Code to strengthen provisions related to crimes against women.
- **Sexual Harassment at Workplace (Prevention, Prohibition, and Redressal) Act, 2013:** This Act mandates the establishment of Internal Complaints Committees in workplaces to address and prevent sexual harassment.
- **Beti Bachao, Beti Padhao (Save the Daughter, Educate the Daughter):** Launched to address the declining child sex ratio, this scheme aims to promote the education of girls and address gender-based discrimination.
- **Schemes for Women's Education:** Initiatives like Sarva Shiksha Abhiyan and Rashtriya Madhyamik Shiksha Abhiyan focus on improving access to quality education for girls.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY):** A maternity benefit program that provides cash incentives to pregnant and lactating women for the first live birth.
- **National Nutrition Mission (POSHAN Abhiyaan):** A multi-ministerial convergence mission that addresses malnutrition, with a specific focus on the nutritional needs of pregnant women and children.

## 6.3 GLOBAL TRENDS IN CHILD POVERTY

### Context

- In a recent assessment, Global Trends in Child Monetary Poverty, conducted jointly by the World Bank Group and UNICEF, it has been revealed that a staggering proportion of the world's extremely poor population is comprised of children.
- **The estimates show a reduction in the extreme child poverty rate from 20.7 per cent to 15.9 per cent between 2013 and 2022.**
- **While 49.2 million children** were lifted out of extreme poverty, this was about 30 million less than projected in the absence of COVID-19-related disruptions.

World Bank Group and UNICEF, presents estimated trends in child poverty from 2013 to 2022, based on three international poverty lines: \$2.15 (extreme poverty), \$3.65 (lower middle income), and \$6.85 (upper middle income).

- The extreme child poverty now casted estimate in 2022 (15.9 per cent) is on par with the child poverty rate in 2019, indicating approximately three years of lost progress.
- **In 2022, now casted estimates show:**
  - 333 million children living in extreme poverty (\$2.15)
  - 829 million children living below \$3.65
  - 1.43 billion children living below \$6.85
- **Children are more than twice as likely as adults** to live in extreme poverty. They comprise more than half of those living in extreme poverty, while their share of the population is 31 per cent.

**The global landscape is witnessing a deeply concerning trend - the increasing prevalence of child poverty.**

<b>Children Predominating Extreme Poverty</b>	<ul style="list-style-type: none"> <li>• In 2022, children constituted a striking <b>52.5 percent</b> of the total global extreme poor population.</li> <li>• This unsettling statistic signifies that every second individual living in extreme poverty is a child.</li> </ul>
<b>Escalating Child Share in Poverty</b>	<ul style="list-style-type: none"> <li>• The proportion of children among the extreme poor is steadily rising, surging <b>from 47.3 percent in 2013 to 52.5 percent in 2022.</b></li> </ul>
<b>Consistent Assessment Efforts</b>	<ul style="list-style-type: none"> <li>• This marks the third collaborative assessment by the World Bank Group and UNICEF, following previous reports in 2016 and 2020.</li> <li>• The assessment incorporates a <b>newly adopted global poverty line of \$2.15</b>, introduced in mid-September 2022, with updated data from the <b>World Bank's Poverty and Inequality Platform.</b></li> </ul>
<b>Children Bearing Disproportionate Poverty</b>	<ul style="list-style-type: none"> <li>• <b>Child poverty exhibits a stark disparity; in 2022, 9 percent of the global child population</b> resided in extremely poor households, whereas only 6.6 percent of adults did.</li> <li>• <b>Children are over twice as likely as adults</b> to endure extreme poverty, comprising more than half of the extreme poor, despite constituting only 31 percent of the total population.</li> </ul>
<b>Child Poverty in India</b>	<ul style="list-style-type: none"> <li>• <b>India grapples with its share of child poverty, with 11.5 percent</b> of children residing in extremely poor households.</li> <li>• Translated into absolute numbers, this <b>equates to a staggering 52 million</b> Indian children living in poverty.</li> </ul>
<b>Age-Related Poverty Disparities</b>	<ul style="list-style-type: none"> <li>• <b>Among children, the 0-5 year age group</b> experiences the highest poverty rate, with 18.3 percent, equivalent to 99 million children, living in extreme poor conditions.</li> <li>• The assessment reveals that the average poverty gap for children under 18 at the <b>\$2.15 line is notably higher (5.1 percent)</b> than that of adults (1.9 percent), indicating greater severity of poverty among children.</li> </ul>
<b>Regional Hotspots of Child Poverty</b>	<ul style="list-style-type: none"> <li>• Child poverty is concentrated in sub-Saharan Africa and South Asia, with these regions accounting for a <b>substantial 90 percent of the world's extremely poor children.</b></li> <li>• Sub-Saharan Africa boasts the highest child poverty rate globally at 40 percent, while <b>South Asia follows closely at 9.7 percent.</b></li> </ul>
<b>Impact of the Pandemic</b>	<ul style="list-style-type: none"> <li>• <b>Child poverty had been in decline globally, with 63.3 million</b> children escaping poverty between 2013 and 2019.</li> <li>• However, the COVID-19 pandemic disrupted this progress, with a</li> </ul>



	significant increase in child poverty in 2020. While reductions resumed in 2021, they did not match pre-pandemic rates.
<b>The Pervasive Impact of Child Poverty</b>	<ul style="list-style-type: none"> <li>• <b>Persistent child poverty</b> poses a formidable challenge to the global commitment to eliminate extreme poverty by 2030, as outlined in the Sustainable Development Goals (SDG).</li> <li>• <b>Leaders and organizations like UNICEF</b> and the World Bank stress the critical need for investments in education, nutrition, healthcare, social protection, safety, and security to lift children out of poverty and break the cycle.</li> </ul>

**To end extreme poverty and offset the pandemic backslide, UNICEF and the World Bank are calling on governments and partners to:**

- **Ensure a continued focus on children living in extreme poverty** in lower middle- and low-income countries and fragile contexts.
- **Prioritize agendas** aimed at tackling child poverty, including expanding social protection coverage for children to reach those living in extremely poor households.
- **Design public policy portfolios to reach large households**, and those with young children and in rural areas. Investing in early childhood has proven one of the most effective ways to break intergenerational persistence of poverty, bringing positive returns to individuals, families and societies.
- **Increase access to universal child benefits** as a proven effective measure in reducing child poverty.
- **Design inclusive social protection programmes**, taking into account disability and gender-specific needs.

**6.4 STATE OF WORKING INDIA REPORT**

**Context**

- Recently, Azim Premji University's Centre for Sustainable Employment has released the Report titled- "State of Working India 2023" highlighting the State of Indian workforce.

**Key highlights of the Report**

- **Even as the overall unemployment rate reduced to 6.6 per cent in 2021-22 from 8.7 per cent in 2017-18, over 42 per cent of India's graduates** under 25 were unemployed in 2021-22, revealed the "State of Working India 2023".
- **With regards to women's participation in the workforce**, the report stated that after the corona virus pandemic, 60 per cent of women were self-employed as compared to 50 per cent before the pandemic.
- **While this indicates an increase in women's workforce participation**, it was accompanied by a decline in self-employment earnings, which in 2022 were only 85 per cent of what they were in the first quarter of 2019 reflecting the impact of distress induced by the pandemic.
- **Also, there has been an upward trend in intergenerational mobility**, but the trend has been weaker for workers belonging to Scheduled Castes and Scheduled Tribes categories as compared to workers belonging to general castes.
- **For unemployment based on education and age groups**, the report stated that 42.3 per cent of graduates under 25 are unemployed whereas the figure stands at 21.4 per cent for those who have completed higher secondary education in the same age group.
- Notably, with lower educational qualifications, the rate of unemployment also decreased.

**According to the Periodic Labour Force Survey 2021-22, the unemployment rate in India stood at 4.1 per cent for that period. The State of Working India report used various data sources like surveys conducted by the National Statistical Office including Employment-Unemployment Surveys and Periodic Labour Force Surveys along with the India Working Survey, which is a collaborative project between researchers at Azim Premji University, IIM Bangalore, and University of Western Australia.**

### Challenges in the labour market and employment landscape

- **Unemployment:** High levels of unemployment, particularly among educated youth, are a pressing issue. Despite having the necessary qualifications, many young people struggle to find suitable employment opportunities.
- **Gender Disparities:** Gender-based disparities in the workforce persist. Women often face barriers to employment, including societal norms that limit their participation in certain industries or roles.
- Additionally, concerns about safety in the workplace and during commutes can discourage women from seeking employment opportunities.
- **Caste-based Inequalities:** The report highlights disparities in employment opportunities based on caste, indicating the presence of caste-based inequalities. In many cases, lower-caste individuals may face discrimination and limited access to quality education and job opportunities.
  - Inclusive policies are needed to address these disparities and promote social equity.
- **Informal Employment:** A significant portion of the workforce is engaged in informal employment, characterized by a lack of job security, social benefits, and legal protections. This informal sector workforce is vulnerable to economic shocks and often faces exploitation.
  - Transitioning informal workers to formal employment arrangements is a complex challenge that requires comprehensive labour reforms.
- **Agricultural Transition:** The shift away from agriculture to other sectors raises concerns about the absorption of agricultural labour.
  - As mechanization and modernization occur in agriculture, many rural workers may need to find alternative sources of livelihood.



## 6.5 FINDINGS OF THE PARLIAMENT PANEL ON THE NEP, 2020

### Context

- The Parliament Standing Committee on Education tabled a report during the special session of Parliament on the **“Implementation of the National Education Policy (NEP), 2020 in Higher Education.”**

### Details

- The report looked at the salient features of the NEP’s implementation in the higher education sector and the progress made so far.
- The panel met representatives of various State governments, Union Ministries, higher education institutions and other stakeholders to prepare the report.
- The report noted that of the 1,043 universities functioning in the country, 70% are under the State Act and that 94% of students are in State or private institutions with just 6% of students in Central higher educational institutions, stressing the importance of States in providing higher education.

### Key highlights of the report

- **Rigid Separation of Disciplines:** The report expressed concerns about the inflexible separation of academic disciplines within higher education. It highlighted the need for more interdisciplinary approaches to foster innovation and creativity.
- **Limited Access in Disadvantaged Areas:** Limited access to higher education in socio-economically disadvantaged areas was identified as a significant challenge. The report emphasized the importance of addressing this issue to reduce educational disparities.
- **Language of Instruction:** The report noted the deficiency of higher education institutions teaching in local languages. This linguistic barrier could hinder inclusivity and accessibility for students from diverse linguistic backgrounds.
- **Faculty Shortage:** Concerns were raised regarding the shortage of faculty members in higher education. This shortage could impact the quality of education and hinder research endeavours.
- **Institutional Autonomy:** The report emphasized the need for greater institutional autonomy. It highlighted the importance of universities and colleges having the independence to make decisions to promote academic excellence.
- **Emphasis on Research:** The panel stressed the necessity to enhance the focus on research within higher education institutions. This emphasis on research can contribute to innovation and intellectual growth.
- **Regulatory System:** The existing regulatory framework was criticized as ineffective. The report suggested reforms to ensure efficient governance and quality assurance in higher education.

**Committee made several recommendations, including**

<b>Enrollment Targets for SEDGs</b>	<ul style="list-style-type: none"> <li>• Clear targets for increasing the Gross Enrolment Ratio (GER) of SEDGs in higher education institutions were proposed. This initiative aimed to enhance their representation and ensure equal access to higher education.</li> </ul>
<b>Gender Balance</b>	<ul style="list-style-type: none"> <li>• To promote gender equity and inclusivity, the report suggested measures to enhance gender balance in admissions to higher education institutions. This promotes equal educational opportunities for all genders.</li> </ul>
<b>Financial Assistance and Scholarships</b>	<ul style="list-style-type: none"> <li>• The committee recommended providing more financial assistance and scholarships to SEDGs, both in public and private Higher Education Institutions (HEIs). This was seen as a crucial step to alleviate financial barriers that hinder access to education.</li> </ul>
<b>Inclusive Admission Processes and Curriculum</b>	<ul style="list-style-type: none"> <li>• To accommodate the diverse backgrounds and abilities of students, the report emphasized the need to make admission processes and curriculum more inclusive. This ensures that education caters to the individual needs of all learners.</li> </ul>

**6.6 SHORT ARTICLES**

**Malviya Mission**

Context

- The Government launched the Malaviya Mission - Teachers Training Programme.

Details

- **Organisation:** It has been organised by the **University Grants Commission**, in association with the Ministry of Education.
- **Aim:** The Malaviya Mission - Teacher Training Programme aims to provide **tailored training programmes for teachers**.
- **Mandate:** This programme will work for the **capacity building of faculty members in higher educational institutions**.

- **Vision:** To build competencies in the faculty for better teaching, learning and research by exposing them to Indian values, updating knowledge and skills, and aligning with the needs of society and National Education Policy (NEP) 2020.

- **Objectives**

The salient objectives of the scheme as per alignment with NEP are:

- To impart pedagogy-related training and improve faculty members' and practical skills.
- To ensure holistic development of the teachers and learners with the inculcation of ethics and human values as enshrined in Indian culture.
- To develop multidisciplinary and critical thinking ability.
- To familiarize the faculty with the Indian Knowledge Systems.
- To build respect for the eco-balance and biodiversity existing in nature.
- To undertake quality research in line with the local, national, and global needs.
- To make it known that higher education is for social upliftment and inclusiveness.
- To develop the know-how to prepare transformative pedagogy with ICT intervention.
- To build life skills and global citizenship values.
- To ensure the role of faculty as active participants in institution building.
- **Trivia:** The existing Human Resource Development Centres (HRDCs) are to be renamed as Madan Mohan Malaviya Teachers' Training Centre.
- **Significance:** The programme will ensure continuous professional development and help in building capacities of 15 lakh teachers of HEIs through 111 Malaviya Mission centres across India in a time-bound manner. Capacity building under the Malaviya Mission will be mapped to the credit framework to ensure career progression pathways for educators.



## 6.7 1 MAINS & 5 MCQs

**Q1. Discuss the ecological factors contributing to malnutrition in India and elaborate on the government's efforts and direct interventions to address malnutrition. (250 Words)**

### Introduction

- Malnutrition is a critical issue in India, affecting a significant portion of the population. It is a multifaceted problem influenced by various ecological factors. The government has implemented several interventions to combat malnutrition and improve the nutritional status of the population. This essay will discuss the ecological factors contributing to malnutrition, outline government efforts and direct interventions, and emphasize the importance of addressing this pressing issue.

### Body

#### Ecological Factors Contributing to Malnutrition in India:

- **Poverty:** Poverty is a primary driver of malnutrition. Insufficient financial resources often lead to the inability to afford an adequate quantity and quality of food, resulting in undernutrition.
- **Feeding Habits:** Lack of awareness regarding the nutritional value of foods, cultural beliefs, and inappropriate feeding practices contribute to malnutrition within families, particularly among children.
- **Infections:** Diseases such as malaria, measles, and diarrhea can worsen malnutrition by increasing nutrient requirements during illness and reducing food intake due to decreased appetite.
- **Socio-cultural Factors:** Inequitable food distribution within households, larger family sizes, inadequate housing, sanitation, and

suboptimal maternal and child care further exacerbate malnutrition in India.

#### **Government Efforts and Direct Interventions:**

- **Public Distribution System (PDS):** The government has established the PDS to provide subsidized food grains to economically disadvantaged households, aiming to improve access to essential food items.
- **Mid-Day Meal Scheme:** In an effort to combat child malnutrition and increase school attendance, the government provides free mid-day meals to students in government and government-aided schools.
- **POSHAN Abhiyaan:** Launched to address malnutrition comprehensively, POSHAN Abhiyaan focuses on providing supplementary nutrition, promoting breastfeeding, and improving healthcare for women and children.
- **Nutrition Education:** Government initiatives include educating the public about the nutritional value of common foods, promoting breastfeeding, and dispelling harmful dietary myths and superstitions.
- **Healthcare Services:** Improved healthcare systems are essential for preventing malnutrition. Services such as immunization, oral rehydration therapy, deworming, and timely treatment of common illnesses play a vital role.

- **Nutrition Supplementation:** Special programs target vulnerable groups, such as pregnant women, infants, and school-going children, by providing additional calories, proteins, and essential micronutrients.

#### **Significance of Nutrition Counselling**

- The case study of Bemetara in Chhattisgarh demonstrates the importance of nutrition counselling as an effective strategy to combat malnutrition. The "Potth Laika Abhiyaan" nutrition counselling program, supported by UNICEF, has shown significant success in educating parents about balanced diets, handwashing, and healthy lifestyle practices. Through regular monitoring and evaluation, this program has brought a substantial number of children out of malnutrition within a short timeframe.

#### **Conclusion**

- Malnutrition in India is a complex issue influenced by various ecological factors. The government has implemented several interventions to address this problem. However, it is essential to continue these efforts, ensure uniform implementation across states, and prioritize the well-being of India's vulnerable populations to bridge the malnutrition gap and improve the overall health of the nation.

.....

**Q2. Which of the following statements is true regarding the Malaviya Mission - Teacher Training Programme?**

1. The programme aims to provide tailored training programs for students.
2. It is organized by the Ministry of Human Resource Development.
3. The existing Human Resource Development Centres (HRDCs) will be renamed as Madan Mohan Malaviya Teachers' Training Centre.

**Options:**

- A) Statement 1 is true.
- B) Statement 2 is true.
- C) Statement 3 is true.
- D) None of the statements are true.

**Q3. What is the key highlight of the "State of Working India 2023" report released by Azim Premji University's Centre for Sustainable Employment?**

- A) The overall unemployment rate increased in 2021-22.
- B) Women's self-employment earnings increased significantly after the pandemic.
- C) Over 42% of India's graduates under 25 were unemployed in 2021-22.
- D) Intergenerational mobility trends were stronger for workers belonging to Scheduled Castes and Scheduled Tribes.



**Q4. In the Parliament Standing Committee's report on the "Implementation of the National Education Policy (NEP), 2020 in Higher Education," how many of the following statements regarding key highlights and recommendations are correct?**

1. The report advocated for rigid separation of academic disciplines within higher education to maintain academic integrity.
2. Limited access to higher education in socio-economically disadvantaged areas was identified as a minor concern.
3. The report recommended a decreased focus on research within higher education institutions.

**Options:**

- A) Only 1
- B) Only 2
- C) All three
- D) None

**Q5. Which of the following statements about government measures to address gender-based**

**issues and promote women's well-being in India are correct?**

1. The Criminal Law (Amendment) Act, 2013, strengthened provisions related to crimes against women in the Indian Penal Code.
  2. The Pradhan Mantri Matru Vandana Yojana (PMMVY) provides cash incentives to women for their first live birth.
  3. The Rashtriya Madhyamik Shiksha Abhiyan focuses on improving access to quality education for girls.
- A) Only Statement 1 is correct.
  - B) Statements 1 and 2 are correct.
  - C) Statements 1 and 3 are correct.
  - D) All three statements are correct.

**Q6. Which discipline is NOT covered by the Shanti Swarup Bhatnagar Prize?**

- A) Mathematics
- B) Environmental Science
- C) Economics
- D) Chemistry

ANSWERS: 2) c, 3) c, 4) a, 5) d, 6) c

# 7. SCIENCE & TECHNOLOGY AND HEALTH

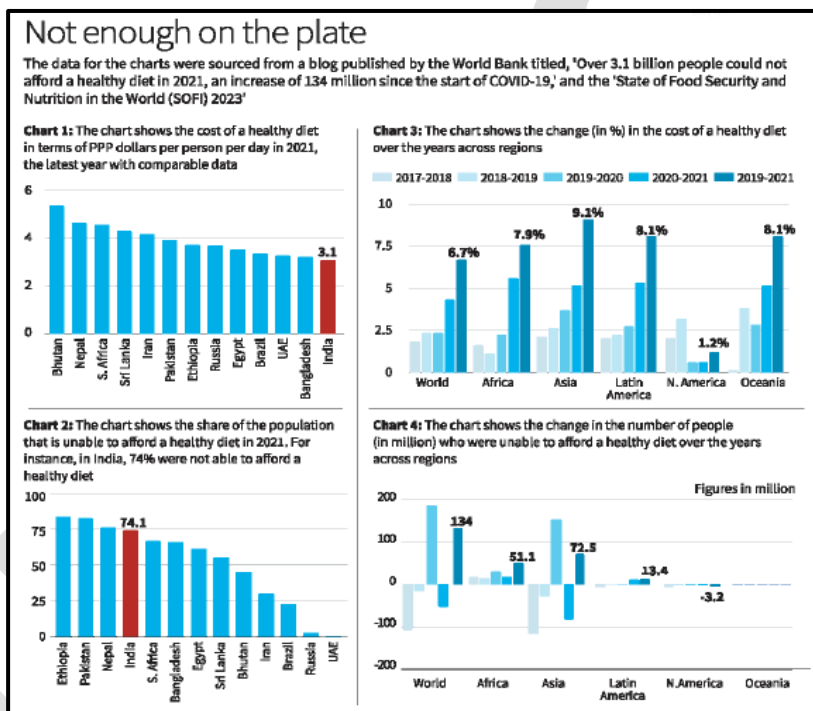
## 7.1 STATE OF FOOD SECURITY AND NUTRITION IN THE WORLD (SOFI) 2023

### Context

- The report by the United Nations Food and Agriculture Organization (FAO), has shed light on a concerning issue in India.

### Details

- The report shows that while the **cost of a healthy diet has increased in recent years in India**, it is still the lowest among the BRICS nations (including the newly added six countries) and India's neighbours.
- However, the share of people who are able to afford such a healthy diet is still low: **India features at the bottom of that list since income levels are stagnant or going down.**
- SOFI is published by the Food and Agriculture Organization and jointly produced with fellow United Nations agencies.**



### Key highlights of the report

#### Global Hunger:

- While global hunger numbers have stalled between 2021 and 2022, there are many places in the world facing deepening food crises. Over 122 million more people are facing hunger in the world since 2019 due to the pandemic and repeated weather shocks and conflicts, including the war in Ukraine.

#### Nutritional Access:

- Approximately 2.4 billion individuals, largely women and residents of rural areas, did not have consistent access to nutritious, safe, and sufficient food in 2022.

#### Child Malnutrition:

- Child malnutrition is still alarmingly high. In 2021, 22.3% (148.1 million) children were stunted, 6.8% (45 million) were wasted, and 5.6% (37 million) were overweight.

#### Urbanization's Impact on Diet:

- As urbanization accelerates, there is a noticeable increase in the consumption of processed and convenience foods, leading to a spike in overweight and obesity rates across urban, peri-urban, and rural areas.

#### Rural Dependence on Global Markets:

- Previously self-sustaining rural regions, especially in Africa and Asia, are now found to be increasingly dependent on national and global food markets.

#### Future Outlook:

- By 2050, it's projected that 70% of the global population will reside in cities. This significant demographic shift necessitates a reorientation of food systems to cater to these new urban populations and eradicate hunger, food insecurity, and malnutrition.

### Findings of the report for India

<b>Health diet</b>	<ul style="list-style-type: none"> <li>India has the lowest cost of a healthy diet among BRICS nations and neighbouring countries. However, a significant portion of the population can't afford it due to stagnant or decreasing incomes.</li> <li>For instance, meal costs in Mumbai increased by 65% in five years, while salaries/wages only grew by 28%-37%.</li> </ul>
<b>Healthy diet in terms of Purchasing Power Parity (PPP)</b>	<ul style="list-style-type: none"> <li>In India, a healthy diet costs 3.066 PPP dollars per person per day, the lowest among the countries considered.</li> <li>PPP stands for 'Purchasing Power Parity'. In simple terms, 1 PPP dollar in the United States should buy the same amount of goods and services as 1 PPP dollar in, say, India or Brazil.</li> </ul>
<b>Share of the population that is unable to afford a healthy diet in 2021</b>	<ul style="list-style-type: none"> <li>In India, 74% were not able to afford a healthy diet, the fourth highest share among the nations considered.</li> </ul>
<b>Change in the cost of a healthy diet over the years across regions</b>	<ul style="list-style-type: none"> <li>Between 2019 (before the COVID-19 pandemic) and 2021, the expense of maintaining a healthy diet increased by almost 9% in Asia – the highest across regions.</li> </ul>

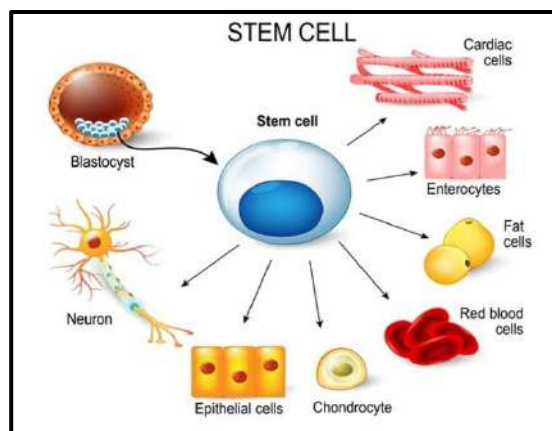
## 7.2 STEM CELL THERAPY

### Context

- The Delhi High Court Thursday (August 31) permitted two children with autism spectrum disorder (ASD) to undergo stem cell therapy for treatment of their condition.

### Details

- The order came in a petition moved by family members of the two children, challenging a December 6, 2022 recommendation of the **Ethics and Medical Registration Board (EMRB)** of the **National Medical Commission (NMC)** against the use of stem cell treatment for ASD.
- "No fruitful purpose will be served by stopping the treatment which is going on at present and therefore, the petitioners are permitted to continue the treatment," a division bench of Chief Justice Satish Chandra Sharma and Justice Sanjeev Narula ruled.
- After the **EMRB recommendation**, which said that "the use, promotion and advertisement of stem cell treatment shall amount to professional misconduct", the children's doctors stopped the stem cell treatment, prompting the parents to approach the court.



### About Stem Cells:

- Stem cells are cells from which all other cells, with their respective specialised functions, are generated. The human body, under certain conditions, "divides" stem cells to either create new stem cells or cells with specific functions, such as blood cells, brain cells, bone cells, muscle cells, etc.

**Two main categories of stem cells:**

- **Pluripotent stem cells:** cells with the ability to differentiate into all of the cells of the adult body.
  - Pluripotent stem cells are naturally found only in embryos.
  - However, in 2006, researchers identified conditions that would allow some mature human adult cells to be reprogrammed into an embryonic stem cell-like state. Those reprogrammed stem cells are called induced pluripotent stem cells.
- **Adult stem cells:** These are tissue or organ-specific and regenerate to form cells only of that particular organ.

**How are stem cells used in medicine?**

- The regenerative properties of stem cells make them extremely valuable in medicine. This is why stem cell treatments are also termed regenerative medicine.
- Hematopoietic stem cell transplantation is being used to treat people with conditions such as leukemia and lymphoma.
- After chemotherapy or radiation therapy wrecks the patient’s healthy cells (along with the cancerous ones), a donor’s healthy bone marrow reintroduces functional stem cells to replicate inside of a patient and to produce additional normal blood cells.

**Limitation of stem cells:**

- There are a very small number of adult stem cells in each tissue, and once removed from the body, their capacity to divide is limited.
- That is why, scientists have been focused on manipulating adult stem cells to exhibit characteristics of pluripotent stem cells.

**Autism spectrum disorder and treatments:**

- Autism spectrum disorder is a neurological and developmental disorder that affects how people interact with others, communicate, learn, and behave.

<b>Symptoms</b>	<ul style="list-style-type: none"> <li>• According to the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (DSM-5), people with ASD often have:                             <ul style="list-style-type: none"> <li>○ Difficulty with communication and interaction with other people,</li> <li>○ Restricted interests’ repetitive behaviors, and Symptoms that affect their ability to function in school, work, and other areas of life.</li> </ul> </li> </ul>
<b>Treatment</b>	<ul style="list-style-type: none"> <li>• Currently, there is no cure for ASD – treatments and therapies are geared towards managing symptoms and helping someone with ASD lead a happy and functional life.</li> <li>• Conventional therapies include social skills training, early intensive behavioral therapy, applied behaviour analysis, speech therapy, and occupational therapy. Psychotropic drugs and transcranial magnetic stimulation are also commonly used.</li> </ul>

**Closing remarks**

- The High Court does not opine on the general validity of using stem cell therapies for ASD, but in these two cases, allows ongoing treatment to continue. The HC bench permitted the NMC to take a final view on the recommendation as per provisions of the NMC Act.



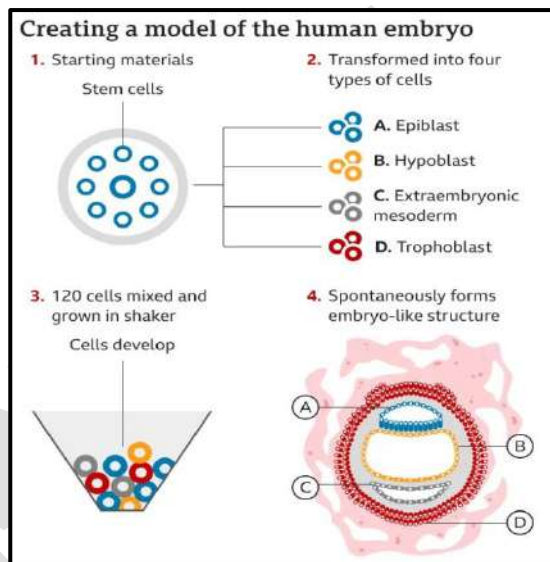
## 7.3 LAB GROWN HUMAN EMBRYO

### Context

- Scientists have developed human embryo-like structures **without using sperm, an egg or fertilisation**, offering **hope for research on miscarriage and birth defects** but also raising fresh ethical concerns.

### Details

- Earlier this year, several labs around the world released **pre-print studies that had not been peer-reviewed**, describing their development of early human embryo-like structures.
- But now one group's **research has been published in the peer-reviewed journal Nature**, describing how they coaxed human embryonic stem cells to self-organise into a model resembling an early embryo.
- British law prohibits the culturing of human embryos** in labs beyond the 14-day mark, but because the structures derived from stem cells are formed artificially, they are not explicitly covered by existing regulations.



### How was the embryo model created?

- The scientists have called it **one of the most complete models of a 14-day-old human embryo**. Several teams have been working on developing these human embryo-like models – around six such models have been published this year itself.
- None of them fully replicate the processes** that happen during the early stages of embryo development, but all of them add to their understanding.
- The researchers from Israel used a **mix of stem cells and chemicals**, a small portion of which was able to spontaneously assemble to form different types of cells that form the foetus, those that provide nutrients to the foetus, cells that lay out the plan for development of the body, and cells that create structures like placenta and umbilical cord to support the foetus.

### Issue faced:

- One of the problems that the team faced, however, was that only 1% of this mixture actually assembled spontaneously, making the process not very efficient.

### Why are embryo models and research important?

- There is no way for scientists to ethically research the early stages of development of an embryo, as it is difficult to study it after it implants in the uterus. **Scientists currently study these initial changes in various lab models or donated embryos.**
- This research is crucial because the initial days of embryo development is when the majority of miscarriages and birth defects occur. **Studying the initial stages, scientists say, may help understand genetic and inherited diseases better.**
- The understanding of why some embryos develop normally, retain the proper genetic code, and implant properly in the womb while others do not, **may also help in improving success rates of in vitro fertilisation.**



### Can lab-grown embryos be used to get pregnant?

- **No. These models are meant to just study** the early stages of development of a foetus.
- **It is generally accepted – and legally supported in most countries –** that these embryo models will be destroyed after studying the first 14 days. **Attempts to implant are not allowed.**
- Also, **creating a lab-based model that mimics the properties of early embryos** is still far from an actual embryo that can implant to the lining of the womb.

### Why is there a 14-day limit on embryo research?

- **The limit was first proposed by a committee in the UK in 1979** after the birth of the first test tube baby Louise Brown demonstrated that embryos could be kept alive in laboratories.
- The 14-day period is **equivalent to when embryos naturally finish implantation.** It is also when cells start becoming an “individual”, and breaking off into a twin is not possible.

### What have these models shown about the early stages of development?

- Models such as the one **developed by the team from Israel** have **helped scientists understand why sometimes errors arise when the DNA is duplicated**, why sometimes one of the daughter cells receives too many or too few chromosomes.
- **Researchers used to assume that the errors occurred** when the two daughter cells were separated, but one such model helped researchers understand that it happened much earlier in the process, when **DNA duplication is ongoing. When the duplication is not normal, the split is not normal.**
- These models allow scientists to see what **roles various genes play in the development of the foetus.**

### About Human Embryo

A human embryo is the earliest developmental stage of a human organism following fertilization (the union of a sperm cell and an egg cell). It represents the initial phase of human life.

<b>Critical Periods in Embryonic Development</b>	<ul style="list-style-type: none"> <li>• <b>Certain periods during embryonic development</b> are particularly critical for the proper formation of organs and body structures. These stages <b>are highly susceptible to genetic, environmental, or teratogenic</b> (causing birth defects) influences.</li> <li>• <b>The first trimester is the most critical period</b>, during which organogenesis occurs.</li> </ul>
<b>Importance of the Human Embryo</b>	<ul style="list-style-type: none"> <li>• The human embryo is of paramount importance in the context of human reproduction and development.</li> <li>• <b>It represents the beginning of an individual's life and has unique genetic characteristics</b> determined by the combination of genetic material from both parents.</li> <li>• Understanding embryonic development is crucial for addressing issues <b>related to fertility, birth defects, and genetic diseases.</b></li> </ul>
<b>Ethical and Legal Considerations</b>	<ul style="list-style-type: none"> <li>• Due to its significance, <b>research involving human embryos</b> is subject to stringent ethical and legal guidelines.</li> <li>• <b>Many countries have established limits on embryo research, including a 14-day rule</b>, beyond which embryos cannot be cultured in the laboratory.</li> </ul>
<b>Medical and Scientific Research</b>	<ul style="list-style-type: none"> <li>• The study of human embryos plays a vital role in advancing medical knowledge and treatments.</li> <li>• <b>It provides insights into early human development</b>, helping researchers</li> </ul>

understand genetic, epigenetic, and environmental factors that influence development.

## 7.4 LEGALIZING CANNABIS CULTIVATION

### Context

- The Himachal Pradesh government is exploring the possibility of Legalizing Cannabis (Hemp) cultivation, aligning with farmers' longstanding demands to lift the ban on cultivation.



### Details

- With the Himachal Pradesh government inching closer to legalise cannabis (hemp) cultivation in the State, growers are upbeat and optimistic about getting an economic boost, even as the concerns and its multiple effects on society cannot be ignored, **including allurements among adolescents and youth towards the use-abuse of cannabis**, the nexus between illegal producers and suppliers of cannabis getting stronger, the risk of pilferage, and the occurrence of amotivational syndrome.
- A committee comprising lawmakers that explored the possibility of legal cultivation of cannabis has recently recommended cultivation of **'non-narcotic use of cannabis for medicinal, industrial, and scientific use'**.

Hemp is a botanical class of *Cannabis sativa* cultivars grown specifically for industrial or medicinal use. It is produced in parts of Himachal Pradesh though it is illegal under the **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**.

### About Cannabis

- According to the WHO (World Health Organization), cannabis is a generic term used to denote the several psychoactive preparations of the plant *Cannabis sativa*.
- According to the WHO, cannabis is by far the most widely cultivated, trafficked and abused illicit drug in the world.

- Most species of cannabis are dioecious plants that can be **identified as either male or female**. The unpollinated female plants are called hashish.
- **The major psychoactive constituent** in cannabis is **Delta9 tetrahydrocannabinol (THC)**.

### Benefits of Cannabis Cultivation in Himachal Pradesh

- The cultivation of cannabis will be limited to only industrial, medicinal and scientific use.
- **The policy on hemp cultivation for medicinal, industrial, and scientific** would pave the way for utilising the medicinal properties of cannabis to treat patients, besides raising revenue for the State from the products made of hemp.
- Also, **allowing cannabis cultivation would reaffirm the government's commitment** to safeguarding the interests of the farmers, who have been long demanding to lift the ban on cultivation.
- **The NDPS Act of 1985, imposes a ban on extracting the resin and flowers from the plant**, but the law determines the method and extent of its cultivation for medicinal and scientific purposes.
  - **Section 10 (a) (iii) of the Act empowers the States to make rules regarding the cultivation of any cannabis plant**, production, possession, transport, consumption, use and purchase and sale, and consumption of cannabis (except charas).
- **States are empowered to permit, by general or special order**, the cultivation of hemp only for obtaining fiber or seeds or for horticultural purposes.

In 2017, Himachal Pradesh's neighbour Uttarakhand became the first State in the country to legalise cannabis cultivation. Besides, controlled cultivation is also being done in some districts of Gujarat, Madhya Pradesh and Uttar Pradesh.

### Concerns Related to Cannabis Cultivation in India

- **Approximately 95% of drug addicts in Himachal Pradesh use cannabis and its derivatives**. Critics argue that legalizing cultivation may entice youth towards cannabis use and potentially lead to lifelong addiction, undermining the socio-economic contributions of drug-addicted youth.
- **Cannabis use can have adverse health effects, including impaired cognitive function**, respiratory issues (when smoked), and an increased risk of mental health disorders, particularly in individuals with a genetic predisposition. **Concerns about the public health impact of widespread cannabis use are paramount**.
- **Cannabis use, especially in high quantities or over an extended period**, can lead to psychiatric issues, including anxiety, depression, and psychosis. Legalizing cultivation could exacerbate these problems if not coupled with adequate mental health support and education.
- **Legalization may not completely eliminate the illicit cannabis market**. There is a risk that the illegal production and distribution of cannabis will continue alongside legal cultivation, potentially leading to increased criminal activities and law enforcement challenges.

### Cannabis cultivation in India

- In 2017, Uttarakhand became the first state to legalise cannabis cultivation.
- **Controlled cultivation is permissible** in some districts of Gujarat, Madhya Pradesh and Uttar Pradesh.
- **The ministry of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy)** allows licensed practitioners as well as medical doctors to prescribe cannabis extract.
- However, **it must be administered in compounds including other elements**, as cannabis by itself is classified as a toxic, though medically important, substance.

### Closing remarks

- Regulation is not only beneficial for people who want to use cannabis safely; it also enhances security for all of society, as it helps undermine criminal markets. Due to the drug's illegality, cannabis sales currently line the pockets of various characters in a vast criminal underworld, some of whom may be committing far more nefarious crimes.



## 7.5 ANTIMICROBIAL USE IN ANIMALS

### Context

- The global usage of antimicrobials in animals has dropped by 13 per cent in three years from 2017 to 2019, the World Organisation for Animal Health (WOAH) said in its seventh report on antibiotic use released recently.

### Details

- The analysis is based on the data provided by the 80 countries that consistently updated on antimicrobial use in animals.
- However, the report also pointed out regional differences: While 49 countries from Asia, Far East, Oceania and Europe reported an overall reduction in antimicrobials used, the remaining 31 from African and American regions reported an overall increase.
- WOAH is one of the quadripartite members leading the global momentum of antimicrobial resistance (AMR) containment.**
- While 182 members and 11 non-members were invited to participate in this global analysis, 157 participants submitted their data to WOAH.**
- Among them, just 121 participants submitted quantitative data** for at least one year, with only 74 reporting specific amounts of antimicrobial products categorised by type of use and administration route.
- Among all WOAH regions, the number of participants reporting antimicrobial quantities has increased significantly in America and Africa.**
- This year, WOAH also introduced an interactive online platform called the **Global Database for ANimalanti Microbial USE (ANIMUSE)** to expedite data accessibility and contribute towards evidence-based decision-making.

ANIMUSE plays a key role in supporting members' actions to achieve this target, helping veterinary workforces to understand and monitor AMU in a harmonised and comparable way.

### Key facts of the analysis

- Global antimicrobial use in animals has declined by 13% in 3 years**, marking again a significant shift in the continuous efforts to preserve the efficacy of these critical medicines.
- Out of 80 countries, 49 in Asia, Far East, Oceania, and Europe** reported an overall reduction in antimicrobial use.
- Conversely, 31 countries in African and American regions** reported an overall increase in antimicrobial usage during the same period.
- 68% of the participants** have discontinued using antimicrobials as growth promoters.
- 26% of participants** continue to use growth promoters, often due to a lack of proper legislation or regulations.
- Common antimicrobial growth promoters included **flavomycin, bacitracin, avilamycin, and tylosin.**

- While **flavomycin** and **avilamycin** are currently excluded from human use, **bacitracin** is not classified among WHO's critically important antimicrobials (CIAs).
- Some of these are classified as **CIAs** or **highest priority CIAs (HP-CIAs)**.

### About Antimicrobial drugs

- Antimicrobial drugs, such as antibiotics, paved the way for better living conditions for humans and animals. Prior to the discovery of penicillin by Alexander Fleming in 1928, infections due to minor cuts could lead to bloodstream infections or death.
- These life-saving drugs are losing their efficacy due to their misuse and overuse in different sectors. The phenomenon is known as 'antimicrobial resistance'. It can originate in animal, human or plant populations, and then pose a threat to all the other species.

### Initiatives to Tackle Antimicrobial Resistance

#### National Action Plan

- In 2017, India developed a National Action Plan on Antimicrobial Resistance. **This plan serves as a roadmap for addressing AMR** comprehensively and outlines strategies and actions to combat the issue.
- **The plan emphasizes the One Health approach** by involving multiple sectors, including human health, animal health, and environmental health.

#### Delhi Declaration on Antimicrobial Resistance

- Delhi Declaration on Antimicrobial Resistance, was endorsed at the **Inter-Ministerial Consultation on Antimicrobial Resistance in 2017**.

#### AMR Surveillance Network

- ICMR has established AMR surveillance and research network (AMRSN) in 2013, to **generate evidence and capture trends** and patterns of drug resistant infections in the country.
- This network comprises of **30 tertiary care hospitals, both private and government**.

#### AMR Research & International Collaboration

- **ICMR has taken initiatives to develop new drugs /medicines** through international collaborations in order to strengthen medical research in AMR:
- **ICMR along with Research Council of Norway (RCN)** initiated a joint call for research in antimicrobial resistance in 2017.
- **ICMR along with Federal Ministry of Education and Research (BMBF), Germany** has a joint Indo-German collaboration for research on AMR.

## 7.6 THE DRAFT PATENTS (AMENDMENT) RULES, 2023

### Context

- Recently, the government has released Draft Patents (Amendment) Rules, 2023 rule, under the Patents Act of 1970.

### About The Patents Act, 1970

- It was established in 1972, and replaced the Indian Patents and Designs Act, 1911.
- In 2005, the Patents (Amendment) Act expanded product patenting to all technology fields, including food, drugs, chemicals, and microorganisms.
- It repealed Exclusive Marketing Rights (EMRs) provisions, introduced compulsory licensing, and included pre-grant and post-grant opposition provisions.



## Key concerns raised by these advocacy groups

### Dynamic and Exorbitant Fees for Pre-Grant Opposition

- The proposed amendments introduce fees for filing pre-grant oppositions, which is a departure from the current practice of not charging any fees for such filings.
- Advocacy groups argue that this could deter patient groups and other stakeholders from providing critical information to the patent office, potentially limiting the examination of patent applications.

### Loss of Access to Peer Reviews

- Pre-grant opposition is equated to "peer reviews" in scientific circles, allowing stakeholders to review patent applications and oppose frivolous ones. Introducing fees for this process could make it inaccessible to patient groups and other organizations, limiting their ability to participate in the examination of patents.

### Delaying the Patent Process

- Advocacy groups counter the argument that pre-grant oppositions cause delays by pointing out that a very small percentage of patent applications have faced opposition since the relevant Act was amended in 2005. They argue that these oppositions play a crucial role in ensuring the quality and validity of patents.

### Significant Challenge to the Indian Patent System

- The proposed amendments are seen as the most significant challenge to the Indian Patent System since 2005. Advocacy groups believe that these changes could have a disastrous impact on access to medicines and are concerned that they are being introduced through less conspicuous means, such as rule changes.

Patents are government-issued exclusive rights that grant inventors or assignees the sole authority to utilize, make, sell, or license their invention for a limited period, generally 20 years.

## Key provisions of Draft Amendment Rules

<b>Pre-Grant Opposition (PGO) filing</b>	<ul style="list-style-type: none"> <li>• PGO is a pre-grant opposition filed after patent publication but before its grant.</li> <li>• There will be a variable fee for Pre-Grant Opposition (PGO) filing. Previously it was free.</li> <li>• PGO filing, previously open to anyone, will now be determined by CGPDTM.</li> </ul>
<b>Notice Time Period</b>	<ul style="list-style-type: none"> <li>• The time period for applicants to reply to notice on PGO has been reduced to 2 months.</li> </ul>
<b>Working Statements</b>	<ul style="list-style-type: none"> <li>• Working statements are to be submitted once every 3 years by patent holder.</li> </ul>
<b>Timeline for Filing Requests for Examination</b>	<ul style="list-style-type: none"> <li>• The timeline for filing Requests for Examination is reduced from 48 to 31 month.</li> </ul>
<b>Disclosure of Manufacturing Location and Price</b>	<ul style="list-style-type: none"> <li>• Disclosure of the patented product's manufacturing location and price is no longer required.</li> </ul>

## What are the criteria for issuing patents in India?

### Novelty or Newness:

- The invention should be new, meaning it has not been published earlier and there is no prior public knowledge or use of it in India.

### Non-Obviousness or Inventive Step:

- The invention must involve an inventive step, which means it is technically advanced in comparison to existing knowledge and non-obvious to a person skilled in the relevant field of technology.

**Usefulness or Utility:**

- The invention should be capable of industrial application.

It's important to note that certain inventions are not patentable, such as frivolous inventions, methods of agriculture or horticulture, traditional knowledge, computer programs, inventions related to atomic energy, plants & animals, and mere discovery of scientific principle.

**7.7 GLOBAL REPORT ON HYPERTENSION**

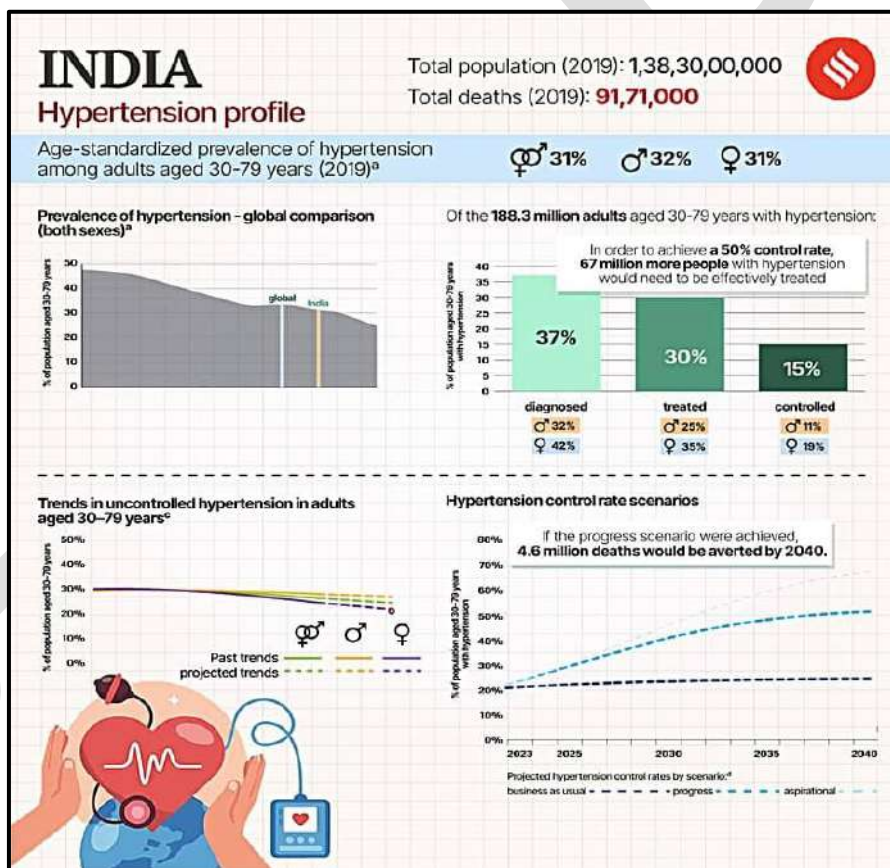
**Context**

- Recently, during the United Nations General Assembly's (UNGA) 78th session, the World Health Organization (WHO) released a report titled **"Global report on hypertension: The race against a silent killer."**

**Details**

- At least 4.6 million deaths in India can be averted by 2040 if half of the people with hypertension manage to keep their blood pressure under control, said the first-ever report by the World Health Organisation on the global impact of the condition.
- The report said 188.3 million people in the country were living with the condition, but only 37% of these were aware of their status. An estimated 33% of the global population lives with the condition, with just over half receiving a diagnosis as per the report.
- **"High blood pressure kills.** In fact, cardiovascular diseases are the world's leading cause of death.
- **Experts say that there are challenges at every level** when it comes to hypertension – from getting a diagnosis to initiating treatment and controlling it successfully.

It is the first-ever report by the WHO on the worldwide implications of hypertension, commonly referred to as high blood pressure.



### Key Highlights of the Report

- The report says that of the 188.3 million estimated to have the condition in India, only 37% get diagnosed. And many do not start their treatment even after diagnosis.
- Only 30% of the estimated people living with hypertension start treatment, while only 15% manage to keep their blood pressure under control.
- While the number of adults living with uncontrolled hypertension is on the decline, the report shows that it's not fast enough.
- The report says that by treating half the people with hypertension – which has been termed as the “progressive scenario” – the country can prevent 4.6 million deaths due to heart attacks and strokes.
- In fact, uncontrolled hypertension is the reason for 52% of the deaths from cardiovascular diseases like heart attacks and strokes in India, the report found.
- More lives can be saved if the “aspirational scenario” of 75% control can be achieved.
- There is actually a rule of halves when it comes to hypertension. In any population, only half the people with hypertension get diagnosed.
- Of the people who do get diagnosed, half end up taking the treatment. And of the people who receive treatment, only half manage to control their blood pressure. In some of the developed countries, where the whole population is screened and treatment is free, the proportion might be better than half.
- And, in some lower middle income countries – and, as this report shows, even India – the outcome is worse than the rule of half.

### About Hypertension

Hypertension, commonly known as high blood pressure, is a medical condition characterized by elevated blood pressure in the arteries. Blood pressure is the force of blood against the walls of arteries as the heart pumps it around the body. Hypertension is a significant risk factor for various cardiovascular diseases and other health complications.

### How has the India Hypertension Control Initiative helped?

- India Hypertension Control Initiative (IHCI) focuses on controlling hypertension by screening people, ensuring protocol-based treatment, and providing medicines.
- Through programme such as IHCI and the government’s push towards non-communicable disease screening and treatment at the primary healthcare level, India aims to put 75 million patients with hypertension or diabetes on standard care by 2025.
- The IHCI has already managed to enrol 5.8 million people with hypertension from 27 states.
- The report flagged issues with procuring the blood pressure medicine that the programme initially faced. This led to people not returning to the centres for treatment.



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## 7.8 SHORT ARTICLES

### Liquid Apogee Motor (LAM)

#### Context

- A small but powerful engine going by the acronym 'LAM' will have a critical role to play in the Indian Space Research Organisation's (ISRO) upcoming Aditya-L1 mission meant to study the sun.



#### Details:

- The successful operation of LAM, short for Liquid Apogee Motor, is vital to ISRO's plans to place the Aditya spacecraft in a halo orbit at Lagrangian point L1.

#### About LAM:

- Aim:** It is a small but powerful engine going by the acronym 'LAM' that will have a critical role to play in the Indian Space Research Organisation's (ISRO) upcoming Aditya-L1 mission meant to study the sun.
- Usage:** LAM engines are used for orbital adjustment maneuvers of satellites/spacecraft in orbit.
- Developed by:** The **Liquid Propulsion Systems Centre (LPSC)**, the ISRO Centre for liquid and cryogenic propulsion in Thiruvananthapuram.
- Historical significance:** LAM has played an important role in missions, including the 2014 Mars Orbiter Mission (MOM) Mangalyaan and the more recent Chandrayaan-3.

#### About Aditya L1 Mission:

<b>About</b>	<ul style="list-style-type: none"> <li>The Aditya-L1 mission, developed by the Indian Space Research Organisation (ISRO), represents <b>India's first space-based observatory dedicated to studying the Sun.</b></li> </ul>
<b>Positioned at</b>	<ul style="list-style-type: none"> <li>The Lagrange point 1 (L1), located about 1.5 million km from Earth, this pioneering mission aims to unravel the mysteries of the Sun's behavior, magnetic fields, and space weather impacts.</li> </ul>
<b>Objective</b>	<ul style="list-style-type: none"> <li>To study the <b>dynamic behavior of the Sun's upper atmosphere</b>, including the chromosphere and corona.</li> <li>The mission seeks to <b>understand processes like chromospheric and coronal heating</b>, and the initiation of solar eruptive events.</li> </ul>
<b>Significance</b>	<ul style="list-style-type: none"> <li>Observations and data will <b>contribute to advancements in solar physics</b>, plasma dynamics, and magnetism, enriching our understanding of stellar astrophysics.</li> </ul>

### India's First AI School

#### Context

- India has got its first ever AI school in Kerala. This pioneering development was launched by Santhigiri Vidhyabhavan in Kerala's capital city, Thiruvananthapuram.

#### About the AI school

- Approach:** The school **predominantly teaches its students deeply about Artificial Intelligence** and other advanced technologies to boost the learning experiences of students.
- It includes the integration of AI technologies** like machine learning, natural language processing and data analysis, into several aspects of education such as the school

curriculum design, personalised assessment, learning and student support.

- Collaboration:** Powered by a collaboration between **iLearning Engines (ILE) USA and VedhikeSchool**, the AI school taps into the expertise of key stakeholders, including Chief Secretaries, DGPs, and Vice-Chancellors.
- This partnership aims to foster a new educational paradigm**, aligned with global standards and the National School Accreditation Standards under the **New National Education Policy (NEP 2020)**.

#### Features of the AI schools:

- The AI school's approach emphasizes **personalized support services**, catering to students from grades 8 to 12.



- **These services encompass diverse benefits**, including access to multiple teachers, varying test levels, aptitude assessments, career planning, memory techniques, and counseling.
- The institution also **nurtures holistic skill development, encompassing areas** such as interview techniques, group discussions, writing finesse, English proficiency, and emotional well-being.
- AI-powered system **equips students for competitive exams** like JEE, NEET, and international tests, opening doors to higher education opportunities.
- The school also **offers guidance on scholarships and foreign universities**, enhancing students' prospects for global education.

## Global Fund secures deal to slash HIV Treatment price

### Context

- The Global Fund is a partnership set up in 2002 to battle AIDS, tuberculosis and malaria.

### Details

- The Global Fund's recent deal to reduce the price of the HIV treatment drug TLD (tenofovir disoproxil fumarate, lamivudine, and dolutegravir) is a significant development in the global effort to combat HIV/AIDS.
- The Global Fund deals with generic pharmaceutical manufacturers to significantly slash the price of a cutting-edge HIV drug, in a move it said would save lives.
- The Global Fund, a partnership set up in 2002 to battle AIDS, tuberculosis and malaria, said the agreement would make it possible to provide the advanced pill known as TLD for under \$45 per person per year.
- In 2017, licensing agreements were secured to make TLD available in low and middle-income countries for up to \$75 per person per year, which significantly increased access to the treatment.

### Key highlights

- **TLD is a three-in-one pill that combines the drugs tenofovir disoproxil fumarate, lamivudine, and dolutegravir.** It is recognized

by the World Health Organization (WHO) as the preferred first-line HIV treatment for adults and adolescents.

- The Global Fund's Chief emphasized that the reduced pricing for TLD will enable governments and other organizations implementing Global Fund grants to expand their HIV treatment programs and invest more in prevention efforts.

### About Global Fund:

#### About

- The Global Fund to Fight AIDS, Tuberculosis, and Malaria is a crucial organization in the global fight against these devastating diseases.

#### Operations

- It operates with a strong commitment to transparency, accountability, and collaboration among various stakeholders.

#### Objectives

- To reduce the prevalence and impact of HIV/AIDS, tuberculosis, and malaria worldwide. Its work is aligned with the United Nations' Sustainable Development Goals (SDGs), particularly Goal 3, which focuses on good health and well-being for all.

#### Partnership

- Between governments, civil society organizations, the private sector, and individuals affected by HIV/AIDS, TB, and malaria.

#### Headquarters

- Geneva, Switzerland, and operates under high standards of governance.

## RAMBHA-LP Payload

### Context

- Oil-eating” *Alcanivorax borkumensis* bacteria form “dendritic” biofilms that reshape oil droplets to speed up the rate of consumption, researchers report.

### Details

- The findings reveal how this particular bacterium optimizes oil biodegradation and consumption. Obligately hydrocarbonoclastic bacteria (OHCB) survive by consuming





Details:

- Chandrayaan-3 is the third mission in the Chandrayaan program, a set of moon missions launched by the Indian Space Research Organization (ISRO).
- The current mission, launched from Satish Dhawan Space Centre on July 14, includes the Vikram lunar lander and an accompanying lunar rover, Pragyan, which follow a similar pairing of lunar exploration vehicles launched in 2019 as part of the Chandrayaan-2 mission.
- Although the LRO's mission was originally intended to last for just two years, it was extended to allow the spacecraft to continue to collect data that may help scientists understand a range of questions that include the evolution of the moon's crust and regolith.

About The Lunar Reconnaissance Orbiter (LRO):

About

- It is a NASA robotic spacecraft currently orbiting the Moon in an eccentric polar mapping orbit.

Launched

- Launched in 2009 to study the moon's surface and gather data for future lunar missions.

Function

- Its detailed mapping program identifies safe landing sites, locating potential resources on the Moon, characterizing the radiation environment, and demonstrating new technologies.

Objectives

- To make a 3D map of the Moon's surface from lunar polar orbit.
- It has also been used to study the Moon's geology, mineralogy, and environment.
- It orbits the Moon in an eccentric polar mapping orbit.

Instruments

- It is equipped with 7 science instruments, the most well-known of which is a 195-millimeter (7.7-inch) telescope and camera system that can see details up to 2.5 meters across. It is equipped with a laser altimeter that produces 3D maps by shooting lasers at the surface and measuring reflection times.

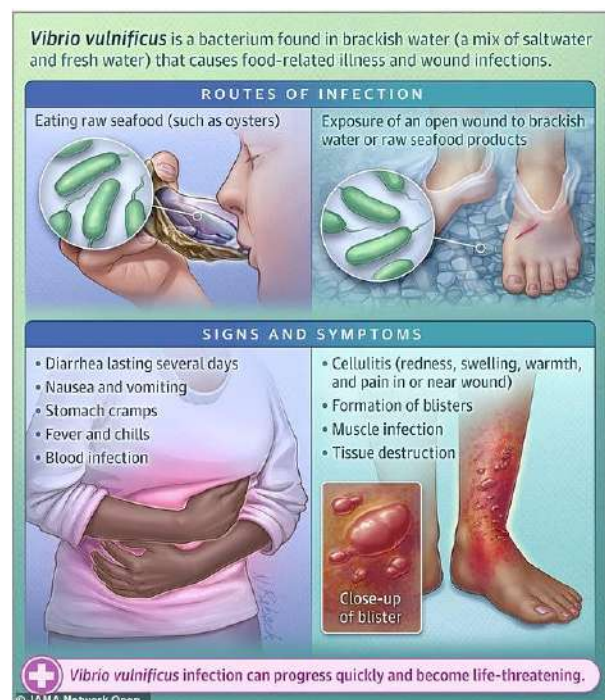
**Vibrio vulnificus**

Context:

- The US Centers for Disease Control and Prevention issued a national health alert for people infected with the flesh-eating bacteria Vibrio vulnificus.

Details:

- During the summer, in the months of July and August, many cases of the infections have surfaced in Connecticut, New York and North Carolina. As reported earlier, at least 5 people have died after being infected with the bacteria.
- As per the CDC, people who suspect an infection with the bacteria should get treatment as soon as possible, in order to have a better chance of surviving the infection.
- The bacteria has developed a resistance to microbes, and about 50% of infections do not respond to antibiotics anymore. For people with wound infections, there is a 25% fatality rate and if the infection moves into the bloodstream, the



consequences are reported to be fatal.

### About *Vibrio vulnificus*:

#### About

- It is a species of **Gram-negative, motile, curved rod-shaped (bacillus), pathogenic bacteria** of the genus *Vibrio*. Present in marine environments such as estuaries, brackish ponds, or coastal areas, ***V. vulnificus* is related to *V. cholerae***, the causative agent of cholera.

#### Epidemiology

- *Vibrio vulnificus* is commonly found in the **Gulf of Mexico**, where more than a dozen people have died from the infection since 1990.

#### Treatment

- ***Vibrio vulnificus* wound infections have a mortality rate around 25%**. In people in whom the infection worsens into sepsis, typically following ingestion, the mortality rate rises to 50%.
- The majority of these people die within the **first 48 hours of infection**.
- **The optimal treatment is not known**, but in one retrospective study of 93 people in Taiwan, use of a third-generation cephalosporin and a tetracycline (e.g., **ceftriaxone and doxycycline, respectively**) was associated with an improved outcome.

#### Natural transformation

- It is a **bacterial adaptation for DNA transfer between individual cells**. *V. vulnificus* was found to become naturally transformable during growth on chitin in the form of crab shells.
- The **ability to now carry out transformation experiments** in the laboratory should facilitate molecular genetic analysis of this opportunistic pathogen.

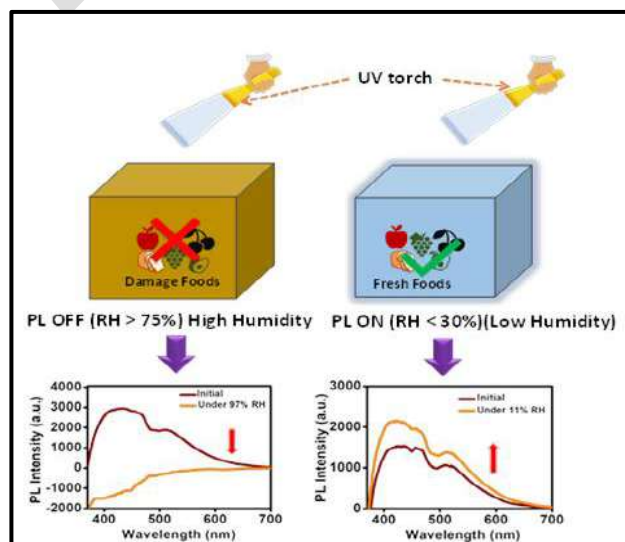
## Advanced Biodegradable Nanocomposite Film

### Context

- Recently, researchers from the Institute of Advanced Study in Science and Technology (IASST), Guwahati, have successfully fabricated a biodegradable nanocomposite film with optical and mechanical properties.

### Key Highlights of the Research:

- Researchers have fabricated an optically active biodegradable nanocomposite film with excellent mechanical properties that can be used as a stretchable optical devices like flexible display, flexible organic LED, etc.
- **An autonomous institute of North-East India under the Department of Science and Technology (DST), fabricated a biodegradable PVA-CuO nanocomposite film using a facile solution casting technique, where Cu salt used as a precursor for the in-situ CuO nanoparticles formation under different heat treatment.**
- This research group is led by Dr. Sarathi Kundu, Associate Professor, along with Mr. Saiyad Akhirul Ali, working as a Junior Research Fellow (JRF). **Their tests have proved superior optical, mechanical, and antimicrobial properties of the nanocomposite films under different heat treatments.**
- **The formation of the CuO nanoparticles inside the polymer matrix under heat treatment is confirmed by different spectroscopic and microscopic techniques.**





- **The evaluation of mechanical properties** validated the formation of a highly flexible and robust nanocomposite film with tensile strength as high as 39 MPa and flexibility of 169% with copper chloride loading.
- **The PVA-CuO nanocomposite film fabricated by the simple solution** casting technique followed by the heat treatment method recently published in the journal of Colloids and Surfaces A: Physicochemical and Engineering Aspects, can be used as a stretchable optical device.

### Polymers

- **Polymers are large molecules composed of repeating subunits called monomers.** These molecules are essential in various fields, including chemistry, materials science, and industry.
- **They have a wide range of properties and are used in everyday products,** such as plastics, rubber, and fibers.
- Biodegradable polymers are a type of polymer that can break down naturally into environmentally friendly substances over time.

### Nanoparticles

- Nanomaterials are **engineered at the nanoscale, with a particle size of less than 100 nm in at least one of its dimensions.**
- Their structures and properties are significantly different from those of bulk materials due to their small size.

### Nanocomposite film

- A nanocomposite film is a **thin, layered material consisting of a polymer matrix** integrated with nanoparticles or nanomaterials.
- **These films are designed to combine the unique properties of nanomaterials** with the advantages of the polymer matrix to achieve specific desired characteristics.

## Supernova

### Context

- James Webb Space Telescope captures stunning image of SN1987A supernova, offering new insights into its history and evolution.

### Details

- The cosmos has offered up a breathtaking sight as the **James Webb Space Telescope (JWST)** captures an **image of SN1987A, a supernova** – a star that exploded – situated just 170,000 light-years away from Earth in the Large Magellanic Cloud, a neighboring dwarf galaxy.
- **SN1987A made history when it exploded in 1987**, becoming the nearest and brightest supernova visible from our planet in nearly four centuries.
- Now, the **\$10 billion JWST is providing an unprecedented view** of this cosmic spectacle, revealing intricate details that have remained hidden until now.
- **This supernova, often referred to as a "string of pearls,"** showcases a series of luminous rings composed of gases and dust expelled by the dying star in its various phases of collapse and explosion.
- **The rings, illuminated by the shockwaves generated** during the star's final moments, are a stunning display of celestial beauty.

### About Supernova:

- A supernova is the explosion of a star. It is the largest explosion that takes place in space.
- **Supernovas are often seen in other galaxies.** But supernovas are difficult to see in our own Milky Way galaxy because dust blocks our view. **In 1604, Johannes Kepler discovered the last observed supernova** in the Milky Way.
- **Causes:** A supernova happens where there is a change in the core, or center, of a star. A change can occur in two different ways, with both resulting in a supernova.

- **The first type of supernova happens in binary star systems.** Binary stars are two stars that orbit the same point. One of the stars, a carbon-oxygen white dwarf, steals matter from its companion star.
  - Eventually, the **white dwarf accumulates too much matter.** Having too much matter causes the star to explode, resulting in a supernova.
- **The second type of supernova occurs at the end of a single star's lifetime.** As the star runs out of nuclear fuel, some of its mass flows into its core. **Eventually, the core is so heavy that it cannot withstand its own gravitational force.**
  - The core collapses, which results in the giant explosion of a supernova. The sun is a single star, but it does not have enough mass to become a supernova.

## Nipah virus

### Context

- With India on high alert after a resurgence of the potentially deadly Nipah virus (NiV), which has killed at least two people in recent days.

### Details:

- The virus strain seen in the state was the Bangladesh variant that spreads from human to human and has a high mortality rate, though it is less infectious in some countries for up to \$75 per person per year, which significantly increased access to the treatment.
- The outbreak of 2018, which claimed 17 lives out of 18 confirmed cases, had caught the state health department off-guard.
- The government had no past experience of handling a disease with such a high fatality rate.
- At the time, the disease was identified only after the virus had already started spreading among human, and claimed a few victims.

### What is Nipah Virus and its symptoms?

#### Origin

- The Nipah virus was **first identified in 1998** during an **outbreak in Malaysia** and Singapore.
- The **virus gets its name from the Malaysian village of Sungai Nipah**, where one of the first major outbreaks occurred.

#### Classification

- It is classified as a **zoonotic virus**, meaning it can be transmitted from animals to humans.

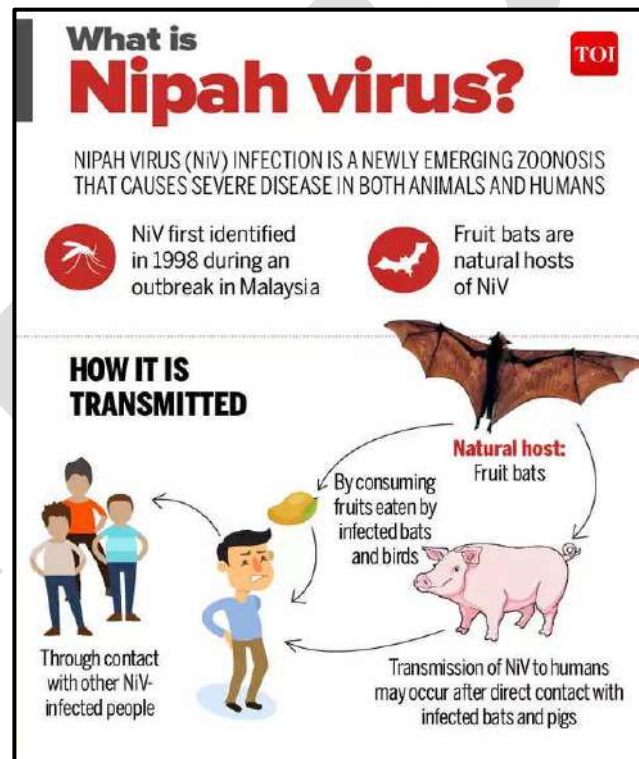
#### Host

- The natural reservoir hosts of Nipah virus are **fruit bats (Pteropus species)**, which **do not typically show symptoms** of the disease but can shed the virus in their urine, saliva, and faeces.
- **Human infections** often occur through the **consumption of contaminated fruit** or close contact with infected animals.

#### Symptoms

- Nipah virus infection can vary widely in its presentation, from mild to severe. This variability makes early diagnosis challenging.

#### Treatments





- Currently, **there is no specific antiviral medication approved** for the treatment of Nipah virus infection. This means that **patient care primarily involves supportive measures**, such as maintaining hydration, managing symptoms, and providing respiratory support for severe cases.

### Zoonotic Transmission

- The Nipah virus primarily **spreads from animals to humans, with bats as the natural reservoir hosts**. Preventing transmission from bats and other animals to humans is a complex challenge, as it involves modifying human-animal interactions and behaviours.

## Gene-drive technology

### Context

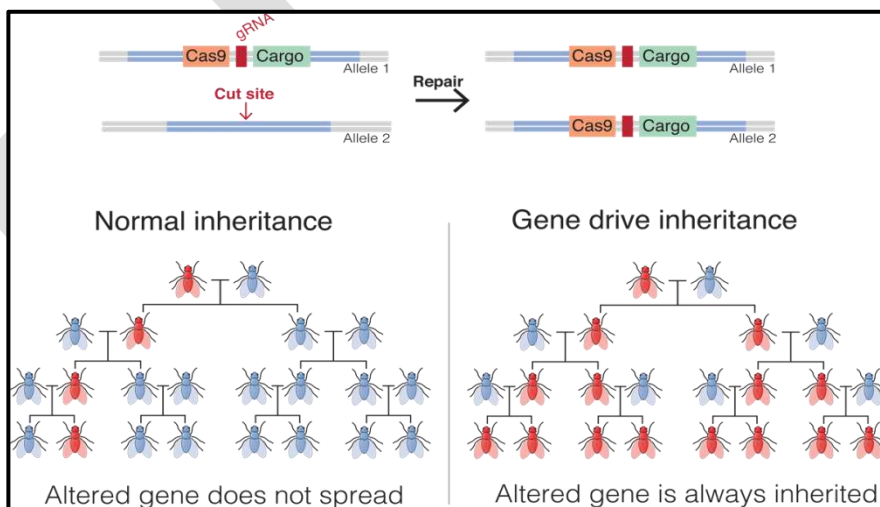
- “Oil-eating” *Alcanivorax borkumensis* bacteria form “dendritic” biofilms that reshape oil droplets to speed up the rate of consumption, researchers report.

### Details:

- Throughout human history, mosquitoes have constantly buzzed in the background of human existence, irritating us with their incessant bites and occasionally wreaking havoc by transmitting deadly diseases.
- The earliest known mosquitoes from the fossil record date back at least **70 million years**, and evidence of **mosquito-borne diseases like malaria dates back to Egyptian mummies** from 2000 BC.
- Apart from malaria, which claims the lives of over half a million people every year and infects close to 250 million, mosquitoes serve as vectors for various other diseases.
- **These include dengue, Zika, lymphatic filariasis, and yellow fever**. Understandably, our relationship with these tiny, blood-sucking insects has been far from cordial.

### About Gene-drive:

- The fundamental idea behind **genetic manipulation of mosquitoes** is to systematically control their populations by interfering with their reproduction.
- Scientists worldwide have **developed various genetic modification approaches**.
- A major one in this endeavour is **gene-drive technology**, whose end result is for mosquitoes to selectively inherit some genes, rather than the inheritance to follow the **rules of Mendelian genetics**.



### How does it work?

- A **protein (CSIRP)** cuts the mosquito’s DNA at a part that doesn’t encode a particular sequence in the genome.
- This triggers a **natural mechanism** in the cell containing the **DNA to repair it** and forces the cell to incorporate a sequence, called the **drive sequence**, into the damaged portion.
- It genetically enhanced a **gene expressed in the midgut of mosquitoes** to secrete **two antimicrobial substances** called **magainin 2 and melittin**.
- They are **detrimental to the Plasmodium parasite’s development** in the midgut and also **reduce the lifespan of female mosquitoes**.

## Drug Recall

### Context

- The Drugs Controller General of India has advised patients and healthcare professionals to stop using Digene gel, a popular antacid, due to safety concerns.

### Details

- **The Central Drugs Standard Control Organisation (CDSCO) has alerted healthcare professionals, consumers, patients, wholesalers, distributors, and regulatory authorities about the voluntary recall of Abbott India's popular antacid syrup Digene Gel, manufactured at its Goa facility.**
- **The Drugs Controller General of India (DCGI), who heads the CDSCO, also advised the doctors and healthcare professionals to carefully prescribe and educate their patients to discontinue the use and to report any adverse drug reactions arising due to consumption of Digene Gel.**
- **The drug controller's notice said the company initially withdrew one batch of its product available in mint flavour and four batches in orange flavour after receiving a complaint about a product that was white, had bitter taste and pungent smell early August.**
- **Within a week the company recalled all batches of its Digene syrup sold in mint, orange, and mixed-fruit flavours manufactured at its Goa facility.**

The drug is known to relieve acidity and its symptoms such as heartburn, stomach discomfort, abdominal pain and gas. It can be prescribed for gastritis (inflammation of the stomach lining) and acid reflux (a condition where stomach acid flows back to the food pipe). It uses basic compounds like magnesium hydroxide to neutralise the stomach acid.

### About Drug Recall

#### About

- It is the **process of removing or correcting a marketed drug product** that violates the laws and regulations governing the safety, efficacy, or quality of a drug.

#### Occurrence

- A drug recall occurs when a prescription or over-the-counter drug is removed from the market because of its harmful or side effects.

#### Issued

- These are typically issued when a product is found to be defective, contaminated, mislabeled, or poses a risk to the health and safety of patients.

#### Objectives

- The goal of a drug recall is to **protect the public from harm by removing the affected product from the market, and to provide a remedy** or refund for consumers who have already purchased the product.



## International Organization of Legal Metrology

### Context

- Bharat becomes the 13th country in world that can issue Internationally Accepted OIML (International Organization of Legal Metrology) Certificates.

### Details

- OIML is an Intergovernmental organization which was established in 1955. Bharat became its member in 1956. It has 63 Member States and 64 Corresponding Members.
- Bharat has now become authority for issuing internationally accepted OIML certificate for selling weights & measures anywhere in the world.

- To sell a weight or measure in the International market an OIML Pattern Approval certificate is mandatory, which Department of Consumer Affairs can issue now.
- **Bharat follows OIML recommendations** and procedures of testing and calibration of weights and measures. The reports prepared by the Legal Metrology's Regional Reference Standards Laboratories are now acceptable to the OIML issuing authorities.
- **Now, Bharat is an authority for issue of OIML pattern** approval certificates and can act as support system for indigenous manufacturers.
- **The domestic manufacturers** can now export their weighing and measuring instrument worldwide without incurring additional testing fees, resulting in significant cost savings.

#### About International Organization of Legal Metrology:

##### About

- The International Organisation of Legal Metrology (OIML) is an intergovernmental organization that was established in 1955 to promote and harmonize legal metrology worldwide.
- **Legal metrology involves the science and application** of measurement techniques and measurement standards used for regulatory and trade purposes.

##### Objectives

- **The primary objective of the OIML is to facilitate international trade** by developing and maintaining a coherent and internationally recognized system of legal metrology.
- **This system helps ensure that measurements used in trade and commerce** are accurate and consistent, regardless of the country of origin.

##### Functions

- The OIML develops and publishes international standards, guidelines, and recommendations related to measurement standards, equipment, and practices.
- **These standards cover a wide range of measurement areas**, including weights and measures, length, mass, volume, temperature, and more.

## **Juno spacecraft**

##### Context

- NASA's Juno mission took this image of Jupiter and the most volcanic world on the solar system just hours before a close flyby of the gas giant.

##### Details

- NASA's Juno spacecraft captures spectacular portrait of Jupiter and its moon Io.
- **The National Aeronautics and Space Administration's (NASA)** Juno mission completed its 53rd close flyby of Jupiter on July 31 this year and just hours before that, it sped past the gas giant's volcanic Moon Io and captured this stunning frame of both of them together.
- **Io is the most volcanically active world** in our solar system and it has hundreds of volcanoes that often erupt with molten lava and sulphurous gases.
- **The Juno mission has given scientists the closest look at Io since 2007** and it will continue to gather images and science data during even close flybys later this year and early in 2024.
- **Io is slightly larger than the Earth's Moon** and has a diameter that is about one-quarter that of our planet. Io is tidally locked to Jupiter, meaning that one side of the Moon always faces the planet.
- **It takes around 1.8 Earth days to both rotate on its axis** and revolve once around Jupiter.

##### About Juno spacecraft:

- Juno is a NASA spacecraft orbiting the planet Jupiter.
- Note: Juno is the second spacecraft to orbit Jupiter, after the nuclear-powered Galileo orbiter, which orbited from 1995 to 2003.

##### Construction and operation:

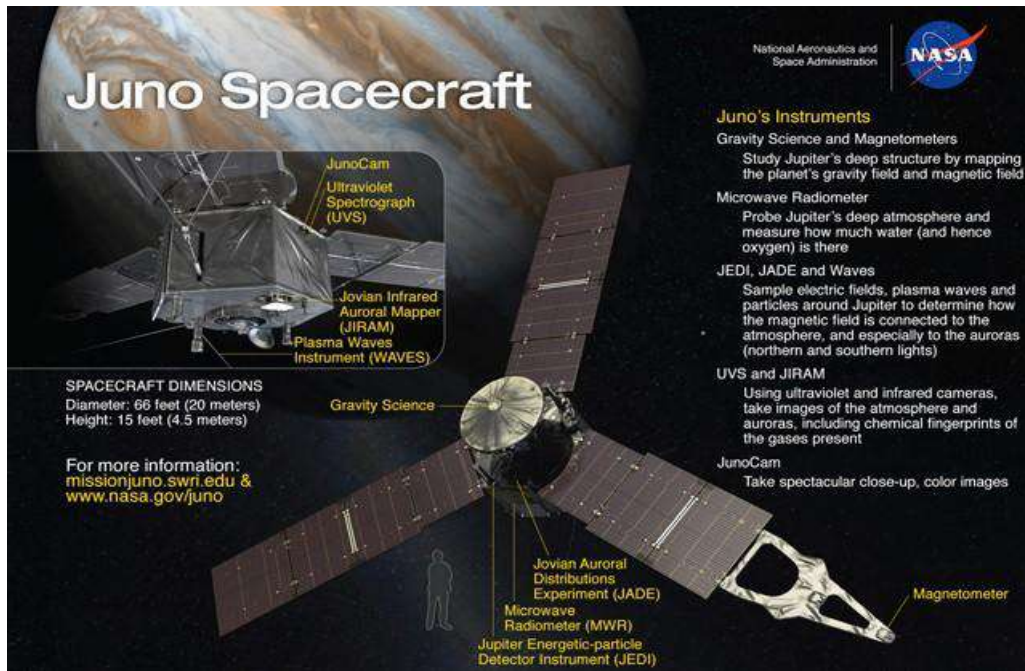
- Juno Spacecraft was built by Lockheed Martin and is operated by NASA's Jet Propulsion Laboratory.

**Launch:**

- The spacecraft was launched on, August 5, 2011 as part of the New Frontiers program.

**Mandate:**

- Juno entered a polar orbit of Jupiter on July 5, 2016, to begin a scientific investigation of the planet.
- **Significance of Juno Mission**



- The Juno spacecraft, is the first explorer to peer below the planet's dense clouds to answer questions about the gas giant itself and the origins of our solar system.

**Epizootic Haemorrhagic Disease**

**Context**

- Epizootic haemorrhagic disease (EHD) has caused more than 150 outbreaks in Spain, Portugal and southern Italy since November last year.

**Details:**

- The UK's Department for Environment, Food and Rural Affairs (DEFRA) says that climate change may have led to warmer summers that favour the midges' survival and reproduction.
- It also warns that the disease is moving towards the northern regions of Spain, such as Basque, Aragon and Catalonia, where there are many cattle farms and where France is nearby.

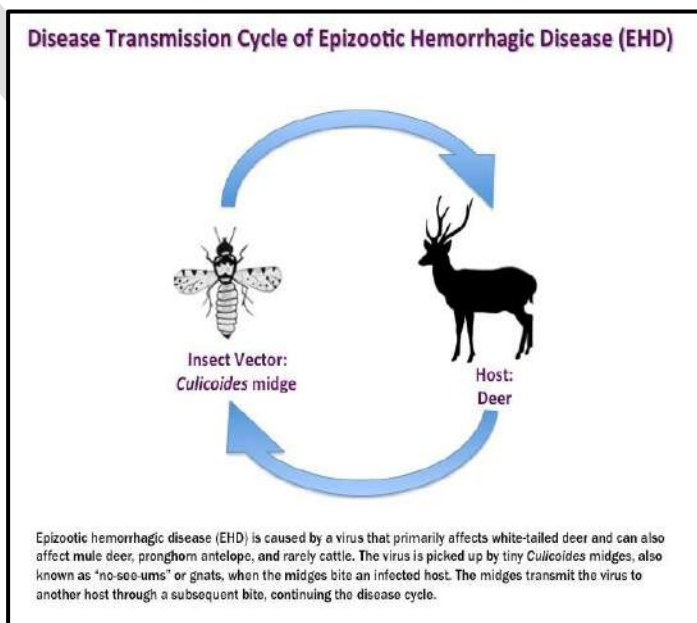
**What is Epizootic Haemorrhagic Disease?**

**Origin**

- Epizootic Hemorrhagic Disease (EHD) was first identified in the United States in the 1950s.

**Caused by**

- It is caused by viruses belonging to the Orbivirus genus and is primarily transmitted through the bites of infected midges (Culicoides species). These midges serve as vectors for the virus, transmitting it from one animal to another.





### Spread

- Over time, EHD has spread to various parts of the world, including parts of Africa and the Middle East.

### Symptoms

- EHD primarily affects ruminant animals, such as cattle, deer, sheep, and goats. The symptoms of EHD can vary in intensity depending on the severity of the infection.
- **Fever:** When cattle are infected with EHD, they often exhibit an elevated body temperature. This fever is a physiological response to the presence of the virus in their system. The rise in body temperature is one of the initial indicators of infection.
- **Weakness:** Affected cattle typically become noticeably weak and lethargic. This weakness can manifest as reduced physical activity, difficulty standing, and an overall lack of energy. It is a consequence of the virus's impact on the animal's overall health.
- **Lack of Appetite:** EHD-infected cattle frequently experience a significant loss of appetite. They may display a reluctance to eat and drink, resulting in reduced food intake. This decreased interest in food can lead to weight loss over time.

### Treatments

- There is no specific cure for EHD, and treatment primarily focuses on supportive care for affected animals.

## Leptospirosis

### Context

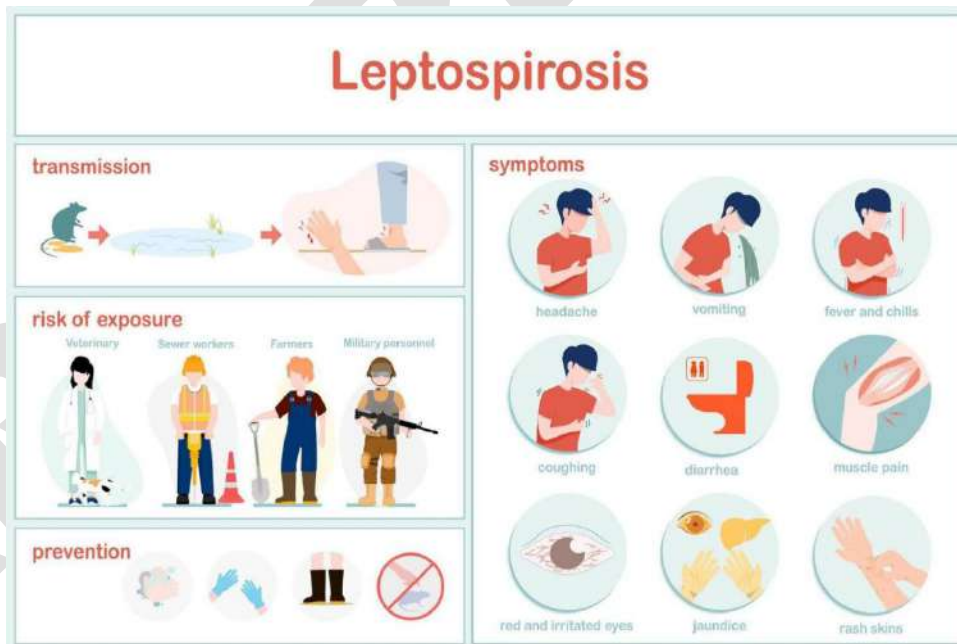
- Odisha is currently facing two disease outbreaks: Scrub Typhus and Leptospirosis, resulting in the deaths of six people in the state.

### Details:

- The most recent death from Scrub Typhus was reported in Sundergarh district, while five people in Bargarh district had previously succumbed to the disease.
- The Odisha Government has issued directives to district health authorities to intensify surveillance in response to the seasonal increase in Scrub Typhus and Leptospirosis cases. Authorities have been instructed to use appropriate antibiotics and maintain an adequate stock of drugs.
- The State Health Department has emphasized the importance of ensuring the availability of tests, sensitizing doctors to recommend tests in cases of PUO (Prolonged Febrile Illness), raising public awareness, enabling early diagnosis, and maintaining increased surveillance.

### About Leptospirosis:

#### About





- Leptospirosis is a significant public health concern, especially in regions with a high prevalence of the disease.

**Caused by**

- Leptospirosis is caused by a group of spirochete bacteria called Leptospira. These bacteria are typically found in the urine of infected animals, including rodents, cattle, and dogs.

**Infection**

- Humans can become infected through contact with contaminated water, soil, or environments where infected animals have urinated.

**Symptoms**

- Like scrub typhus, leptospirosis often presents with a sudden onset of high fever.
- Severe headaches are common.
- Patients may experience shivering or chills.
- Nausea and vomiting are frequent symptoms.
- Conjunctival suffusion, a condition where the eyes appear red without discharge, can occur.

**Complications**

- Without treatment, leptospirosis can lead to severe complications, including kidney damage, liver failure, meningitis, respiratory distress, and even death.

**Treatment**

- Leptospirosis is treated with antibiotics, typically doxycycline or penicillin, which are most effective when administered early in the course of the illness. Supportive care may also be necessary to manage symptoms and complications.
- Prevention involves avoiding exposure to contaminated water and minimizing contact with potentially infected animals.

**Vaccine**





- There is a vaccine available for certain strains of Leptospira, which can be considered in high-risk situations.

**Patient Safety Rights**

**Context**

- The World Health Organization (WHO) released the first-ever patient safety rights charter outlining the core rights of all patients in the context of safety of health care.

**Details:**

<b>WHAT IS LEPTOSPIROSIS</b>		
<p>➤ Leptospirosis is a bacterial disease that affects both humans and animals</p>	<p>➤ It is caused by bacteria of the genus leptospira</p>	<p>➤ In humans, it can cause a wide range of symptoms, some of which may be mistaken for other diseases</p>
<p><b>HOW DO HUMANS GET INFECTED</b></p> <p>➤ The infection spreads first from animals through their urine </p> <p>➤ Humans get infected through direct contact with urine of infected animals or with a urine-contaminated environment</p> <p>➤ This infected urine gets mixed with water in puddles, waterlogged streets or flooded areas </p> <p>➤ Humans who waded through such water may get infected</p> <p>➤ The bacteria enters body through cuts or abrasions on skin, or through mucous membranes – nose and eyes </p> <p>➤ Person-to-person transmission is rare</p>		<p><b>ANIMAL SPECIES THAT CAN TRANSMIT THE DISEASE TO HUMANS</b></p> <p>A wide variety of animal species, primarily mammals, may serve as sources of human infection </p> <p><b>The following are considered to be the most important in this context:</b></p> <p><b>1</b> Small mammal species, notably feral and peridomestic rodents (rats, mice, voles, etc.) and insectivores (shrews and hedgehogs)</p> <p><b>2</b> Domestic animals (cattle, pigs, dogs, more rarely sheep, goats, horses and buffaloes)</p> <p><small>(Source: World Health Organization, Centre for Disease Control)</small></p>

- The charter also sought to assist governments and other stakeholders to ensure the voices of patients are heard and their right to safe health care is protected.
- Patient safety is the avoidance of unintended or unexpected harm to people during the provision of health care.
- Around 1 in every 10 patients is harmed in health care and more than 3 million deaths occur annually due to unsafe care, according to Organisation for Economic Co-operation and Development (OECD).
- In low-to-middle income countries, as many as 4 in 100 people die from unsafe care.

The charter outlines the core rights of all patients in the context of safety of health care and seeks to assist governments and other stakeholders to ensure that the voices of patients are heard and their right to safe health care is protected.

According to the WHO, there are multiple and interrelated factors that can lead to patient harm and more than one factor is usually involved in any single patient safety incident:

- The charter was announced following a conference on September 12 and 13 at WHO headquarters in Geneva and online.
- Over 2,300 people from all six WHO regions participated in it, including patient advocates and representatives of patients' organisations.
- Health systems must work hand-in-hand with patients, families, and communities, so that patients can be informed advocates in their own care and every person can receive the safe, dignified, and compassionate care they deserve.
- A 2023 survey of WHO Member States on the implementation of the Global Patient Safety Action Plan 2021-2030 showed the poor state of its execution.
- Interim results of the survey showed only 13 per cent of responding countries have a patient representative on the governing board or an equivalent mechanism in the majority of their hospitals.
- Income-based implementation gap was also pointed out by the survey as good practices were largely concentrated in higher-income countries.
- According to the OECD, investing in patient safety positively impacts health outcomes, reduces costs related to patient harm, improves system efficiency, and helps in reassuring communities and restoring their trust in health care systems.

## Suprathermal and Energetic Particle Spectromete

### Context

India's solar mission, Aditya L1, has embarked on a journey to Lagrange point 1 (L1) and has begun its study of energetic particles in the solar wind from space.

### Details

- Aditya L1, India's solar mission, aims to study the Sun and its various aspects, including the solar wind, which consists of charged particles emitted by the Sun.
- The study of the solar wind is facilitated by a device called the Supra Thermal & Energetic Particle Spectrometer (STEPS), which is part of the Aditya Solar wind Particle EXperiment (ASPEX) payload.

### About Supra Thermal and Energetic Particle Spectrometer (STEPS):

#### About

- STEPS stands for Supra Thermal and Energetic Particle Spectrometer. It is a sub-system onboard India's Aditya-L1 spacecraft and part of the Aditya Solar Wind Particle Experiment (ASPEX) payload.
- It is designed to measure fast-moving charged particles generated by processes within the Sun.

#### Operation from space

- STEPS began functioning from space within the Earth's magnetic field since September 10, 2023, when **Aditya L1** was approximately **52,000 kilometers** above Earth.

### Development

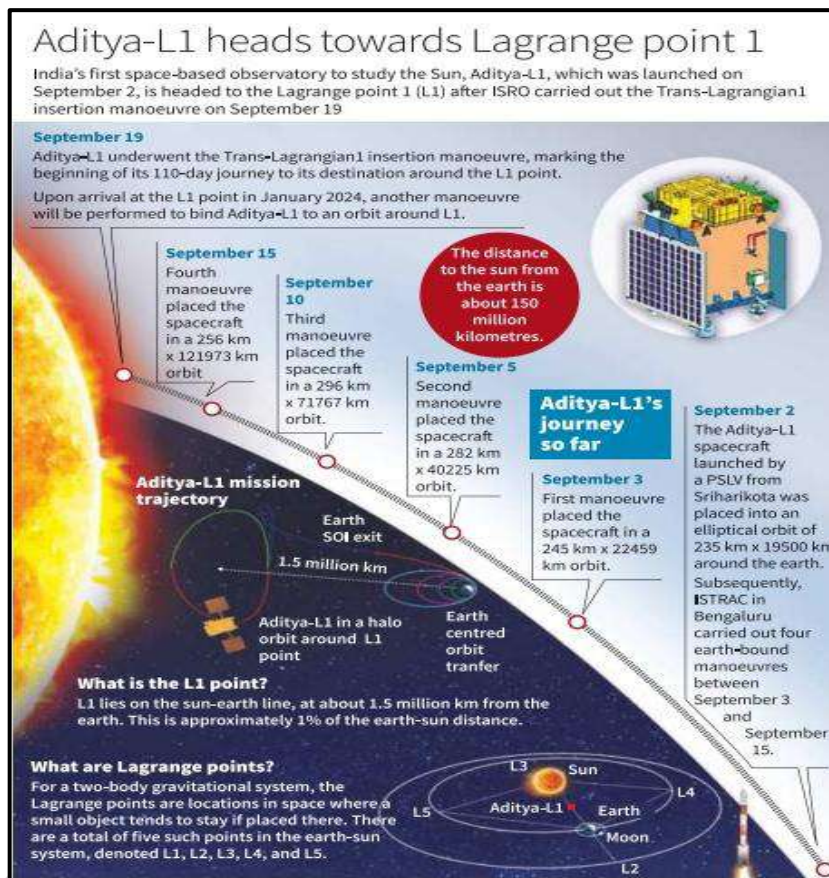
- STEPS was developed by the Physical Research Laboratory (PRL) with support from the Space Application Centre (SAC) in Ahmedabad, India.

### Function

- The primary goal of STEPS is to study the environment of energetic particles from the spacecraft's vantage point at L1.
- Additionally, the data collected by STEPS will contribute to a better understanding of how space weather changes over time.

### Sensor configuration

- STEPS is equipped with six sensors, each observing in different directions and measuring supra-thermal and energetic ions.
- This data is crucial for analyzing the behavior of particles surrounding Earth, especially in the presence of the planet's magnetic field.



## Transiting Exoplanet Survey Satellite

### Context

- Using NASA's Transiting Exoplanet Survey Satellite (TESS), an international team of astronomers has detected a new exoplanet orbiting a distant star.

### Details

- TESS is conducting a survey of about 200,000 of the brightest stars near the sun with the aim of searching for transiting exoplanets.
- So far, it has identified nearly 6,800 candidate exoplanets (TESS Objects of Interest, or TOI), of which 385 have been confirmed so far.
- Now, a group of astronomers led by Stephanie Yoshida of the Harvard-Smithsonian Center for Astrophysics (CfA) in Cambridge, Massachusetts, reports the confirmation of another planet monitored by TESS

### About Transiting Exoplanet Survey Satellite:

#### About

- TESS, the Transiting Exoplanet Survey Satellite, is a NASA space telescope launched on April 18, 2018, with the primary mission of searching for exoplanets orbiting the brightest stars in the sky.



- It represents a significant advancement in the field of exoplanet discovery, building on the success of previous missions like Kepler.

### Objectives

- **TESS's primary mission is to discover exoplanets using the transit method**, which involves detecting the periodic dimming of a star's light when a planet passes in front of it.
- Unlike Kepler, which focused on a small patch of sky, TESS surveys nearly the entire sky, divided into 26 sectors, during its two-year primary mission.

### Instrumentation and Capabilities

- **TESS is equipped with four wide-field cameras**, each with a 24 x 24-degree field of view, providing a wide coverage area for observing stars.
- It can monitor over 200,000 stars simultaneously, searching for the subtle brightness variations caused by exoplanet transits.

### Discoveries and Contributions

- **TESS has made numerous exoplanet discoveries**, including a wide variety of planet sizes and types, ranging from Earth-sized rocky planets to gas giants.
- It has identified several exoplanets in the habitable zone, where conditions might be suitable for liquid water and potentially life.

## **Vibrio Vulnificus Infection**

### Context

- Vibrio vulnificus bacteria can be found in raw or undercooked seafood, but also naturally occurs in saltwater and brackish water.

### Details

- The Centers for Disease Control and Prevention has issued a health alert in response to the number of people who have been infected with Vibrio vulnificus and those who have died as a result of the infection since the start of the year.
- Approximately 80,000 people get Vibrio vulnificus every year. Of those infected, only about 100 people will die from the infection annually in the U.S., according to the CDC.

**Vibrio vulnificus is a marine bacterium** that has the potential to become a significant threat to coastal populations in the future. This bacterium is expected to proliferate due to the ideal environmental conditions resulting from warmer oceans and high rainfall.

### What is Vibrio Vulnificus Infection?

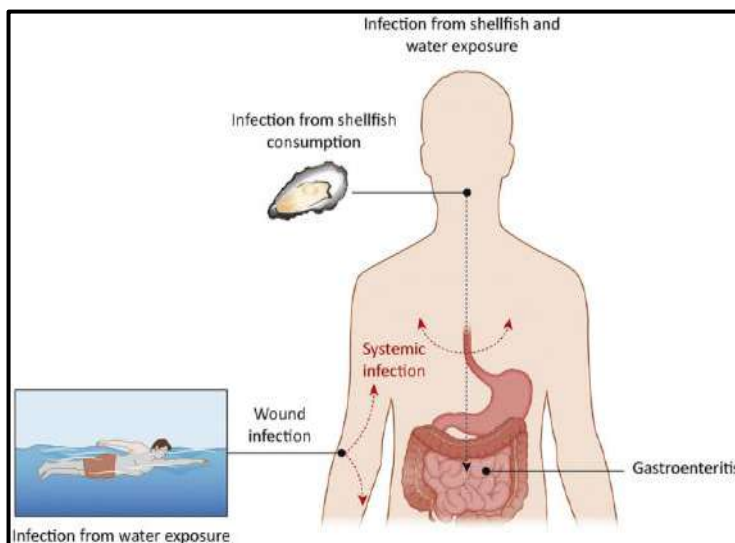
#### Origin

- Vibrio vulnificus is naturally found in marine environments, particularly in warm coastal waters with low salinity.

#### Risks

- Certain individuals are at a higher risk of severe Vibrio vulnificus infections, including those with comorbidities such as chronic liver disease, cancer, chronic kidney disease, and diabetes. Immunocompromised individuals are also more susceptible to the bacterium.

#### Transmission



- **It can enter the human body through two main routes:**
- People can contract *Vibrio vulnificus* by eating raw or undercooked seafood contaminated with the bacterium. This can lead to symptoms such as diarrhoea, vomiting, and fever.
- Another mode of transmission is through open wounds or cuts coming into contact with waters where *Vibrio vulnificus* is present. This can result in a severe and potentially life-threatening flesh-eating disease, with a mortality rate of 15-50%.

#### **Symptoms**

- **Consumption of Infected Raw Shellfish:** When ingested, *Vibrio vulnificus* can cause symptoms such as diarrhoea, vomiting, abdominal pain, and fever. In some cases, these symptoms can be severe, especially in individuals with weakened immune systems.

#### **Cure**

- **Antibiotics are often administered to combat the infection.** However, the effectiveness of treatment decreases if the bacterium has entered the bloodstream.
- In severe cases, especially when the infection has progressed to gangrene or septicemia, surgical procedures such as amputation may be necessary.

## **Foot and Mouth Disease**

#### **Context**

- The step taken under the National Animal Disease Control Programme of the Union government will result in doubling the farmers' income by 2025 by improving the health status and productivity of the livestock population.

#### **Details:**

- The department of animal husbandry and fisheries of the UT administration has vaccinated over 21,000 livestock – cattle, buffalo, sheep, goats and pigs – of Chandigarh against foot and mouth disease (FMD) and brucellosis disease free of cost.
- UT department has been implementing the programme since its inception in 2020. The overall aim of the programme is to control FMD and brucellosis by regular vaccinations and its eventual eradication by 2030, as per the Union government guidelines.

#### **About Foot and Mouth Disease:**

##### **About**

- Foot and Mouth Disease (FMD) is a **highly contagious viral disease** that affects cloven-hoofed animals, including domesticated livestock and certain wild animals.

##### **Caused by**

- The disease is caused by the Foot and Mouth Disease Virus (FMDV), which belongs to the Picornaviridae family.

##### **Affected Animals**

- **Livestock:** FMD primarily affects cloven-hoofed animals, including cattle, pigs, sheep, goats, and deer.
- **Wildlife:** While these animals are the primary hosts, some wildlife species can also be infected, serving as potential reservoirs for the virus.

##### **Transmission**

- **Direct Contact:** The virus is highly contagious and can be transmitted through direct contact with infected animals.
- **Airborne Spread:** FMDV can also spread through the air, especially in crowded conditions, as the virus is present in respiratory secretions and fluids.

##### **Impacts**

- **Trade Restrictions:** FMD outbreaks can have severe economic consequences due to trade restrictions imposed by countries to prevent the spread of the virus.



- **Reduced Productivity:** Infected animals may experience a decline in productivity, affecting meat and milk production.

### Treatment

- **Vaccination:** Vaccination is a key preventive measure, and several countries have vaccination programs to control FMD.
- **Quarantine and Movement Controls:** Strict quarantine measures and movement controls are implemented during outbreaks to prevent the spread of the virus.

## Polyethylene Terephthalate

### Context

- A new study of Kiel University has shown for the first time, that, using microorganisms from the deep sea, that polymers such as PET are continuously degraded by an enzyme.

### Details:

- Plastic pollution is increasingly affecting the health of coasts and oceans.
- One well-known problem is plastic bottles made from polyethylene terephthalate or PET.

### New Study:

- In the new study, Researchers have discovered a new genetic resource from deep-sea organisms belonging to the archaea.
- Until now, about 80 different PET-degrading enzymes were known, most of which were found in bacteria or fungi.
- The new findings contribute to a better understanding of the ecological role of deep-sea archaea and the possible degradation of PET waste in the sea.

*Polyethylene Terephthalate, commonly known as PET, is a thermoplastic polymer that belongs to the polyester family. It is a widely used plastic for various applications due to its versatility, transparency, strength, and recyclability.*

### Properties:

- **Transparency:** PET is transparent, making it suitable for applications such as clear beverage bottles.
- **Strength:** It has good tensile strength, making it suitable for packaging applications.
- **Lightweight:** PET is lightweight, contributing to its use in various packaging materials.
- **Chemical Resistance:** PET has good chemical resistance, making it suitable for storing a wide range of products.
- **Recyclability:** PET is highly recyclable, and recycled PET (rPET) is commonly used in the production of new PET products.

### Applications:

- **Bottles and Containers:** PET is widely used for the production of bottles and containers for beverages, food, personal care products, and household items.
- **Textile Fibers:** PET is used in the production of synthetic fibers for textiles. The resulting fabric is often known as polyester.
- **Film and Sheet:** PET films and sheets are used for various applications, including packaging, graphics, and electronics.
- **Engineering Resins:** In addition to its use in packaging, PET is used in engineering resins for applications that require higher temperature resistance and other specific properties.
- **Strapping:** PET is used for the production of strapping material for securing loads in packaging.

## 7.9 SNIPPETS

### Rashtriya Poshan Maah

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- The Ministry of Women and Child Development (MoWCD) is celebrating the 6th Rashtriya Poshan Maah.
- The focus is on comprehensively addressing malnutrition using a life-cycle approach, which is a key component of Mission Poshan 2.0.
- Theme: 'Suposhit Bharat, Sakshar Bharat, Sashakt Bharat' (Nutrition-rich India, Educated India, Empowered India), emphasising the importance of nutrition, education, and empowerment in building a healthier and stronger country.

### POSHAN Abhiyaan

PM's Overarching Scheme for Holistic Nourishment

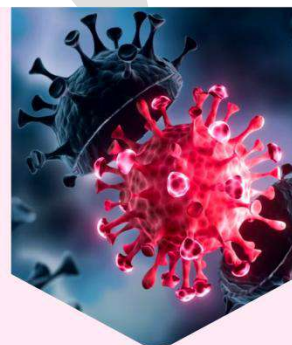
सही पोषण - देश रोशन



### Pirola

APTI PLUS

- The world is facing another wave of COVID-19 infections as a new variant, called "Pirola" or BA.2.86, spreads rapidly across the globe.
- The variant is a descendant of the Omicron strain, which emerged in 2021 and caused a devastating surge in cases and death.



### Patulin

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- Patulin is a toxic chemical compound that can be found in some fruits, particularly apples, as well as in other food products like apple juice, cider, and various processed foods.
- Patulin is a naturally occurring mycotoxin produced by certain molds, primarily *Penicillium* and *Aspergillus* species.



### Tharosaurus indicus

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- *Tharosaurus indicus* is the name given to an ancient species of dinosaur discovered in the Thar Desert region of Jaisalmer, India.
- It is a type of dicraeosaurid dinosaur, which was a group of long-necked, plant-eating dinosaurs that lived during the Jurassic period.



## Comet Nishimura

APTI PLUS

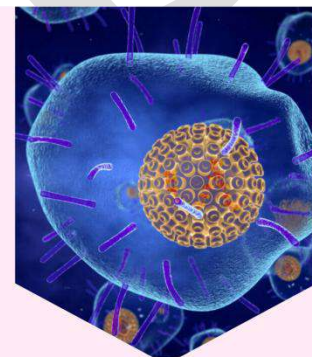
- The comet was discovered only ten days ago by Hideo Nishimura during 30-second exposures with a standard digital camera.
- It has increased in brightness as it went forward on its path in the inner solar system.
- The comet is currently located in the constellation Leo.



## Varicella Zoster Virus

APTI PLUS

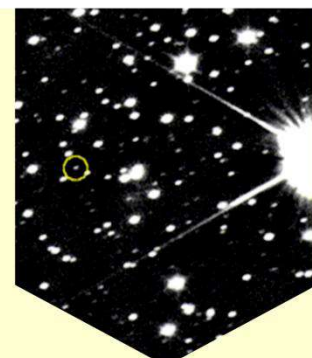
- Varicella-zoster virus (VZV) is an alpha herpes virus that causes chickenpox and herpes zoster (shingles)
- Varicella is characterized by a maculopapular, vesicular rash that can be pruritic and evolves into dried crusts (scabs) over a 3- to 7-day period.
- Reactivation of the dormant virus results in the characteristic painful dermatomal rash of herpes zoster, which is often followed by pain in the distribution of the rash (postherpetic neuralgia).



## Dinkinesh Asteroid

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- It was discovered in 1999 by the LINEAR survey.
- Dinkinesh is a slow rotator with a moderately large light-curve amplitude.
- It is an S-type asteroid, which means it is composed mainly of silicates and some metal.
- It will be the first fly-by target of the Lucy mission on November 1, 2023, during its cruise to the Trojan Clouds.



## World EV Day

APTI PLUS

- It is an annual event celebrated on September 9 to raise awareness about the benefits of electric vehicles (EVs) and to promote their adoption.
- The first World EV Day was held in 2020, and it has been growing in popularity ever since.
- The year 2023 has established a powerful message for India and the world, it is a message of sustainable transportation and a cleaner future, free of carbon emissions.





## World Duchenne Muscular Dystrophy Day

APTI PLUS

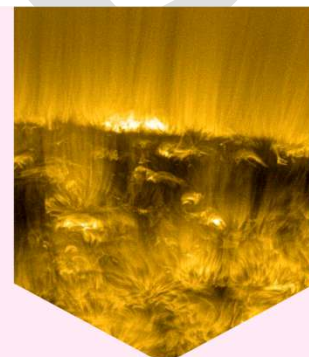
- World Duchenne Muscular Dystrophy Day is observed on Seventh September each year to raise awareness about Duchenne muscular dystrophy.
- The purpose of the day is to support efforts that will improve the quality of life for those who have dystrophinopathies through education, advocacy, and social inclusion.
- A rare degenerative illness called Duchenne muscular dystrophy makes muscles weaker over time until it affects the entire body.



## Picoflare jets

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- These small-scale picoflare jets were observed within emissions from the coronal hole under observation.
- They lasted only a few dozen seconds, scientists calculated that they provide enough energy to supply a considerable fraction of solar winds.
- These jets from the sun are named so because they carry approximately one-trillionth the energy of the largest flares the sun is capable of producing.



## Brucella canis

APTI PLUS

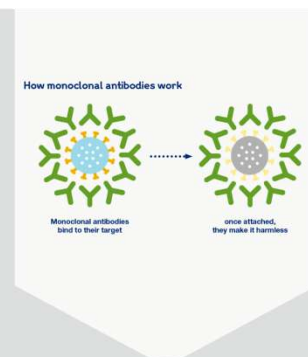
- Brucella canis is a bacterial infection caused by the microorganism Brucella canis.
- It primarily affects dogs but can also spread to humans. The origin of Brucella canis is thought to be zoonotic, meaning it can be transmitted between animals and humans.
- Brucella canis is transmitted mainly through sexual contact or contact with infected fluids, such as blood, urine, vaginal discharge or semen.
- Brucella canis is primarily transmitted among dogs through direct contact with bodily fluids, such as urine, saliva, and reproductive fluids, from infected individuals.



## Monoclonal Antibodies

APTI PLUS

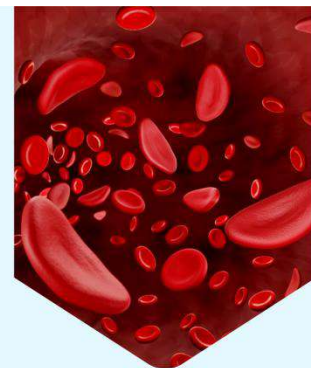
- Monoclonal antibodies (mAbs) are laboratory-produced molecules designed to mimic the immune system's ability to fight off harmful pathogens, such as bacteria and viruses.
- They are highly specific, targeting a single antigen or protein, and are used in various medical applications.
- Monoclonal antibodies exhibit an extraordinary level of specificity. They are engineered to recognize and interact with a particular target, reducing the risk of off-target effects compared to conventional drugs that may affect multiple processes in the body.



## Sickle Cell Disease

APTI PLUS

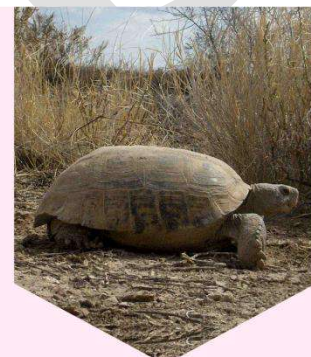
- It is a group of disorders that affects hemoglobin, the molecule in red blood cells that delivers oxygen to cells throughout the body.
- People with this disease have atypical hemoglobin molecules called hemoglobin S, which can distort red blood cells into a sickle, or crescent, shape.
- The signs and symptoms of sickle cell disease are caused by the sickling of red blood cells.



## Bolson Tortoises

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- The Bolson Tortoise (*Gopherus flavomarginatus*), also called the Mexican giant tortoise or yellow-margined tortoise, is a species of tortoise from North America.
- Of the six North American tortoise species, it is the largest, having a carapace length of about 46 cm.
- It lives in a region of the Chihuahuan Desert known as the Bolsón de Mapimí, which is located in north-central Mexico.



## NASA's OSIRIS-Rex

APTI PLUS

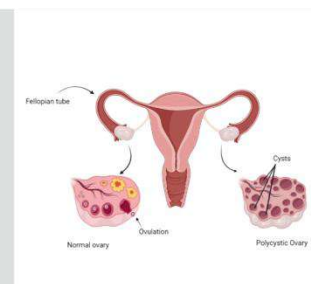
- NASA's OSIRIS-REx mission was a historic spacecraft mission designed to study and collect a sample from an asteroid called Bennu.
- The mission was launched in September 2016 and achieved numerous milestones before successfully returning a sample of Bennu's surface material to Earth in September 2023.



## Polycystic Ovary Syndrome

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- Polycystic ovary syndrome (PCOS) is a common hormonal disorder affecting up to 10% of women of childbearing age.
- The disorder stems from an imbalance in hormones governing the menstrual cycle, ovulation, and other bodily functions.
- PCOS occurs due to a combination of genetic and environmental factors. It involves an imbalance in hormones, particularly elevated levels of androgens (male hormones) and insulin resistance.
- The exact cause is still under study, but genetics and lifestyle play significant roles.





## 7.10 1 MAINS & 5 MCQs

**Q1.** *What is the significance of monoclonal antibodies in modern medicine? Discuss their applications, challenges, and the ethical considerations associated with their production and use.*

### Answer

- Monoclonal antibodies (mAbs) are laboratory-produced molecules designed to mimic the immune system's ability to fight off harmful pathogens, such as bacteria and viruses.

### Significance of monoclonal antibodies in modern medicine:

- **Mechanism of Action:** mAbs work by specifically binding to a target antigen, which can be a protein on the surface of a cancer cell, a virus, or an immune checkpoint molecule.
- **Specificity and Selectivity:** Monoclonal antibodies exhibit an extraordinary level of specificity. They are engineered to recognize and interact with a particular target, reducing the risk of off-target effects compared to conventional drugs that may affect multiple processes in the body.

### Applications of Monoclonal Antibodies:

- **Cancer Therapy:** Monoclonal antibodies play a pivotal role in targeted cancer therapies. They can be designed to recognize specific antigens on cancer cells, hindering their growth, signaling the immune system to attack, or delivering toxic payloads directly to cancer cells.
- **Autoimmune Diseases:** In the treatment of autoimmune disorders, mAbs help modulate the immune system's response, reducing inflammation and damage to healthy tissues.

### Monoclonal Antibodies in Diagnosis:

- **ELISA (Enzyme-Linked Immunosorbent Assay):** Monoclonal antibodies are crucial components of ELISA tests used for the detection of antigens or antibodies in various diagnostic applications.
- **Flow Cytometry:** In flow cytometry, mAbs are used to label specific cell populations for analysis, aiding in disease diagnosis and research.
- **Immunohistochemistry:** Monoclonal antibodies are applied to tissue samples to identify specific proteins or antigens, aiding in the diagnosis of diseases such as cancer.

### Challenges and Limitations:

- **Immunogenicity:** Some mAbs, especially those with non-human components, can provoke immune responses in patients, potentially reducing their effectiveness or causing adverse reactions.
- **High Production Costs:** The development and production of mAbs can be expensive, limiting their accessibility to patients, particularly in resource-constrained healthcare systems.
- **Limited Penetration into Certain Tissues:** Monoclonal antibodies may have difficulty penetrating certain tissues or crossing the blood-brain barrier, which can limit their effectiveness in treating diseases that affect these areas.
- The monoclonal antibody is not an authorized treatment for Nipah, and there is no established treatment for the virus. Its safety is confirmed, but its effectiveness remains uncertain. It must be administered in the early stage of the infection.

**Q2. Which of the following statements about patulin is correct?**

1. Patulin is a synthetic chemical used as a food preservative.
2. It is primarily produced by bacteria during the fermentation of fruits.
3. Patulin is a naturally occurring mycotoxin found in some fruits and their processed products.
4. It is commonly used as a flavor enhancer in the food industry.

Select the correct answer using the code given below:

- a) Only statement 1 is correct.
- b) Only statement 2 is correct.
- c) Only statement 3 is correct.
- d) None of the statements are correct.

**Q3. Which of the following statements about comets is correct?**

1. Comets are primarily composed of rock and metal.
2. They have highly circular orbits within the solar system.
3. Comets develop a coma and tails when they approach the Sun.

Select the correct answer using the code given below:

- a) Only Statement 1
- b) Only Statement 2
- c) Only Statement 3
- d) Statements 1 and 3

**Q4. Consider the following statements.**

1. Leptospirosis is a blood infection caused by the Virus Leptospira.

2. Weil's disease, the acute, severe form of leptospirosis, causes the infected individual to become jaundiced (skin and eyes become yellow), develop kidney failure, and bleed.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above.

**Q5. Consider the following statements:**

1. Ferulic acid esterase degrades the natural polymer lignin in plant cell walls by breaking down lignin polymers to release sugars from woody plant parts.
2. PET46 enzyme degrades polyethylene terephthalate and it is extracted from a non-cultured deep-sea microorganism.
3. PET46 is very similar to enzyme, ferulic acid esterase.

How many of the above statements are incorrect?

- a) Only 1
- b) Only 2
- c) All 3
- d) None

**Q6. The term "Vibrio vulnificus" is frequently seen in the news. What is Vibrio vulnificus?**

- a) A type of virus found in coastal waters.
- b) A species of bacteria found in warm coastal waters.
- c) A type of parasite commonly found in seafood.
- d) A fungal infection associated with swimming in freshwater lakes.

ANSWERS: 2) c, 3) c, 4) c, 5) d, 6) b

## 8. CULTURE & HISTORY

### 8.1 SACRED ENSEMBLES OF THE HOYSALAS

#### Context

- Three Hoysala-era temples in Karnataka recently made it to UNESCO's World Heritage List, under the collective entry of 'Sacred Ensembles of the Hoysalas'.



#### About Hoysalas

- Hoysala temples** are known for the rare beauty and finesse of their wall sculptures, and have been described as “art which applies to stone the technique of the ivory worker or the goldsmith”.
- Built in the 12th and 13th centuries**, the three temples selected for the UNESCO list are important not just because they demonstrate their builders' superior skill, but also because they narrate the tale of the politics that shaped them.

#### Which are the three Hoysala temples selected for the UNESCO list?

- The three temples include the **Chennakeshava temple** in Belur, the **Hoysaleswara Temple** in Halebidu, and the **Keshava Temple** in Somanathapura.
- The announcement was made by UNESCO, during the **World Heritage Committee's 45th session in Riyadh**, Saudi Arabia.
- India submitted the nomination dossier for the temples in January 2022.

#### Who were the Hoysalas?

- The Hoysalas held power in **Karnataka from the 10th century to the 14th century**.
- The dynasty began as provincial governors under the Western Chalukyas, but as the two dominant empires of the South, the Western Chalukyas and the Cholas, crumbled, the Hoysalas established themselves as rulers.
- Two of the temples that made it to the UNESCO list are located in cities that served as the capital of the Hoysalas – **earlier Belur, and then Halebidu (or Dwarasamudra)**.

#### When were the Sacred Ensembles of the Hoysalas built?

- The **Chennakeshava temple**, dedicated to Lord Vishnu, was consecrated around **1117 AD** by the mighty **Hoysala king Vishnuvardhana**, to mark his victories against the Cholas. It is thus also called the Vijaya Narayana temple.
- The other Vaishnava shrine, the Kesava temple, was built in **Somanathapura in 1268** by **Somanatha**, a general of Hoysala King Narasimha III.
- The **Hoysaleswara temple in Halebidu** is believed to be the largest Shiva temple built by the Hoysalas, and is dated to the 12th century.

#### What makes Hoysala architecture stand out?

- One notable feature of Hoysala architecture** is the use of soapstone, a malleable stone that is easy to carve. This is one of the reasons behind the

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abundance of intricate sculptures one can see on the temple walls.

- **The sculptures include animals**, scenes of daily life, as well as depictions from the epics and the Puranas.
  - The jewellery, headgear, clothes, etc. of the detailed sculptures give an idea of the society of the times.
- **Another special feature of Hoysala architecture** is the unique confluence of styles.
- **“Hoysala architecture is an amalgamation of three distinctive styles**– the mainstream Dravidian architecture as represented in the Pallava and Chola temples; the Vesara style, the variant of the Dravida style that emerged in the Chalukya and Rashtrakuta temples; and then the North Indian Nagara style.
- **The political dimension** to this is the various military expeditions that the Hoysalas undertook, which led them to different regions from where they brought back masons, sculptors, architects who could visualise and actualise such temples.”
- **The temples are generally built on stellate (star-shaped) platforms**, and have several structures inside the complex. The walls and pillars are covered in beautiful sculptures that have “rich narrative and descriptive dimensions”.
- **An interesting feature of Hoysala temples** is that they are ‘signed’ – the sculptors, masons leave behind their names, and sometimes a few more details.
- Also, these **Vaishnava and Shaivya shrines** were built at the time Jainism was prominent in the region, and thus mark a turn towards Hinduism.

#### Why do no Hoysala buildings other than temples survive?

- **No known monuments other than temples**, like palaces or forts, survive from the Hoysala period.
- **This was not unique to the Hoysalas.** “This is one of the paradoxes of the early medieval and medieval non-Islamic world, because the non-temple buildings were all built in either mud or brick or wood [and not stone]. So, except for some ruins in Hampi, nothing has survived in the form of architecture.

## 8.2 ADI SHANKARACHARYA

### Context

- Madhya Pradesh CM Shivraj Singh Chauhan, on Thursday, inaugurated the grand statue of Adi Shankaracharya in Omkareshwar.

### About Adi Shankaracharya

- Adi Shankaracharya, also known as Shankara Bhagavatpada, was a renowned Indian philosopher and theologian who lived in the early 8th century CE. He is credited with consolidating the doctrine of Advaita Vedanta, a major school of thought in Hindu philosophy.

#### Early Life:

- **Birth:** Adi Shankaracharya is believed to have been born in the early 8th century CE, around 788 CE, in Kaladi, present-day Kerala, India.
- **Childhood and Education:** According to traditional accounts, Shankara showed remarkable intelligence from a young age. He

is said to have mastered the Vedas and other scriptures at an early age.

#### Philosophical Contributions:

- **Advaita Vedanta:** Adi Shankaracharya is best known for the propagation of Advaita Vedanta, a non-dualistic school of Vedanta philosophy. According to Advaita, the ultimate reality (Brahman) is non-dual and indivisible.
- **Commentaries:** He wrote extensive commentaries on major Hindu scriptures, including the Upanishads, the Bhagavad Gita, and the Brahma Sutras. His commentaries sought to establish the non-dualistic interpretation of these texts.
- **Maya:** Shankara emphasized the concept of Maya, the illusory nature of the world, asserting that the perceived diversity is a result of ignorance, and the ultimate reality is beyond the dualities of the material world.



- **Jnana Yoga:** Shankara emphasized the path of knowledge (Jnana Yoga) as a means to attain spiritual liberation (moksha).

#### Travel and Disputes:

- **Pilgrimage:** Adi Shankara is said to have undertaken extensive travels (digvijaya) across India to engage in philosophical debates, propagate Advaita Vedanta, and unify various schools of thought.
- **Debates:** Shankara engaged in debates with scholars representing different philosophical traditions, including those following Mimamsa, Nyaya, and Buddhism. These debates are recounted in hagiographical accounts of his life.
- **Establishment of Mathas:** Shankara is believed to have established four monastic centers (mathas) in different parts of India: Sringeri in the south, Dwarka in the west, Badrinath in the north, and Puri in the east.

#### Bhakti and Devotional Works:

- **Stotras and Hymns:** In addition to his philosophical works, Shankara composed devotional hymns and stotras that are revered in Hindu tradition. Examples include the "Bhaja Govindam" and the "Soundarya Lahari."
- **Promotion of Bhakti:** While Shankara emphasized Jnana Yoga, he also recognized

the value of Bhakti (devotion) as a means of spiritual practice.

#### Legacy:

- **Unifying Hinduism:** Adi Shankaracharya is often credited with revitalizing and unifying Hinduism during a period of intellectual and sectarian diversity.
- **Mathas and Successors:** The mathas he established continue to be important centers of Advaita Vedanta, and his disciples, known as Shankaracharyas, are spiritual leaders who guide these institutions.
- **Influence Beyond India:** Shankara's philosophical ideas have had a profound influence not only in India but also among scholars and seekers of truth worldwide.

#### Writings:

- **Major Works:** Some of Adi Shankaracharya's major works include commentaries on the Upanishads (Bhashyas), the Bhagavad Gita, the Brahma Sutras, and independent philosophical treatises like the "Vivekachudamani."
- **Bhaja Govindam:** This work, consisting of a series of verses, is a devotional composition that emphasizes the impermanence of worldly pursuits and the importance of spiritual realization.

## 8.3 SHORT ARTICLES

### **Pulikkali**

#### Context

- Thrissur in Kerala recently reverberated with the energetic beats of drums and the roars of a different kind – those of 'human tigers and leopards'.

#### Details

- **More than 250 enthusiastic participants**, adorned with vibrant stripes and spots, transformed the city into a spectacle of color and tradition **during the exhilarating Pulikkali festival**.
- This rollicking show served as the **grand finale to the Onam celebrations**, creating a carnivalesque atmosphere in Thrissur.

#### **About Pulikkali**

- It also known as "**Puli Kali**" or "**Puli Kettu**," is a vibrant and **colorful traditional folk art** form and cultural event that is celebrated primarily in the Indian state of Kerala.
- It translates to "**Tiger Play**" or "**Tiger Dance**," and it involves performers painting their bodies to resemble tigers and leopards and dancing in the streets to the beat of traditional percussion instruments.
- One does not need any special training to be able to do the tiger dance.
- It is just that one **should be able to groove to the beats**. Then there are unique steps.

- **Origin:**The origin of Pulikkali dates **back to over 200 years**, when the **Maharaja Rama Varma SakthanThampuram**, the then Maharaja of Cochin, is said to have introduced the folk art, who wanted to celebrate Onam with a dance that reflected the wild and macho spirit of the force.

*A tradition that is believed to be over 200 years old, the pulikkali has evolved with time. Preparations begin early on in the day when the men get their bodies painted.*

### Significance of Pulikkali

- **Cultural impacts:** It unites people from different backgrounds and encourages them to actively participate in its festivities, promoting harmony and respect among individuals.
  - **The festival holds great significance for Malayalis**, as it commemorates the homecoming of their mythical King Mahabali, known for his benevolence and just rule.
- **Economic Impact:** The influx of tourists during Onam brings in a significant amount of money into Kerala. The tourism industry experiences a boom as people from different parts of the world come to witness and be a part of the celebrations.
  - **This leads to increased bookings in hotels, resorts, and homestays**, generating substantial revenue for the hospitality sector.
  - There is also a high demand for local handicrafts during this time, **benefiting artisans** and providing **employment opportunities**.

## **Kokborok Language**

### Context

- The central issue revolves around the script used for Kokborok, which has been a decades-old debate in Tripura.

### Details:

- Over 260 people were detained in Tripura on Monday during a 12-hour statewide strike called by the **Twipra Students' Federation**

(TSF) to press for the introduction of Roman script for Kokborok, state's indigenous lingua franca, and other demands.

- The government is scared of the bandh **called by the TSF for Roman script in Kokborok language**. They're trying in vain to stop the tribal movement using state power.
- This movement will not stop; this fire won't die. How many tribals need to be arrested for Roman script to be recognised for Kokborok? Lakhs of tribals, not thousands, are ready to be arrested.

### About Kokborok Language:

#### About

- It also known as **Tripuri**, is an **indigenous Tibeto-Burman language** spoken primarily in the **Indian state of Tripura** and neighbouring areas of **Bangladesh**.

#### Historical significance

- It has a rich historical heritage and has been **attested since at least the 1st century AD**. The historical records of Tripuri kings were originally written in Kokborok using the "**Koloma**" script.
- Over time, Kokborok transitioned from being a royal language during the rule of the Tripuri kings to a common people's dialect.

#### Features

- Kokborok has a **diverse vocabulary** that reflects the culture, environment, and traditions of the Tripuri people.
- It includes words related to **agriculture, rituals, food, clothing, and more**. Additionally, there may be borrowed words from neighboring languages and cultures.

#### Tradition

- Kokborok has a **rich oral tradition with folktales, myths, and legends** passed down through generations.
- In recent years, there has been a growing body of written literature in **Kokborok, including poetry, short stories, and even newspapers**.

## Sanatan Dharma

### Context

- **Sanatan Dharma** is a Sanskrit term that can be loosely translated as “eternal religion”. Since the 19th Century, it has been used to evoke a certain homogeneity in Hinduism.

### Details

- Sanatan Dharma, equated by DMK leader Udhayanidhi Stalin to “mosquitoes, dengue, malaria, and corona”, is often seen as being synonymous with Hinduism. As several BJP leaders expressed outrage, party president J P Nadda described Udhayanidhi’s statement as an attack on “our religion”.
- Mythologist and author Devdutt Pattanaik posted on X, formerly Twitter, that the word “sanatan”, meaning eternal, does not appear in the Vedas.

### Etymology and roots of Sanatan Dharma:

- Sanatan Dharma is a Sanskrit term that can be translated variously as “eternal religion” or “eternal law”, “unshakeable, venerable order”, or “ancient and continuing guideline”.
- **History:**The word sanatan started being used in the Bhagavad Gita, and refers to knowledge of the soul, which is eternal,” Pattanaik said in a video he posted. “One can say that Sanatan Dharma refers to eternal religions which believe in soul and rebirth.

### Sanatan Dharma in the 19th century

- Historian John Zavos in his 2001 article, ‘*Defending Hindu Tradition: Sanatana Dharma as a symbol of orthodoxy in colonial India*’ noted that the term gained popularity in the late 19th century with the emergence of various sabhas designed to promote Sanatan Dharma.
- **The Sanatan Dharma** at that time came to be understood most popularly as a signifier of **Hindu orthodoxy** that was a reaction to the reform movements being carried out by missionaries and reformers such as the **Brahmo Samaj and Arya Samaj**. This he believed was a political necessity of the period.

- **In Punjab**, for instance, modern Sanatanist movements trace their growth to the career of **Pandit Shraddha Ram**.
  - It is believed that when **Dayanand Saraswati, who founded the Arya Samaj**, toured Punjab in his efforts to reform Hinduism, Shraddha Ram followed in his wake to strengthen the forces of orthodoxy.
- The national organisation, ‘**Bharat Dharma Mahamandal**’ that also came up during this period stated as its first objective, “**to promote Hindu religious education in accordance with the Sanatana Dharma**”. The term was also used by the Hindu Mahasabha to refer to the Hindu religion.

*The idea that Sanatan Dharma was Hindu orthodoxy, and that it was in opposition to reform was entrenched in the social identities of late 19th century India.*



## Poila Baisakh

### Context

- The West Bengal Legislative Assembly passed a resolution declaring ‘Poila Baisakh’, the first day of the Bengali calendar, as ‘Bangla Dibas’ or West Bengal Foundation Day.

### Details

- **The resolution – under Rule 169 proposing to observe Poila Baisakh as ‘Bangla Diwas’** and Nobel laureate Rabindranath Tagore’s ‘Banglar Mat, Banglar Jol’ (Bengal’s soil, Bengal’s Water) as the state song – was passed with 167 members voting in favour of it in a House of 294 members.
- **On the other hand, 62 BJP MLAs** – who want to observe the state’s foundation day on June 20 – voted against the resolution. Notably, on June 20, 1947, MLAs from West Bengal voted for partition, which was celebrated as Bengal Day.
- People of Bengal don’t support June 20, which is synonymous with violence and bloodshed which marked partition as the state foundation day.

### About Poila Baisakh:

- **Poila Baisakh** is an important festival celebrated by Bengali communities across West Bengal, Tripura, Jharkhand, and Assam. It is also celebrated in Bangladesh.
- **It signifies the Bengali New Year and in 2023** it was celebrated on April 15th.
- The famous Bengali Poila is celebrated on the first day of the first month of the Bengali calendar, which is known as Baisakhi.
- Every year in the middle of April, all Bengalis around the world celebrate this festival.

#### Significance of 20<sup>th</sup> June:

- On 20 June 1947, the Bengal Legislative Assembly met to decide the future of the Bengal Province, as between being a United Bengal within India or Pakistan or divided into East Bengal and West Bengal as the home lands for the Bengali Muslims and the Bengali Hindus respectively.
- At the preliminary joint session, the assembly decided by 120-90 that it should remain united if it joined the new Constituent Assembly of Pakistan.
- Later, a separate meeting of legislators from West Bengal decided by 58-21 that the province should be partitioned and that West Bengal should join the existing Constituent Assembly of India. In another separate meeting of legislators from
- East Bengal, it was decided by 106-35 that the province should not be partitioned and by 107-34 that East Bengal should join Pakistan in the event of Partition.
- On 6 July 1947, the Sylhet referendum decided to sever Sylhet from Assam and merge it into East Bengal.

## **Konark Wheel**

### Context

- Prime Minister Narendra Modi chose a wall depicting the historic Konark Wheel of Odisha's Sun Temple as the backdrop for his welcome handshake with world leaders at the G20 Summit venue.

### About Konark Wheel

- **The Konark Wheel**, also known as the **Konark Chakra**, is an iconic symbol associated with the Konark Temple.
- **Symbolizes:** The wheel symbolizes the Sun God's chariot and serves as a representation of the cosmic cycle and the concept of time in Hindu mythology.
- **Designing:** The Konark Temple is designed in the shape of a massive chariot drawn by seven spirited horses. The temple is adorned with 12 pairs of gorgeously decorated wheels at its base, making a total of 24 wheels.
- **Features: Each wheel has a diameter of 9 feet 9 inches** and features 8 wider spokes and 8 thinner spokes.
  - These wheels are positioned in various parts of the temple, with 6 on either side of the main temple, 4 on each side of the Mukhasala (front assembly hall), and 2 on each side of the steps at the eastern front.
  - The Konark Wheel is adorned with intricately carved spokes and other ornamental details.
  - It is a marvel of ancient stone carving and craftsmanship, reflecting the technical and artistic expertise of the artisans of that era.

### About Konark Temple:

#### **Location**

- It is located in Konark, a town in the **Puri district of Odisha**.

#### **Constructed by**

- It was constructed in the **13th century during the reign of King Narasimhadeva I of the Eastern Ganga Dynasty**.

#### **Architecture**

- The Konark Temple is renowned for its **stunning and intricate architecture**.
- It is **designed in the shape of a colossal chariot** with 12 pairs of stone-carved wheels, representing the chariot of the Sun God.
- The **temple is built using Khondalite rocks**, which are locally available and intricately carved to depict various mythological and religious themes.

#### **Significance**



- Various theories exist regarding the significance of the Konark Wheel.
- **According to one interpretation**, the seven horses represent the days of the week, the 12 pairs of wheels symbolize the 12 months of the year, and the 24 wheels represent the 24 hours of a day, with the 8 major spokes denoting three-hour periods (prahars) of a day.
- **Another interpretation suggests** that the wheels symbolize the cycle of creation, preservation, and realization, akin to the "Wheel of Life."

## Nataraja Artistry of Lord Shiva

### Context

- Greeting G20 leaders in front of Bharat Mandapam in New Delhi's Pragati Maidan this weekend will be a magnificent 27-foot Nataraja, the tallest statue of Lord Shiva's dancing form in the world.

### About Nataraja Statue

- The 27-foot-tall Nataraja statue is **crafted from 'Ashtadhatu,' an eight-metal alloy**, making it one of the world's tallest statues depicting Lord Shiva in his dancing form.
- **Renowned sculptor Radhakrishnan Sthapaty**, hailing from Swami Malai in Tamil Nadu, created this masterpiece, weighing approximately 18 tonnes.

### Inspiration of designing:

- The design of the Nataraja statue draws inspiration **from three revered Nataraja idols in prominent South Indian temples:**
  - Thillai Nataraja Temple in Chidambaram.
  - Uma Maheswarar Temple in Konerirajapuram.
  - Brihadeeswara (Big) Temple in Thanjavur, a UNESCO World Heritage Site.

### Evolution of statue:

- While Shiva has been worshiped for centuries, the portrayal of Shiva as Nataraja, or the Lord of Dance, emerged in sculpture during the 5th century AD.
- However, it was under the Cholas that the Nataraja form gained iconic status, particularly in bronze sculptures.

### Symbolism of Nataraja

- Nataraja's dance symbolizes the balance between opposites - creation and destruction, chaos and order, birth and death.
- It represents the eternal cycle of life, death, and rebirth.
- Shiva's Nataraja form also signifies the ultimate goal of life - liberation (moksha) from the cycle of birth and death.

### G20 Leaders' Summit:

- The presence of the Nataraja statue at the venue of the G20 leaders' summit adds a unique cultural dimension to the event.
- It showcases India's commitment to promoting its cultural heritage and spirituality on the global stage, welcoming world leaders with a symbol that embodies profound philosophical and spiritual concepts.

### Tourism and Artistic Appeal:

- Statues like the 27-foot Nataraja have the potential to become major tourist attractions and points of interest in the city.
- It also demonstrates the significance of art and sculpture in India and highlights the country's artistic prowess.



## TRIFED's Artisanal Treasures

### Context

- The G20 Summit witnessed a remarkable showcase of India's rich tribal heritage and craftsmanship, curated and presented by TRIFED (Tribal Cooperative Marketing Development Federation of India), Ministry of Tribal Affairs.

### Details

- Several exquisite products, handcrafted by tribal artisans from various regions of India, captured the attention and admiration of delegates from around the world.
- Acknowledged for his outstanding contributions, Shri Pareshbhai Jayantibhai Rathwa showcased his remarkable talent with a live demonstration of Pithora Art at the G20 Crafts Bazaar.

Among the array of offerings, the following articles were the most reached and generated immense interest among the delegates:

- **Longpi Pottery:** Named after the village of Longpi in Manipur, the Tangkhul Naga tribes practice this exceptional pottery style. Unlike most pottery, Longpi does not resort to the potter's wheel. All shaping is done with the hand and with the help of moulds.
- **Chhattisgarh Wind Flutes:** Curated by the Gond Tribe of Bastar in Chhattisgarh, the 'Sulur' bamboo wind flute stands out as a unique musical creation. Unlike traditional flutes, it produces melodies through a simple one-handed twirl.
- **Gond Paintings:** The Gond tribe's artistic brilliance shines through their intricate paintings, reflecting their deep connection to nature and tradition. These paintings tell stories that resonate with art enthusiasts worldwide. Gond artists have ingeniously adapted to contemporary mediums, employing unique techniques.
- **Gujarat Hangings:** Curated by the Bhil & Patelia Tribe in Dahod, Gujarat, Gujarati Wall Hangings, much loved for their wall-enhancing charm, stem from an ancient Gujarat art form. Crafted by the Bhil tribes of Western Gujarat, these hangings, initially dolls and cradle birds, feature cotton cloth and recycled materials.
- **Sheep Wool Stoles:** Originally featuring monochromatic schemes of white, black, and grey, the world of tribal craftsmanship is witnessing a transformation. Dual-colored designs now dominate, mirroring evolving market preferences.

## Santiniketan

### Context

- Santiniketan, a town established by Nobel laureate Rabindranath Tagore in West Bengal's Birbhum district, has been added to UNESCO's World Heritage List.

### Details

- Santiniketan is the place where Rabindranath Tagore laid the foundations of Visva-Bharati

University, which is known for its unique approach to education, emphasizing art, culture, and the integration of human values.

- Santiniketan's inclusion on the **UNESCO list makes it India's 41st World Heritage Site**, showcasing the rich cultural and historical diversity of the country.
- The efforts to have Santiniketan included in the **World Heritage List date back to 2010**. The recent proposal for its nomination began in the financial year 2020-21.
- **The Archaeological Survey of India (ASI)** has been actively involved in the restoration of several structures in Santiniketan in recent years.

### About Santiniketan:

#### About

- Santiniketan is a renowned cultural and educational hub located in the **Birbhum district of West Bengal, India**.

#### Meaning of the term

- **Santiniketan translates to "Abode of Peace"** and was founded by Tagore as an experiment in education and art, which continues to influence generations of artists, scholars, and thinkers.

#### Significance

- It holds a **special place in Indian history and culture** due to its association with Rabindranath Tagore, a Nobel laureate poet, philosopher, and polymath.

#### History

- **Santiniketan was established in 1901 when Rabindranath Tagore** moved to this region, inspired by the serene and tranquil environment.

#### Teachings

- Tagore was dissatisfied with the **conventional educational system** and wanted to create an institution where education would be more **holistic, integrating arts, culture, and nature**.
- Under his guidance, Santiniketan developed into a **unique educational and cultural institution**.

#### Cultural significance

- Santiniketan has been a **crucible for art and culture in India**.

- It was instrumental in the development of the **Bengal School of Art**, a significant movement in Indian art. The school emphasized traditional Indian art forms, nature, and the spirit of the land.
- **The annual Poush Mela and Basanta Utsav (Holi festival)** celebrations at Santiniketan attract people from all over India. These events showcase the rich cultural heritage of India, with **performances of music, dance, theater, and more.**

## Sir M. Visvesvaraya

### Context

- Engineer's Day is celebrated in India every year to commemorate the achievements of Bharat Ratna Sir Mokshagundam Vishveswaraya, or M Visvesvaraya.

### About Sir M. Visvesvaraya:

- Sir M Visvesvaraya is regarded as one of the foremost civil engineers in the country.
- **Birth and Family Background:** Visvesvaraya was born on September 15, 1861, in Muddenahalli, a small village in the state of Karnataka, India. He was born into a Telugu-speaking family.
- **Education:** He completed his early education in Chikballapur and Bangalore. Later, he pursued a degree in civil engineering from the prestigious College of Engineering, Pune.

### His contributions:

#### Engineering Contributions

- **Irrigation Projects:** Visvesvaraya's career started with the construction of irrigation systems in India. He designed and implemented various irrigation projects, including the famous Krishna Raja Sagara dam and Brindavan Gardens in Karnataka.
- **Hydroelectric Power Generation:** He played a pivotal role in the development of hydroelectric power in India.
- **Mysore State Planning:** As the Dewan (Prime Minister) of the princely state of Mysore from 1912 to 1918, Visvesvaraya implemented several progressive policies, including planned

urban development, industrialization, and education reforms.

#### Legacy and Achievements

- **Engineer's Day:** In India, Engineer's Day is celebrated on his birthday, September 15th, to honor his remarkable contributions to engineering and nation-building.
- **Bharat Ratna:** In 1955, he was awarded India's highest civilian honor, the Bharat Ratna, in recognition of his exceptional contributions to the nation.
- **Author and Scholar:** Visvesvaraya was a prolific writer and authored several books, including "Reconstructing India" and "Planned Economy for India."

#### Personal Qualities

- **Work Ethic:** Visvesvaraya was known for his unwavering commitment to his work, often putting in long hours and showing meticulous attention to detail.
- **Integrity:** He was a man of utmost integrity and ethics, which earned him the respect and trust of his peers and the public.
- **Innovation:** His engineering solutions were innovative and focused on sustainable development, which set the foundation for modern India's infrastructure.

## Nuakhai

### Context

- President Droupadi Murmu greeted citizens on the festival of Nuakhai and wished for the prosperity of the country and its people.

### Details

- The major agrarian festival of this region is being celebrated in every nook and corner collectively with much fanfare and religious fervour.
- People offer the newly harvested Nabanha crop to their respective presiding deities at a stipulated moment this morning.
- While Goddess Samaleswari is being worshipped in Sambalpur, Pateneswari in Bolangiri, Sureshwari in Sonapur, Sekharbasini in Sundargarh and Manikeswari in Kalahandi are offered the new crop.

- After providing the Nabanha, people relish different delicacies prepared from the newly harvested crop.

### About Nuakhai:

#### About

- Nuakhai is a festival celebrated in the western districts of Odisha where the first produce of the field is offered to the goddess and people seek the blessings of elders in each household.
- The festival is mostly celebrated in Sambalpur, Bargarh, Jharsuguda, Bolangir, Kalahandi, Nuapada, Nabarangpur, Deogarh, and Sundergarh.

#### Origin

- Nuakhai has ancient roots and is believed to date back to the Vedic period.
- The word "Nua" means "new," and "Khai" means "food."
- The festival is named so because it involves the offering of newly harvested rice to the presiding deity, Maa Samaleswari, the goddess of fertility and prosperity.

#### Celebrated during

- Nuakhai is celebrated on the Panchami Tithi (fifth day) of the lunar fortnight in the Hindu month of Bhadrap.
- It typically falls in the month of August or September, marking the end of the monsoon season and the beginning of the harvest season.

#### Regional variations

- While Nuakhai is primarily associated with Odisha, variations of the festival are also celebrated in neighboring states like Chhattisgarh and Jharkhand, where it is known as "Nuakhai Parab" or "Nabanno."

#### Social significance

- Nuakhai is not just a religious festival but also a social and cultural celebration. It strengthens community bonds, promotes harmony, and instills a sense of unity among people, especially in rural areas.

#### Agricultural importance

- The festival holds immense agricultural importance as it marks the culmination of the

sowing season and the beginning of the harvest season.

- It is a way for farmers to acknowledge the divine blessings for a prosperous harvest and to express gratitude for the food they will reap in the coming months.

## **Sarcophagus**

### Context

- Palestinian workers in the Gaza Strip have found dozens of ancient graves, including two sarcophagi made of lead, in a cemetery dating back about 2,000 years to the Roman Empire.

### Details

- Archaeologists described the site as the largest cemetery discovered in Gaza.
- Workers found the site in 2022 during the construction of an Egyptian-funded housing project near Jabaliya, in the northern Gaza Strip.
- Since then, crews have worked to excavate the 2,700-square-metre site with the support of French experts.
- Now, what was once an inconspicuous construction lot – surrounded by a grove of nondescript blocks of flats – has become a gold mine for archaeologists looking to understand more about the Gaza Strip.

### About Sarcophagus:

#### Introduction

- Sarcophagi, which means "flesh-eater" in Greek, were originally stone coffins designed to protect and honor the deceased.
- They have played a crucial role in understanding the cultures that created them, providing insights into religious beliefs, social hierarchies, and artistic traditions.

#### Ancient Egyptian Sarcophagi

- Ancient Egyptians are famous for their intricate sarcophagi, often made of materials like limestone or granite.
- These coffins were adorned with hieroglyphs, images of gods, and protective spells.
- The most well-known example is the sarcophagus of King Tutankhamun, which contained his mummified remains and treasures.



### Roman Sarcophagi

- Roman sarcophagi, popular during the Roman Empire, featured a wide range of themes, including mythology, scenes from daily life, and historical events.
- The Sarcophagus of the Spouses, a famous Etruscan-Roman example, depicts a married couple reclining together.

### Greek Sarcophagi

- Greek sarcophagi often featured intricate relief sculptures, showcasing mythological scenes or representations of the deceased's life.
- The Alexander Sarcophagus, discovered in Sidon, Lebanon, is an exceptional example illustrating Alexander the Great's conquests.

## Shore Temple

### Context

- The historic Shore Temple in Mamallapuram, a renowned UNESCO World Heritage Site, has achieved a significant milestone by becoming India's first Green Energy Archaeological Site.

### Details:

- This has been made possible through the successful implementation of the Green Heritage Project, a collaborative initiative between the Renault Nissan Technology & Business Centre India (Renault Nissan Tech) and Hand in Hand India (HiH).
- As a result of the Green Heritage Project's endeavors, the Shore Temple will now be illuminated using clean and sustainable solar power.
- Three solar plants, each with a capacity of 10 kilowatts, have been strategically installed to harness the abundant solar energy in the region.

- Notably, any surplus energy generated by these solar plants will be channeled back into the grid, ensuring that it contributes to future energy needs while minimizing environmental impact.

### About Shore Temple:

#### About

- The Shore Temple is a magnificent and historically significant temple located in Mahabalipuram, a coastal town in the southern Indian state of Tamil Nadu.
- This temple is a UNESCO World Heritage Site and is considered one of the finest examples of ancient Dravidian architecture.

#### Origin

- The Shore Temple was built during the reign of the Pallava dynasty in the 7th century AD. It is part of a complex of temples in Mahabalipuram, a major port city during the Pallava dynasty's rule.

#### Patronage

- The temple was commissioned by Narasimhavarman II, also known as Rajasimha, a prominent Pallava king. It was dedicated to Lord Shiva and served as a prominent pilgrimage site for devotees of the deity.

#### Architectural style

- The temple is a prime example of the Dravidian architectural style, characterized by its pyramid-shaped towers (shikharas), intricate carvings, and use of granite stones.

#### Significance

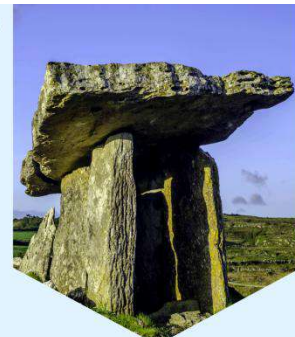
- **UNESCO World Heritage Site:** The Shore Temple, along with other monuments in Mahabalipuram, was designated as a UNESCO World Heritage Site in 1984, recognizing its cultural and historical significance.

## 8.4 SNIPPETS

### Megalithic Dolmen Site

APTI PLUS

- The site at Mudu Konaje was first discovered and reported by historian and researcher PundikaiGanapayya Bhat in the 1980s.
- It's described as the largest megalithic dolmen site in the area, featuring nine dolmens on the slope of a stone hill.
- Unfortunately, only two dolmens remain intact, while the rest of the burials have been ruined over time.



### Phanigiri Artefacts

APTI PLUS

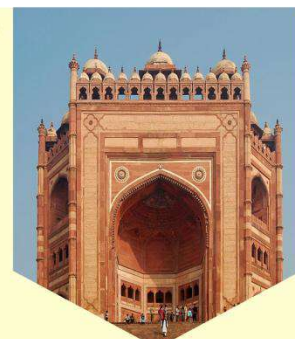
- The Phanigiri artefacts were initially discovered in 1942 and later rediscovered in 2003.
- The Phanigiri Buddhist site, located in Suryapet district, Telangana, is considered one of the most significant finds in Buddhist iconography in recent times.
- Phanigiri Gutta, where most of the discoveries related to early Buddhism were made, is considered a narrative-changing find. The artefacts provide insights into the evolution of Buddhism in the region during that period.



### Fatehpur Sikri

APTI PLUS

- Fatehpur Sikri, located near Agra, is a fortified city that served as the Mughal Empire's capital in the late 16th century.
- However, the city was only used for 14 years before being abandoned completely around the turn of the century.
- This historic city is now a UNESCO World Heritage Site and one of Agra's most popular tourist destinations.
- Fatehpur Sikri, founded in 1571 by Mughal Emperor Akbar, is considered his crowning architectural achievement.



### Mewar School of Painting

APTI PLUS

- It flourished between 1600 and 1700 CE and is most representative of the Hindu Rajput courts.
- Unlike the specificity of Rajasthani schools that emerged and flourished in precise territorial kingdoms and courts of their respective kings, Malwa School defies a precise centre for its origin and instead suggests a vast territory of Central India.
- Malwa paintings show a fondness for rigorously flat compositions, black and chocolate-brown backgrounds, figures shown against a solid colour patch, and architecture painted in lively colour. This conservative style disappeared after the close of the 17th century.
- The school's most appealing features are a primitive charm and a simple childlike vision.



## 8.5 1 MAINS & 5 MCQs

**Q1. What are the core concepts of 'Sanatan Dharma,' and how did it gain prominence in the late 19th century within the socio-religious context of colonial India?**

### Introduction

- 'Sanatan Dharma' is a term often used to refer to what is commonly known as Hinduism, although the term itself translates to "eternal religion" or "eternal order." The core concepts of Sanatan Dharma are deeply rooted in ancient Indian scriptures and philosophical traditions.

### Body

- Eternal Principles (Dharma): Dharma:** Dharma, often translated as duty or righteousness, is a central concept. It refers to the ethical and moral duties individuals must follow to lead a righteous and harmonious life. Dharma is considered the foundation of Sanatan Dharma.
- Cyclical Nature of Existence: Samsara:** Sanatan Dharma acknowledges the concept of Samsara, the cycle of birth, death, and rebirth. This cycle is driven by the law of karma, where one's actions in previous lives influence the circumstances of the current life.
- Moksha (Liberation): Moksha:** The ultimate goal in Sanatan Dharma is to attain Moksha, liberation from the cycle of rebirth. It is achieved through self-realization, spiritual knowledge, and the dissolution of individual identity into the cosmic consciousness (Brahman).
- Brahman and Atman: Brahman:** Brahman is the ultimate, unchanging reality, and the source of all existence. It is the cosmic, infinite, and formless principle that underlies the diversity of the universe.
  - Atman:** Atman refers to the individual soul or self. The realization of the unity of Atman with Brahman is a fundamental

aspect of spiritual realization in Sanatan Dharma.

### Sanatan Dharma gained prominence in response to various socio-religious and political factors

- Colonial Impact: Colonial Suppression:** The colonial period saw attempts to marginalize indigenous cultures and religions. The imposition of Western education and the denigration of traditional practices led to a reassertion of cultural and religious identity.
- Revivalist Movements: Arya Samaj:** Founded by Swami Dayananda Saraswati in 1875, Arya Samaj aimed at reforming and rejuvenating Hinduism. It advocated a return to the Vedas, rejection of idol worship, and social reforms.
  - Ramakrishna Mission:** Swami Vivekananda, a disciple of Ramakrishna Paramahansa, played a crucial role in presenting Hindu philosophy at the Parliament of World Religions in Chicago in 1893. His teachings emphasized the universality of religious truths.
- Cultural Nationalism: Promotion of Indian Culture:** As a response to colonial rule, there was a resurgence of pride in Indian culture and heritage. Leaders like Bankim Chandra Chattopadhyay and Swami Vivekananda emphasized the cultural and spiritual richness of India.
  - Socio religious Reforms:** Social reform movements, such as those led by Raja Ram Mohan Roy, sought to eliminate social evils and promote a more inclusive and progressive interpretation of Hinduism.

### Conclusion

- The late 19th-century resurgence of Sanatan Dharma can be seen as part of a broader movement for cultural and religious revival in response to colonial challenges. It not only preserved and promoted traditional values but also presented them in a way that

addressed contemporary concerns and engaged with the global discourse on

spirituality and philosophy.

**Q2. What is the primary theme and significance of the traditional Indian festival known as "Puli Kali"?**

1. Puli Kali involves body painting and dance to resemble tigers and leopards.
2. It is celebrated in Kerala as part of the Onam festival.
3. Puli Kali is primarily a religious ritual associated with harvest festivals.

**Select the correct option using the code given below:**

- (a) Only Statement 1 is correct.
- (b) Statements 1 and 2 are correct.
- (c) Statements 2 and 2 are correct.
- (d) All three statements are correct.

**Q3. Which of the following statements about Kokborok is correct?**

1. Kokborok is an Indo-Aryan language primarily spoken in Tripura.
2. The Kokborok language uses the Bengali script for writing.
3. Kokborok is related to the Tibeto-Burman language family.

**Select the correct answer using the code given below:**

- (a) Only statement 1 is correct.
- (b) Only statement 2 is correct.
- (c) Only statement 3 is correct.
- (d) Statements 2 and 3 are correct.

**Q4. What is a defining characteristic of megalithic burials in the context of the megalithic culture?**

- (a) Use of hieroglyphic inscriptions
- (b) Construction of stone circles
- (c) Erection of large stone slabs known as orthostats

- (d) Creation of elaborate underground tombs

**Q5. Consider the following statements regarding the Konark Wheel (Konark Chakra):**

1. The Konark Sun temple stands on a base of a total of 24 intricately carved wheels, 12 on each side.
2. It symbolizes the chariot of the Sun God, Surya, and is a representation of the cosmic cycle and time in Hindu mythology.
3. The Konark Wheel is made of bronze and is known for its intricate carvings.

**Which of the statements above are correct?**

- (a) 1 and 2
- (b) 2 and 3
- (c) 3 and 4
- (d) 1 and 4

**Q6. In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:**

**Assertion (A):** The Shore Temple is a magnificent and historically significant temple located in Mahabalipuram, a coastal town in the southern Indian state of Tamil Nadu.

**Reason (R):** This temple is a UNESCO World Heritage Site and is considered one of the finest examples of ancient Dravidian architecture.

- (a) A is true but R is false.
- (b) Both A and R are true and R is the correct explanation of A.
- (c) A is false but R is true.
- (d) Both A and R are true but R is not the correct explanation of A.

ANSWERS: 2) b, 3) c, 4) c, 5) a, 6) d

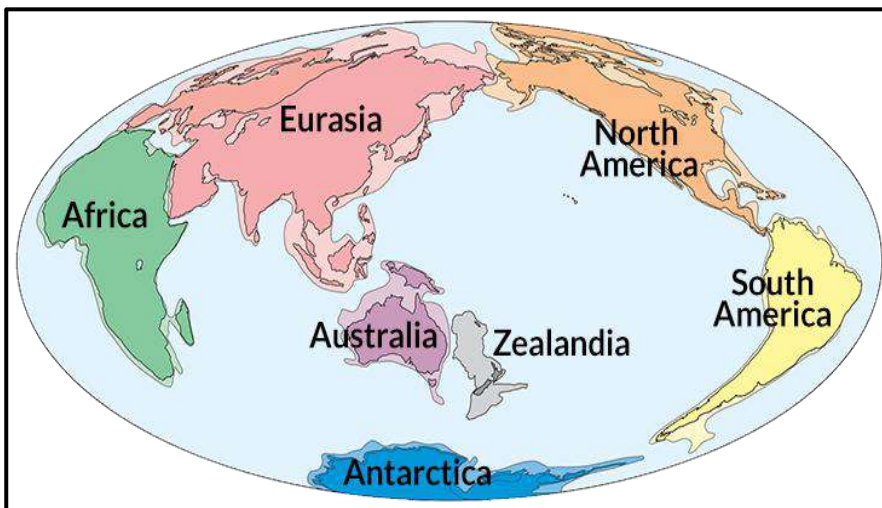


## 9. GEOGRAPHY AND DISASTER MANAGEMENT

### 9.1 ZEALANDIA

#### Context

- After 375 years, scientists have come to an agreement on the whereabouts of the mysterious eighth continent Zealandia, also known by its Māori name Te Riu-a-Māui.



#### About Zealandia

- Zealandia, the eighth continent, is supposedly around 3500 ft deep inside the southern area of the Pacific Ocean. There has been a lot of debate surrounding it, and whether it should be called a continent or not.
- Although the very term 'continent' is debatable, scientists are of the view that a continent is supposed to have boundaries which are clearly defined, and that it should have more than 1 million sq km of area.
- As per the definition, a continent should also be elevated above the surrounding crust of the ocean, and needs to have a continental crust that is thicker than that of the oceanic crust.

Zealandia which is approximately 1.89 million square miles in size, was once part of an ancient supercontinent called Gondwana. It also included Western Antarctica and Eastern Australia over 500 million years ago.

- However, Zealandia began to "pull away" from Gondwana roughly 105 million years ago.
- Basically, the southern part of Zealandia (on the Pacific Plate) began to shift relative to the northern part (on the Indo-Australian Plate).
  - The resulting displacement of approximately 500 km along the Alpine Fault is evident in geological maps.
- As it did so, it gradually sank beneath the waves, with over 94% of the landmass remaining underwater for millennia.

#### Geological Subdivisions

- Zealandia covers nearly 5m square km, of which 94% is under water, and encompasses not only New Zealand but also New Caledonia, Norfolk Island, the Lord Howe Island group and



### Elizabeth and Middleton reefs.

- Zealandia is divided into two regions by scientists, North Zealandia (or Western Province) and South Zealandia (or Eastern Province).
- These two features are separated by the Alpine Fault and Kermadec Trench and by the wedge-shaped Hikurangi Plateau, and they are **moving separately to each other**.

### Features

- The motions of the plates that caused **Zealandia to sink continue to shape the underwater geology** of the region into sunken regions **called grabens and basins**. **Volcanic activity also occurs** throughout the areas where one plate is subducting (diving under) another.
- Where the plates compress against each other, the **Southern Alps exist where uplifting motion** has sent the continent upward. This is similar to the formation of the Himalaya Mountains where the Indian Subcontinent meets the Eurasian plate.
- **Zealandia's oldest rocks date back to the Middle Cambrian period (about 500 million years ago)**. These are mainly limestones, sedimentary rocks made of the shells and skeletons of marine organisms.
- There is also some granite, an igneous rock made up of feldspar, biotite, and other minerals, that dates back to about the same time.
- Geologists continue to study rock cores in the hunt for older materials and to relate Zealandia's rocks with its former neighbors Antarctica and Australia. **The older rocks found so far are underneath layers** of other sedimentary rocks that show evidence of the breakup that began to sink Zealandia millions of years ago.
- In the regions above **water, volcanic rocks and features are evident throughout New Zealand** and some of the remaining islands.

### Present Status

- Zealandia is now recognized as the **world's eighth continent**. Every other continent is home to multiple countries, while Zealandia has only three territories.
- **New Zealand is the largest part of Zealandia** that is above sea level, **followed by New Caledonia**.
- The vast majority of this "new" continent is located underwater, lying beneath 6,560 feet (2km) of water.
  - 94% remains submerged beneath the Pacific Ocean.
- **Zealandia contains gas fields**, of which the largest known is the New Zealand Maui gas field, near Taranaki.

### Conclusion

- The continent is rich with natural resources, making the land of special interest to international governments and corporations. But it is also home to unique biological populations, as well as mineral deposits that are actively under development. For geologists and planetary scientists, the area holds many clues to our planet's past, and may help scientists understand landforms seen on other worlds in the solar system.

## 9.2 HIMACHAL PRADESH SEEKS NATIONAL DISASTER TAG

### Context

- Himachal Pradesh Chief Minister Sukhvinder Singh Sukhu has requested Prime Minister Narendra Modi to declare the destruction

caused by heavy rains in the state a national disaster.

## Detail

- Rain-related occurrences in Himachal Pradesh cost the state Rs 10,000 crore during monsoon. He urged that the incident be labeled a national disaster and that a special disaster relief package be announced.
- According to the state emergency operation center, 418 people have died (265 in rain-related incidents and 153 in road accidents) since the onset of monsoon on June 24 till September 9, while 39 are missing.

## How are states assisted during natural disasters?

- There is no official or defined category of “national disasters”.
- **Local and National Response:**
  - **Emergency Services:** Local and national governments deploy emergency services such as fire departments, police, and medical personnel to provide immediate assistance, including search and rescue operations, medical care, and evacuation if necessary.
  - **National Guard and Military:** In some cases, the national guard and military units may be called upon to assist in disaster response, particularly when large-scale operations are required.
- **Coordination and Command Centers:**
  - **Emergency Operations Centers (EOCs):** Governments establish EOCs to coordinate disaster response efforts, disseminate information, and manage resources effectively.
  - **Incident Command System (ICS):** A standardized system for managing emergency response, which includes designated roles and responsibilities for various agencies and organizations involved.
- **Resource Mobilization:**
  - **Federal Assistance:** National governments often provide financial and logistical support to affected states. This includes the allocation of funds from

federal disaster relief programs to cover response and recovery costs.

- **Mutual Aid Agreements:** States may have mutual aid agreements with neighboring states or regions to share resources, personnel, and equipment during emergencies.
- **International Assistance:**
  - **Foreign Aid:** In the case of severe disasters, countries may request and receive international aid in the form of financial assistance, relief supplies, and technical expertise.
  - **International Organizations:** Organizations like the United Nations, the Red Cross and Red Crescent Movement, and various UN agencies can provide coordination, funding, and technical support during large-scale disasters.

## What is the NDRF?

- The National Disaster Relief Fund (NDRF) is mentioned in the **2005 Disaster Management Act**.
- Similarly, SDRFs exist for the states and are the primary funds available to state governments for responses to notified disasters.
- The Central Government contributes 75% to the SDRF in general states and 90% in northeastern and Himalayan states.
- The **SDRF is to be used only for meeting the expenditure for providing immediate relief to the victims** of notified calamities like cyclones, droughts, earthquakes, fires, floods, tsunamis, hailstorms, landslides, avalanches, cloud bursts, pest attacks and frost/cold waves.
- According to a publication of the National Disaster Management Authority from November 2019, “The state government is primarily responsible for undertaking rescue, relief and rehabilitation measures in the event of a disaster.” But these can be supplemented with Central assistance.

### What is a severe calamity?

- A severe calamity refers to an extreme and devastating event or disaster that causes significant harm, damage, or suffering to people, property, and the environment.
- These events are often characterized by their scale, intensity, and widespread impact. Severe calamities can take various forms, including natural disasters, human-made disasters, and public health emergencies.
- **A calamity is declared to be of "rare severity"/"severe nature"** based on undefined criteria, but factors such as the intensity and magnitude of the calamity, level of assistance needed, etc. are looked at.

*A Calamity Relief Fund (CRF) is set up, with the corpus shared 3:1 between Centre and state. When resources in the CRF are inadequate, additional assistance is considered from the National Calamity Contingency Fund (NCCF), funded 100% by the Centre.*

- Relief in repayment of loans or for grant of fresh loans to the persons affected on

concessional terms, too, are considered once a calamity is declared "severe".

- Otherwise, the funds for the NDRF and SDRFs, for preparedness, mitigation and reconstruction, are allocated by the Government as a part of budgetary allocations.
- **Funds for immediate relief are recommended by the Finance Commission** – a constitutional body that recommends the distribution of financial resources among the states and the Centre – for a five-year period.

*The 15th Finance Commission (for 2021-22 to 2025-26) adopted a new methodology for state-wise allocations, based on factors like past expenditure, risk exposure (area and population) hazard and vulnerability of states. Rs. 54,770 crore has been allocated by the commission under the NDRF. It allocated a total of Rs. 1,28,122 crore in SDRF to all states, in which the Central share is Rs. 98,080 crore and the state government's share is Rs. 30,041 crore*

## 9.3 CORONAL MASS EJECTIONS

### Context

- NASA's Parker Solar Probe has marked a historic milestone by becoming the first spacecraft to fly through a coronal mass ejection (CME) directly from the sun – a colossal eruption that expels billions of tonnes of plasma.

### Detail

- CMEs are massive plasma and magnetic field expulsions from the Sun's corona that propagate into interplanetary space.
- The Sun emits a massive amount of material, including electrons, protons, and heavier ions, as well as magnetic fields, during a CME. This material is expelled at great speeds into space.

### About CME:

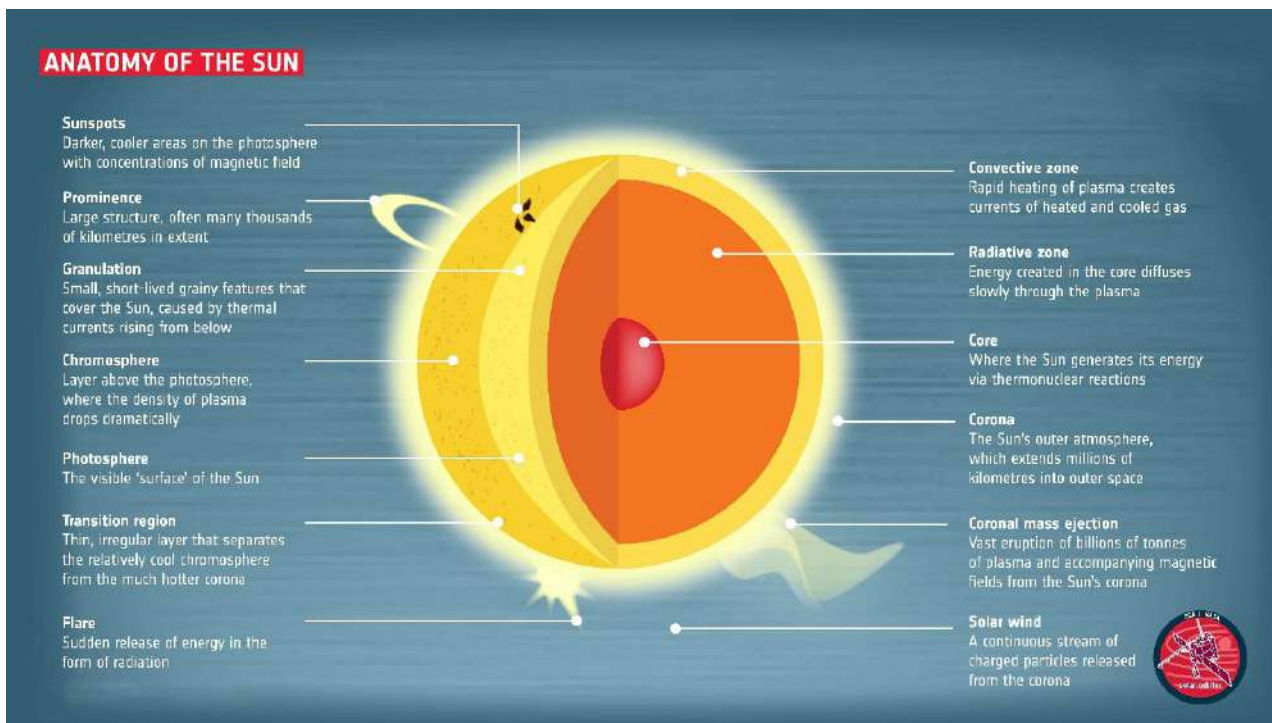
- **Coronal mass ejections (CMEs), or magnetic bursts** of plasma from the sun's corona, are fearsome indeed. They can drive high-energy space storms for millions of miles and endanger satellites, astronauts and even electronics within Earth's atmosphere.
- Coronal Mass Ejections (CMEs) are **large expulsions of plasma and magnetic field from the Sun's corona.**
- **They can eject billions of tons of coronal material** and carry an embedded magnetic field (frozen in flux) that is stronger than the background solar wind interplanetary magnetic field (IMF) strength.

### Causes:

- CMEs are typically associated with the Sun's highly dynamic and magnetically active nature.
- They often occur in regions of intense magnetic activity, such as sunspots, solar flares, or solar prominence eruptions.



- The exact mechanisms triggering CMEs are still an area of ongoing research, but they are closely linked to the Sun's magnetic field.



### Characteristics:

- **Speed:** CMEs can travel at various speeds, from a few hundred kilometers per second to over 3,000 kilometers per second. Faster CMEs are often more geoeffective and can reach Earth more quickly.
- **Size:** CMEs can be massive, with some having a volume several times larger than Earth.
- **Composition:** They consist of highly charged particles, mainly electrons and protons, and are embedded in magnetic fields.

### Impact on Earth and Space:

- **Geomagnetic Storms:** When a CME collides with Earth's magnetic field, it can cause geomagnetic storms. These storms can disrupt satellite communications, navigation systems (GPS), and power grids.
- **Auroras:** CMEs can create stunning auroras (northern and southern lights) as charged particles from the sun interact with Earth's magnetosphere.
- **Radiation Hazard:** Astronauts in space and passengers and crew on high-altitude polar-route flights can be exposed to increased levels of radiation during a CME event.
- **Satellite and GPS Disruption:** The increased solar radiation during a CME event can interfere with the operation of satellites and global positioning systems.
- **Communication Disruption:** High-frequency radio signals can be absorbed or refracted by the ionized layers in Earth's atmosphere during a geomagnetic storm, disrupting radio communication.

### About Geomagnetic Storms

- A geomagnetic storm is a significant disturbance in the magnetosphere of the Earth.
- These storms are caused by fluctuations in the solar wind, which cause large changes in the currents, plasmas, and fields in the Earth's magnetosphere.
- Sustained (for several hours) periods of high-speed solar wind and a southward-directed solar wind magnetic field (against the direction of Earth's field) near the dayside of the magnetosphere are effective for generating geomagnetic storms.

## 9.4 CIRRUS CLOUDS

### Context

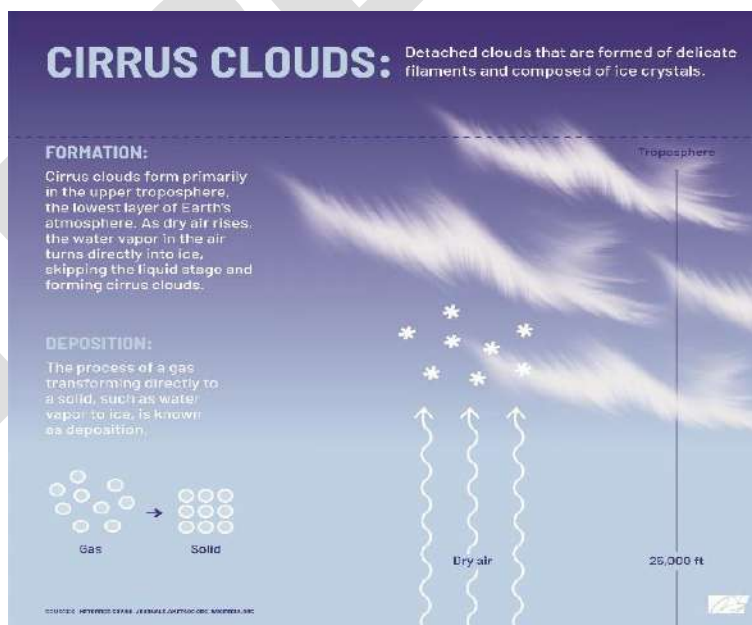
- A new study has found a significant statistical correlation between thunderstorms occurring around the world and the formation of wispy cirrus clouds - which might increase global warming.

### Detail

- **Increased thunderstorm activity** across the world may accelerate the climate crisis, according to a new study.
- **Tel Aviv University researchers reached this conclusion after discovering** a major statistical correlation between the number of thunderstorms and formation of cirrus clouds – high-altitude clouds made of ice crystals.
- **According to the study, cirrus clouds significantly impact the climate.** These clouds act as a blanket that envelops the Earth's atmosphere, increasing its temperature.
- **The researchers emphasized the difficulty in obtaining accurate** and comprehensive data on cirrus clouds, given their evasiveness from the human eye as well as from satellites. Moreover, these clouds form at very high altitude, far away from monitoring stations on the ground.

### About Cirrus Clouds:

- Cirrus clouds are a **type of high-altitude cloud that forms at altitudes above 20,000 feet (6,000 meters)** in Earth's atmosphere. **They are thin, wispy clouds** composed of ice crystals rather than water droplets.
- **Appearance:**
  - Cirrus clouds are **typically thin and wispy in appearance**. They often resemble strands of hair, feathers, or mare's tails, and their delicate appearance is a result of the small ice crystals that make up these clouds.
- **Altitude:**
  - Cirrus clouds are classified as **"high clouds"** because they form at altitudes ranging from 20,000 to 40,000 feet (6,000 to 12,000 meters) or even higher in the atmosphere. Their high altitude is one of their distinguishing features.
- **Composition:**
  - **Unlike many other cloud types that consist of water droplets**, cirrus clouds are composed of tiny ice crystals. These ice crystals form when water vapor in the upper atmosphere freezes into ice at temperatures well below freezing.
- **Formation:**
  - Cirrus clouds often form when moist air is lifted to high altitudes, **such as when warm, moist air rises over a mountain range or is lifted by advancing weather fronts**. As the air cools at higher altitudes, water vapor condenses and freezes into ice crystals, forming cirrus clouds.
- **Weather Indicators:**



- Cirrus clouds are sometimes referred to as "mare's tails" because of their wispy appearance. When cirrus clouds appear in the sky, especially if they are increasing in coverage or thickness, they can be an early indicator of changing weather conditions.
- **They often precede the arrival of a warm front**, indicating that a weather system is approaching, which may bring changes in temperature, precipitation, and wind.
- **Climate and Climate Change:**
  - Cirrus clouds can have both cooling and warming effects on Earth's climate. **They reflect sunlight back into space, which has a cooling effect on the planet.** However, they also trap some of the outgoing infrared radiation, contributing to the greenhouse effect.

**Relation between Thunderstorm and Cirrus cloud:**

- A new study has found a **significant statistical correlation between thunderstorms** occurring around the world and the formation of wispy cirrus clouds—which might increase global warming.
- **The cirrus clouds can contribute to global warming.** However, it is very difficult to track these clouds and obtain accurate data about them.
- **Findings indicate that a rise in the number of thunderstorms** occurring globally might significantly increase the number of cirrus clouds, thereby exacerbating the climate crisis.
- Cirrus clouds, those feathery clouds we see in the sky, significantly impact the Earth's climate.
- **An increase in these clouds will act as a blanket that increases warming**, while a decrease will allow the heat of the Earth to rise and escape from the atmosphere.
- This is why climate researchers are highly interested in cirrus clouds, trying to predict potential changes due to the rise in greenhouse gases and global warming.



**Closing thoughts**

- According to this study, if these predictions are correct, the rise in the number of thunderstorms can be expected to cause an increase in the number of cirrus clouds as well.
- These clouds, in turn, acting as a kind of 'atmospheric blanket,' will further exacerbate global warming.

**9.5 LIBYA'S CATASTROPHIC FLOODING**

**Context**

- The Libyan Arab Armed Forces (LAAF), an armed group in de facto control of eastern Libya including the flood-ravaged city of Derna, must immediately lift all undue restrictions imposed on media and facilitate

the delivery of humanitarian aid to all affected communities.

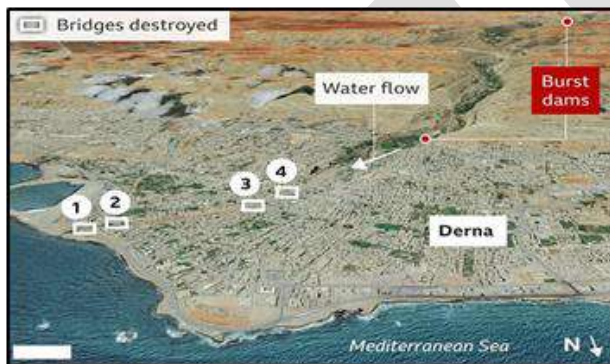
**Details**

- More than 11,000 people were killed and 30,000 were displaced in Libya after torrential

- rains caused once-in-a-century floods that burst dams and swept away buildings, according to local officials.
- The disaster came after devastating floods were reported on four continents within the first 10 days of September.
- Severe rainfall inundated parts of central Greece, northwestern Turkey, southern Brazil, central and coastal Spain, southern China, Hong Kong and the southwestern US.
- While a Mediterranean storm called Daniel led to floods in Libya, Greece and Turkey, a cyclone wreaked havoc in Brazil and another storm known as Typhoon Haikui caused flooding in Hong Kong and China.
- The latest series of extreme weather events took place against the backdrop of soaring global temperatures.

### What caused the damage to Libiya?

- Experts suggest three key factors coalesced into one catastrophe, causing the most devastating floods to have hit North Africa in almost a century.
- These three factors are - extreme weather, vulnerable geography, and crumbling infrastructure.**



### Extreme Weather:

- Libya's eastern region, witnessed extreme rainfall from Sept 10 to 11. Eg., in Derna, the average monthly rainfall in the whole of September is under 1.5 mm. However, it exceeded 150 mm in about two days.
- The rains were accompanied by strong winds of up to 80 kph. The water was brought by Storm Daniel which reached Libya on September 10.

- Formed in Greece, this storm is also responsible for causing floods and deaths in Spain, Turkey and Bulgaria earlier this month. Before reaching Libya, Daniel transitioned into what is known as a 'medicane,' or tropical-like cyclone that occasionally forms over the Mediterranean Sea.
- The storm became stronger as it drew energy from the abnormally warm waters. The Mediterranean has been 2 to 3 degree Celsius warmer this year than in the past. Medicanes are known to be weak storms that don't last long.
- But higher sea surface temperatures help them become stronger and last longer. It unloaded excessive rainfall over northeastern Libya, where rain flowing down the mountainous terrain overwhelmed dams.

### Vulnerable geography

- The floods seem to have caused the most destruction in Derna. One reason behind the city's widespread damage is its location.
- It is situated at the end of a valley and bisected by the Wadi Derna, a seasonal river that flows from mountains to the south (towards the sea) and is normally protected from flooding by dams.
- The unusually heavy rain overwhelmed two crucial dams and destroyed several bridges.

### Crumbling infrastructure

- The collapse of the two dams in Derna highlights the dilapidated infrastructure of Libya. The country has been gutted by a war between two rival factions for more than a decade.
- In Tripoli, Prime Minister Abdul Hamid Dbeibah leads Libya's internationally recognised government.
- In Benghazi, the rival prime minister, Ossama Hamad, heads the eastern administration, which is backed by powerful military commander Khalifa Hiftar.
- In the tussle for power, focus on socio-economic issues, including maintaining and developing infrastructure has been put on the backburner.



- Moreover, as flooding is quite rare in the region, Libya wasn't prepared to face the calamity. There are no flood-resilient structures or roads in the country, especially in Derna. Any sort of early-warning system regarding such disasters also doesn't exist.

### About Catastrophic flooding

- *Catastrophic flooding refers to severe and extensive flooding events that result in significant damage to property, infrastructure, and can pose a substantial threat to human life. These events are often characterized by their sudden and overwhelming nature, causing widespread destruction and disruption.*

<b>Causes</b>	<ul style="list-style-type: none"> <li>• <b>Heavy Rainfall:</b> One of the most common causes of catastrophic flooding is prolonged and intense rainfall, often associated with weather systems like hurricanes, tropical storms, or slow-moving low-pressure systems.</li> <li>• <b>Storm Surges:</b> Coastal areas can experience catastrophic flooding due to storm surges, which are rapid rises in sea level caused by strong winds and low atmospheric pressure associated with tropical cyclones.</li> <li>• <b>River Flooding:</b> Overflowing rivers can lead to catastrophic flooding when heavy rainfall upstream or the rapid melting of snowpacks increases water levels downstream.</li> </ul>
<b>Impacts</b>	<ul style="list-style-type: none"> <li>• <b>Loss of Life:</b> Catastrophic flooding events can result in the loss of human life, particularly if people are caught off guard or unable to evacuate in time.</li> <li>• <b>Property Damage:</b> Floodwaters can inundate homes, businesses, and infrastructure, causing extensive damage and financial losses.</li> <li>• <b>Disruption of Services:</b> Flooding can disrupt essential services such as transportation, electricity, clean water supply, and communication networks.</li> </ul>
<b>Mitigation</b>	<ul style="list-style-type: none"> <li>• <b>Flood Control Infrastructure:</b> Properly designed and maintained flood control infrastructure, including dams, levees, and flood barriers, can help mitigate the impact of flooding.</li> <li>• <b>Early Warning Systems:</b> Advanced meteorological and hydrological monitoring systems, combined with effective early warning systems, can provide critical information to communities at risk.</li> <li>• <b>Land Use Planning:</b> Restricting development in flood-prone areas and implementing land use planning regulations can reduce vulnerability to flooding.</li> </ul>

## 9.6 ANNULAR SOLAR ECLIPSE

### Context

- On Oct. 14, 2023, an annular solar eclipse will cross North, Central, and South America. This eclipse will be visible for millions of people in the Western Hemisphere.

### Details

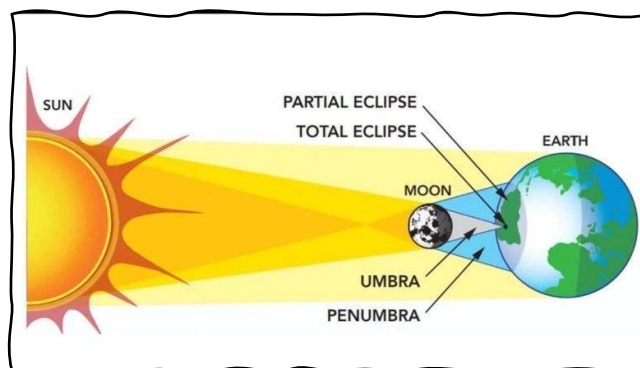
- An annular eclipse is similar to a total solar eclipse, in which the moon completely covers the sun's face, except at the former's peak, the moon is too small in the sky to fully blot out our home star.
- This creates a bright ring of sunlight around a dark lunar silhouette—thus, the name "annular" means "ring-shaped."

**Solar eclipses happen when the moon passes directly in front of the sun**—essentially, our natural satellite's shadow sweeps across the surface of Earth. If the moon orbited in the same plane as Earth orbits the sun, we'd get a solar

eclipse every 29 days—the length of time it takes the moon to move around our planet, relative to the sun. But the moon's orbit is actually tipped, inclined by about five degrees to that of Earth.

### About Annular Solar Eclipse

- An annular solar eclipse is a celestial event that occurs when the Moon passes between the Earth and the Sun, partially covering the Sun's disc. During an annular solar eclipse, the Moon appears smaller in the sky than the Sun, creating a ring-like or annular appearance.



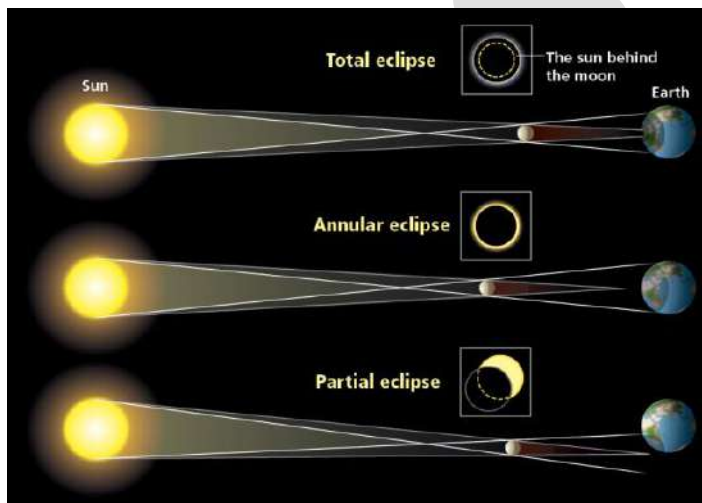
### **Key features and characteristics of an annular solar eclipse**

#### Alignment of Sun, Moon, and Earth:

- An annular solar eclipse occurs when the Sun, Moon, and Earth are aligned in a straight line, with the Moon positioned directly between the Earth and the Sun.

#### Apparent Size of the Moon:

- Unlike a total solar eclipse, where the Moon completely covers the Sun, during an annular eclipse, the Moon is slightly farther away from the Earth in its elliptical orbit. As a result, it appears smaller in the sky and does not completely block the Sun's disc.



#### Ring of Fire:

- The characteristic feature of an annular solar eclipse is the appearance of a ring of sunlight, often referred to as the "ring of fire" or the "ring of light." This occurs because the outer edges of the Sun are still visible around the Moon's silhouette.

#### Path of Annularity:

- The annular phase is visible only along a specific path on Earth. This path is known as the path of annularity. Observers within this path experience the full annular eclipse, while those outside the path see a partial solar eclipse.

#### Duration of Annularity:

- The duration of the annular phase varies during each eclipse and is influenced by factors such as the Moon's distance from Earth and the observer's location within the path of annularity. The maximum duration of annularity is typically a few minutes.

### **Types of solar eclipse**

#### Solar eclipses are classified into three categories.

- A partial solar eclipse occurs when the sun, moon, and earth are not perfectly aligned.
- **Total solar eclipse:** A total solar eclipse occurs when the sun, moon, and earth must be in a straight line.
- **An annular solar eclipse** is a form of total solar eclipse. It happens when the sun, moon, and earth are all on the same plane and not just in a straight line.
- **The moon must also be farther away from the Earth** to not entirely obscure the disc of the sun, resulting in a narrow band of light surrounding the black colour of the moon, allowing the ring of fire to be visible.
  - As a result, it is also known as the Ring of fire eclipse.

- The distance between the Earth and the moon at the moment of the eclipse can dictate the type of eclipse that will take place.
- **The distance between the earth and the moon** is always changing due to the egg-shaped elliptical orbit of the moon.

### Significance of an annular solar eclipse

- **Study of Solar Anatomy:** Solar eclipses, including annular eclipses, provide scientists with opportunities to study the Sun's outer atmosphere, known as the corona. During an eclipse, the corona becomes visible due to the Moon blocking the Sun's bright disk.
- **Solar Dynamics:** Observations made during an annular solar eclipse contribute to the understanding of solar dynamics, such as sunspots, solar flares, and prominences.
- **Celestial Alignment:** An annular solar eclipse is a striking example of celestial alignment, where the Moon, Earth, and Sun align in a way that the Moon appears to cover the center of the Sun, leaving a ring-like structure.
- **Rare Events:** While solar eclipses are not extremely rare, the occurrence of an annular eclipse is less frequent than total or partial eclipses. Each annular eclipse is a unique event in the cosmic calendar.
- **Space Observatories:** Satellites and space-based observatories, such as the Solar and Heliospheric Observatory (SOHO), contribute to comprehensive observations of solar eclipses from different perspectives, including space-based views.

## 9.7 SHORT ARTICLES

### India sees lowest August Rainfall in a century

#### Context

- Rainfall in August had been the least in over a century, with India getting 36% less rain than it usually does in the month.

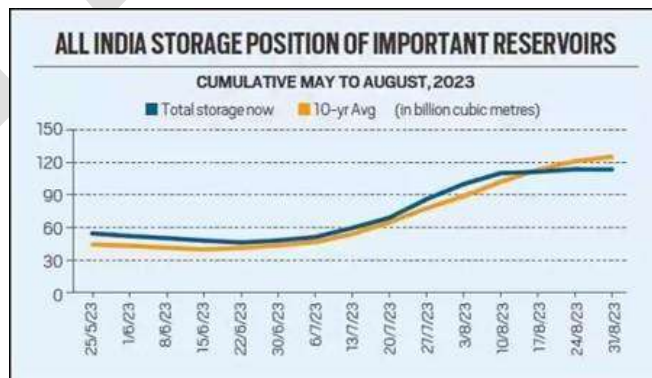
#### Details:

- **All of India's eight infrastructure industries reported growth for the first time in 14 months this July**, with core sectors' output rising 8% after a five-month high surge of 8.3% in June.
- While **July's performance was buoyed by a 14.9% in coal production**, steel output also rose in double digits for the ninth successive month, rising 13.5% in July.
- **Natural gas production grew 8.9%** in July, the fastest pace recorded since February 2022.
- Of the four monsoon months, August usually sees the **most amount of rainfall (25.4 cm) after July's 28 cm**.
- **The last time India recorded such severe deficits in August was in 2005**, when the shortfall was about 25% of the normal, and in 2009, when **India saw its biggest drought** in half a century and August rainfall was 24% less than what was due.

#### Consequences of the low rainfall:

#### Reason

- **The emergence of El Nino conditions** in the equatorial Pacific Ocean was the primary cause of low rainfall activity in much of India in August, except northeastern India, the Himalayan states, and parts of Tamil Nad.



### Irrigation

- The **Unexpected rise in power demand**, primarily for irrigation purposes.

### Coal share

- Coal's share of total power generation in India **increased to 66.7% in August**, the highest for the month in six years.

### Water level

- A lack of rain has further exacerbated the **reduction in major reservoir water levels**, resulting in a 21 percent shortage compared to the previous year's levels.

### Crop output

- Concerns have been voiced regarding **lower crop output and the possibility of more export limitations** as a result of the country's rice restrictions.

### States

- **Lowest:** Kerala has had 48% of its rains this season, while Manipur and Jharkhand have had 46% and 37%, respectively.
- **Highest:** Ladakh has the biggest excess (169%), followed by Chandigarh (61%), and Himachal Pradesh (31%).

## Hunga-Tonga volcano

### Context

- These "density currents", as they're known, snapped long sections of telecommunications cabling, cutting the Pacific kingdom's link to the global internet.

### Details:

- The Tonga Islands are located along the Ring of Fire, which encircles the Pacific Ocean basin and is characterized by increased volcanic and seismic activity.
- It's an Undersea Volcanic Eruption made up of two small deserted islands called Hunga-Ha'apai and Hunga-Tonga.
- Over the last few decades, the Hunga-Tonga-Hunga-Ha'apai volcano has erupted regularly.
- Hot jets of magma and steam erupted through the seas during events in 2009 and 2014/15. However, these eruptions were minor in comparison to the January 2022 occurrences.
- This is one of the huge explosions that the volcano can produce every thousand years.
- The Fuel-Coolant interaction is one of the reasons it is highly explosive.

### About Hunga-Tonga volcano:

#### About

- It is often referred to simply as Hunga Tonga volcano, is a submarine volcano located in the South Pacific Ocean near the Kingdom of Tonga. It gained significant international attention due to a major eruption and subsequent events in January 2022.
- The volcano is part of the highly active Tonga-Kermadec Islands volcanic arc, a subduction zone that runs north-northeast from New Zealand to Fiji.

#### Location

- The volcano is situated in the southwestern part of the Pacific Ring of Fire, an area known for its high volcanic and seismic activity.
- It is part of the Tonga-Kermadec volcanic arc, a subduction zone where the Pacific Plate is subducting beneath the Indo-Australian Plate.





### Impact on the Volcano

- The eruption significantly changed the landscape of the Hunga Tonga-Hunga Ha'apai volcano. Satellite imagery showed that the eruption created a new island or landmass in the vicinity of the volcano.
- The exact size and stability of the new landmass were initially uncertain, and it was closely monitored for potential further volcanic activity and structural changes.

### Importance

- The eruption of Hunga Tonga-Hunga Ha'apai garnered considerable interest from the scientific community, as it provided a rare opportunity to study the formation and evolution of new landforms resulting from volcanic eruptions in the ocean.

## Carrying Capacity

### Context

- The Centre has urged the Supreme Court to direct 13 Himalayan states of the country to assess their 'carrying capacity' and proposed setting up of an expert panel to evaluate the action plans submitted by each of them.

### Details

- Carrying capacity is the maximum population size that an ecosystem can sustain without getting degraded.
- The Ministry of Environment, Forests and Climate Change filed the affidavit in a PIL by Ashok Kumar Raghav after the top court had asked the Centre and the petitioner to discuss and suggest a way forward to enable the court to pass directions on the carrying capacity of Himalayan states and towns.
- Raghav's plea sought an assessment of the carrying capacity and master plans for the Indian Himalayan Region spanning 13 states and union territories.

### About Carrying Capacity

#### About

- Carrying capacity is defined as the maximum population size that an environment can support over an extended period without degradation of the environment's ability to support future generations.

#### Factors affecting carrying capacity

- Carrying capacity is influenced by a variety of biotic (living) and abiotic (non-living) factors, including:

- Availability of resources such as food, water, and shelter.
- Environmental conditions like temperature, humidity, and habitat quality.
- Interactions with other species, including competition, predation, and mutualism.
- Environmental degradation and pollution.
- The capacity of an ecosystem to regenerate and replenish its resources.

#### Types

- **Biological Carrying Capacity:** This refers to the maximum population size that an ecosystem can support based on the availability of essential resources and habitat quality.
- **Cultural Carrying Capacity:** This takes into account the human cultural and societal values that influence resource use and management. It considers how human societies perceive and manage natural resources.

#### Conservation

- Understanding carrying capacity is essential for managing natural resources and ecosystems sustainably. It helps in setting conservation goals and ensuring the long-term health and viability of populations and ecosystems.
- Conservation efforts often involve monitoring and managing populations to keep them within the carrying capacity of their habitats.

## Matsya-6000

### Context

- The National Institute of Ocean Technology (NIOT) is building India's first manned submersible called the 'Matsya 6000' which will carry three people to a depth of 6,000 metres under the sea level.



### Details

- India's first manned submersible called the 'Matsya 6000' will carry three people to a depth of 6,000 metres to study deep sea resources. The submersible is being built by the National Institute of Ocean Technology (NIOT) under the Samudrayaan project.

### About Matsya-6000

#### About

## Submarine Volcano

### Context

- As the world swelters through record temperatures, scientists say an unusual culprit may be partly to blame: an underwater volcanic eruption off Tonga in the South Pacific last year.

### Details:

- While most big blasts cool the planet with a sun-dimming haze, the eruption of Hunga Tonga-Hunga Ha'apai in January last year blew the equivalent of 60,000 Olympic swimming pools of water into the stratosphere, high above the plane.
- Water vapour is a natural greenhouse gas, trapping heat as it swirls around the globe. By contrast, major land eruptions – such as Pinatubo in the Philippines in 1991 – temporarily dim sunshine with an ashen sunshade before falling back to Earth.

- The National Institute of Ocean Technology (NIOT) in Chennai created the manned submersible vehicle.
- It was created as part of the Samudrayaan program to help humanity explore mineral resources in the deep ocean.
- It would make India one of just six countries (the United States, Russia, Japan, France, and China) to have piloted a crewed undersea expedition deeper than 5,000 meters.

### Objectives

- Its goals will be to investigate chemosynthetic biodiversity in hydrothermal vents and low-temperature methane seeps in the ocean.
- It will also promote ocean literacy and tourism.

### Features

- It is meant to function in the deep water for 12 hours, but it can also run for up to 96 hours in an emergency, with all the necessary human safety procedures.
- It is made of an 80mm thick titanium alloy and can withstand pressures 600 times greater than at sea level.
- It is powered solely by gravity, water, and lithium-ion batteries.
- The ultra-short baseline acoustic positioning system (USBL) will also be included. This allows the mothership carrying the transponder to send information and the submersible to respond, informing the mothership of the submersible's location.

## About Submarine Volcano:

### About

- A submarine volcano, also known as an **underwater volcano** or **seamount volcano**, is a type of volcano that forms beneath the surface of the ocean.
- These volcanoes are responsible for **creating underwater volcanic features** and can have significant geological and ecological implications.

### Formation

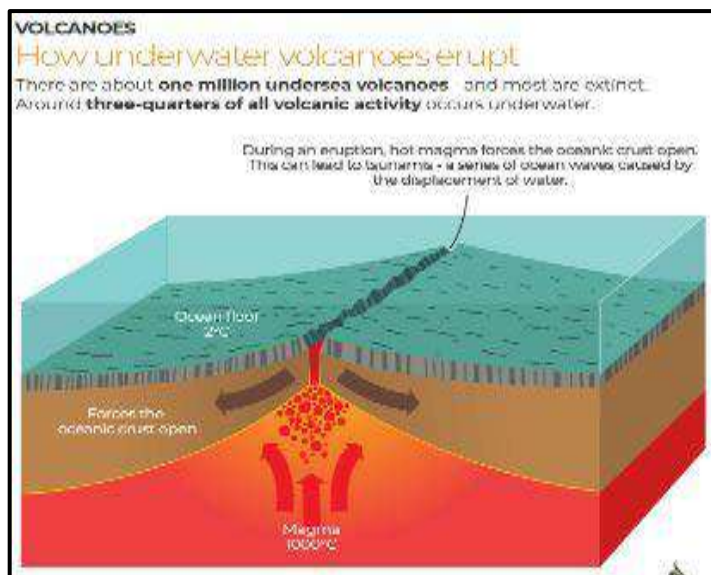
- Submarine volcanoes form when **molten rock (magma)** from the **Earth's mantle rises to the surface beneath the ocean**. This can occur through various geological processes, including plate tectonics and mantle plumes.

### Geological Features

- **Seamounts:** Submarine volcanoes often form seamounts, which are underwater mountains with peaks that may or may not reach the ocean's surface. Seamounts can vary in size and shape, and they can be either active, dormant, or extinct.
- **Hydrothermal Vents:** Some submarine volcanoes are associated with hydrothermal vent systems. These vents release superheated water rich in minerals and gases, creating unique ecosystems and geological formations on the ocean floor.

### Significance

- Submarine volcanoes provide valuable insights into Earth's geological processes and the interactions between the **Earth's lithosphere, hydrosphere, and biosphere**.
- Studying these environments contributes to our understanding of the planet's geologic history and the potential for life beyond Earth.



## 9.8 SNIPPETS

### Gilbert Hill

APTI PLUS

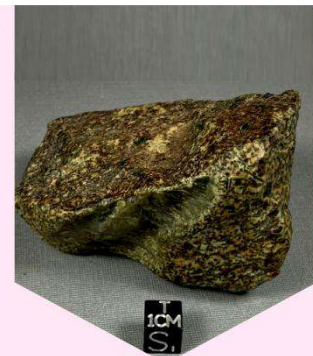
- It is a 200-foot monolithic column of black basalt rock located in Mumbai's Andheri district.
- The sheer vertical face of the rock was produced when molten lava was forced out of the Earth's clefts some 66 million years ago during the Mesozoic Era.
- It was designated a National Park in 1952 and a Grade II cultural structure by the Brihan Mumbai Municipal Corporation in 2007.
- The 'hill' is one of just three volcanic rock outcrops on the planet.



## Erg Chech

APTI PLUS

- Erg Chech 002 is classified as an "ungrouped achondrite," meaning it was formed from melted planetesimals, and its parent body is unknown.
- The analysis discovered that Erg Chech 002 has a high concentration of lead-206 and lead-207, as well as undecayed uranium-238 and uranium-235.
- Aluminum-26 was dispersed irregularly in the early Solar System, according to comparisons with other achondrites, particularly volcanic angrites.



## 9.9 1 MAINS & MCQs

**Q1. Cloud seeding remains a controversial and complex field with ongoing research. In this regard explain cloud seeding, including its applications, difficulties, and concerns.**

### Introduction

- Cloud seeding is a weather modification technique designed to alter or enhance precipitation within clouds. The process involves introducing substances into clouds to encourage the formation and growth of ice crystals or raindrops, ultimately leading to increased precipitation. While cloud seeding has been practiced for several decades, its effectiveness, ethical considerations, and environmental impacts remain topics of discussion and research.

### Body

#### Applications:

- **Increased Precipitation: Rain Enhancement:** Cloud seeding is primarily used to increase rainfall in regions experiencing water scarcity or drought conditions.
- **Snowfall Enhancement: Winter Weather Modification:** In cold regions, cloud seeding may be employed to enhance snowfall, which can have implications for water supply, hydroelectric power generation, and winter sports.
- **Hail Suppression: Protection of Crops:** Cloud seeding is sometimes used to suppress the formation of hailstones in thunderstorms. This aims to protect crops from hail damage.

#### Methods of Cloud Seeding:

- **Silver Iodide:** The most common cloud seeding agent is silver iodide. It is introduced into clouds in the form of flares, rockets, or dispersed from aircraft.
- **Salt Particles:** Sodium chloride (table salt) particles are another seeding agent. These particles can attract water droplets and encourage the coalescence of cloud particles.

#### Difficulties and Concerns:

- **Scientific Efficacy: Debates on Effectiveness:** The scientific community is divided on the overall effectiveness of cloud seeding. While some studies suggest positive results, others question the statistical significance and reliability of the observed effects.
- **Ethical Considerations: Unintended Consequences:** Manipulating weather patterns raises ethical concerns due to potential unintended consequences. Altering precipitation in one area could impact ecosystems, agriculture, and water availability downstream.
- **Environmental Impact: Chemical Dispersal:** The introduction of chemicals into the atmosphere, even in small quantities, raises concerns about environmental impact and air quality.
- **Ecological Effects:** Altered precipitation patterns may affect ecosystems, including vegetation, wildlife habitats, and water bodies.



### Conclusion

- While it offers a potential tool for addressing water scarcity, careful consideration of ethical, environmental, and social implications is essential. The scientific community,

policymakers, and the public must work together to navigate the challenges associated with cloud seeding and make informed decisions about its use.

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### Q2. Consider the following statements regarding Zealandia:

1. It is considered as 8th continent on this planet.
2. It separated from Gondwana supercontinent.
3. Zealandia's southern part is situated on Pacific plate.

How many of the above statements are incorrect?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

### Q3. Consider the following pairs:

1. Cretaceous - Paleogene: Evolve of crocodile
2. Jurassic period : Extinction of non-avian dinosaurs
3. Triassic period: Wiped out more than 30% of all aquatic animals

How many of the above pairs is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

### Q4. Erg Chech 002, which is often discussed in the news, is related to?

- (a) It is the oldest volcanic rock ever discovered.
- (b) It is a Russian satellite entrusted with investigating the Sun.
- (c) It is a comet that appears twice in a century.
- (d) It is the largest amount of energy released during electron collision.

### Q5. Which of the following is/are correct about the geomagnetic storm?

1. It is a significant disturbance in the magnetosphere of the Earth.
2. These storms are caused by fluctuations in the solar wind, which cause large changes in the currents, plasmas, and fields in the Earth's magnetosphere.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

### Q6. In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:

**Assertion (A):** A partial solar eclipse occurs when the sun, moon, and earth are not perfectly aligned.

**Reason (R):** An annular solar eclipse is a form of total solar eclipse. It happens when the sun, moon, and earth are all on the same plane and not just in a straight line.

- (a) A is true but R is false.
- (b) Both A and R are true and R is the correct explanation of A.
- (c) A is false but R is true.
- (d) Both A and R are true but R is not the correct explanation of A.

ANSWERS: 2) d, 3) a, 4) a, 5) c, 6) d

# 10. PLACES IN NEWS

## 10.1 IN INDIA

### BHORAMDEO WILDLIFE SANCTUARY

**Context**

- The Chhattisgarh High Court has dismissed a Public Interest Litigation (PIL) that aimed to designate the Borhamdeo Wildlife Sanctuary (BWS) as a tiger reserve and the Chilpi Range as a buffer zone.

**Details**

- Location and Border:** Kawardha district of Chhattisgarh. Shares a border with Kanha National Park in Madhya Pradesh. Borhamdeo Temple [often referred to as the "Khajuraho of Chhattisgarh,"] is situated near its borders.
- Mountain Ranges:** Part of the Maikal Range of the Satpura Hills.
- Rivers:** Serves as the origin for the Fen and Sankari rivers.
- Wildlife:** Particularly known for Tiger. Inhabits leopards, wild dogs, sloth bears, sambar deer, barking deer, chital (spotted deer), gaur (Indian bison), and numerous bird and reptile species.
- Flora:** Sal, Saja, Tinsa, Kara, and Haldu.



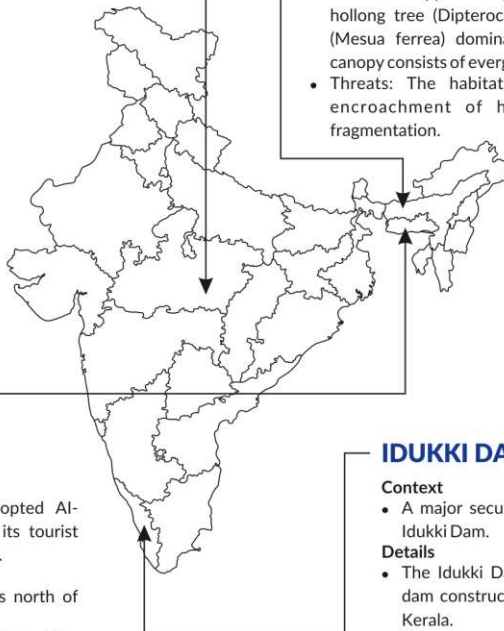
### HOLLONGAPAR GIBBON SANCTUARY

**Context**

- The Hollongapar Gibbon Sanctuary has become a forest island after having lost connectivity with surrounding forest patches.

**Details**

- Location:** The Hollongapar Gibbon Sanctuary, is an isolated protected area of evergreen forest located in Assam.
- Establishment:** The sanctuary was officially constituted and renamed in 1997.
- Fauna:** The Sanctuary contains India's only gibbons – the hoolock gibbons, and Northeastern India's only nocturnal primate – the Bengal slow loris.
- Biota:** It is classified as "Assam plains alluvial semi-evergreen forests" with some wet evergreen forest patches.
- River:** The Bhogdoi River creates a waterlogged region along the border of the sanctuary.
- Flora:** The upper canopy of the forest is dominated by the hollong tree (*Dipterocarpus macrocarpus*), while the nahar (*Mesua ferrea*) dominates the middle canopy. The lower canopy consists of evergreen shrubs and herbs.
- Threats:** The habitat is threatened by illegal logging, encroachment of human settlements, and habitat fragmentation.



### UMIAM LAKE

**Context**

- The Meghalaya government has adopted AI-enabled robotic technology to keep its tourist hotspot, Umiyam Lake, free of pollutants.

**Details**

- Umiyam Lake is a reservoir in the hills north of Shillong in the state of Meghalaya.
- Also known as "Bara Pani" or the Big Water, The Lake is a part of a dam, constructed as a first Hydel Power Project in Meghalaya.
- The surrounding Sylvan Hills and green Khasi pines add to the majesty of this vast lake, which was created when the Umiyam River was dammed to store water for hydroelectric power generation.
- Downstream irrigation, fisheries, and drinking water cater to local anthropogenic needs.



### IDUKKI DAM

**Context**

- A major security breach was reported from Idukki Dam.

**Details**

- The Idukki Dam is a double-curvature arch dam constructed across the Periyar River in Kerala.
- It is one of the highest arch dams in Asia.

**Periyar**

- Periyar is the longest river and the river with the largest discharge potential in the Indian state of Kerala.
- The river originates from Chokkampatti Mala, a peak on the southern boundary of the Periyar Tiger Reserve.
- Its major tributaries are: Muthirapuzha River, Mullayar River, Cheruthoni River, Perinjankutti River, Edamala River.



**10.1 IN INDIA**

**BAGMATI RIVER**

**About**

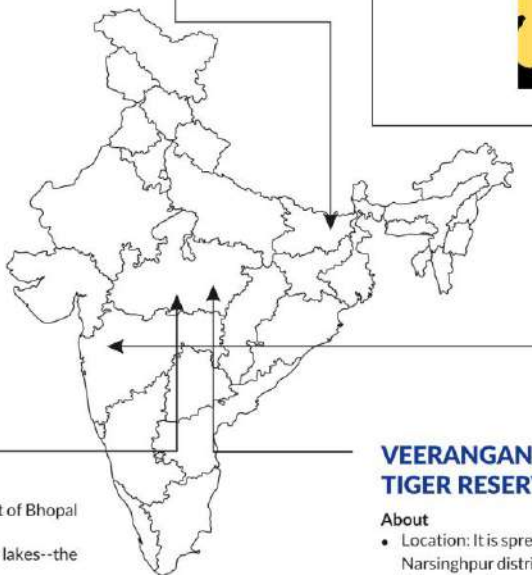
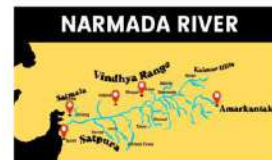
- Bagmati River is a transboundary river between the Nepal and India
- It starts its journey from Kathmandu, Nepal and it ends in the Koshi River near Bornesthan, Bihar, India.
- The total length of the Bagmati is 3 km.
- The Bagmati River flows through the Kathmandu Valley in Nepal and is separated from Kathmandu through Patan, traveling through Province No. 2 of Nepal's southern section before entering the Indian state of Bihar.



**NARMADA RIVER**

**About**

- The Narmada or Nerbudda is a river in central India. It forms the traditional boundary between North India and South India, and is a total of 1,289 km (801 mi) long.
- Of the major rivers of peninsular India, only the Narmada, the Tapi and the Mahi run from east to west.
- It rises on the summit of Amarkantak Hill in Madhya Pradesh state, and for the first 320 kilometres (200 miles) of its course winds among the Mandla Hills, which form the head of the Satpura Range; then at Jabalpur, passing through the 'Marble Rocks'.
- It enters the Narmada Valley between the Vindhya and Satpura ranges, and pursues a direct westerly course to the Gulf of Cambay.



**BHOJ WETLAND**

**About**

- The Bhoj wetland is situated in the heart of Bhopal district in Madhya Pradesh.
- The wetland consists of two man-made lakes--the upper lake and the lower lake.
- The upper lake, the oldest among large man-made lakes in central India, was created by king Bhoj in the 11th century by constructing an earthen dam across the Kolans river and the lower lake was constructed nearly 200 years ago mostly from the seepage from the upper lake.



**VEERANGANA DURGAVATI TIGER RESERVE**

**About**

- Location: It is spread across Sagar, Damoh and Narsinghpur districts of Madhya Pradesh.
- It is spread over an area of 2,339 square kilometres.
- It is the seventh tiger reserve in Madhya Pradesh.
- It will encompass areas within the Nauradehi Wildlife Sanctuary and Durgavati Wildlife Sanctuary.
- A green corridor linking Panna Tiger Reserve (PTR) with Durgavati will be developed for the natural movement of the tiger to the new reserve.





## 10.1 IN INDIA

### CHINCHOLI WILDLIFE SANCTUARY

**About**

- Chincholi Wildlife Sanctuary is located in the Kalaburagi district of Karnataka.
- It is a dry land Wildlife Sanctuary in South India.
- It has dry deciduous forest with major plantations of Acacia and teak plantations.
- It is home to different varieties of flora and fauna, including sandalwood, red sanders, blackbuck, striped hyena, wolf, and fruit bats.
- It is the first dry land Wildlife Sanctuary which is rich in floristic diversity in the Hyderabad-Karnataka region.



### JHELUM RIVER

**About**

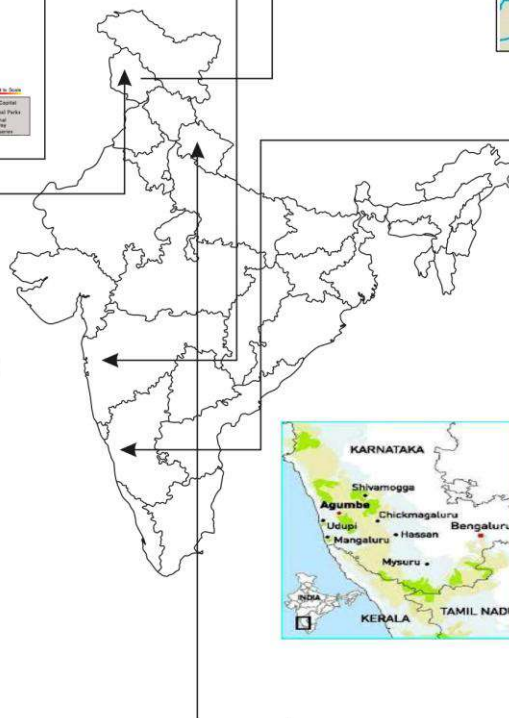
- It is a river that runs between India and Pakistan.
- It is an Indus River tributary.
- The Jhelum (Vyeth in Kashmiri, Vetesta in Sanskrit, and Hydaspes in Greek) is the valley's principal stream.
- It is the largest and westernmost of Punjab's five rivers, flowing through the Jhelum District in Pakistan's Punjab province.



### KAOBAL GALI-MUSHKOH VALLEY

**About**

- Kaobal Gali is a high mountain pass in the Kargil district of Jammu and Kashmir.
- It links the Mushkoh Valley in Drass, Ladakh, with the Tulail Valley in Gurez.
- The westernmost portion of Ladakh, which is in the Jammu and Kashmir Union region that is managed by India, is where you'll find the Mushkoh Valley.
- The region is referred to as the Wild Tulip Valley.
- Kaobal Gali, which is 13,671 feet above sea level, is a restricted and hazardous pass. It offers a different path from Kashmir to Ladakh. Currently, only 4x4 vehicles can reach the pass, although plans exist to make it accessible to tourists.



### AGUMBE RAINFOREST COMPLEX

**About**

- Agumbe is historically famous for receiving over 8,000 mm of rainfall during the monsoon due to which it was nicknamed 'Cherrapunji of the South'.
- However, towns like Nadapala and Mudradi in Udupi district have recently recorded more rainfall than Agumbe.
- Agumbe is a village located near Thirthahalli in Shimoga district of Karnataka.
- The first rain gauge was installed by the British in 1882 at Agumbe Rainforest Complex (ARC) in Karnataka.
- It is included in the list of UNESCO World Heritage Sites, which is famous for its rich biodiversity, waterfalls and red-hued sunsets.



### MANA VILLAGE

**About**

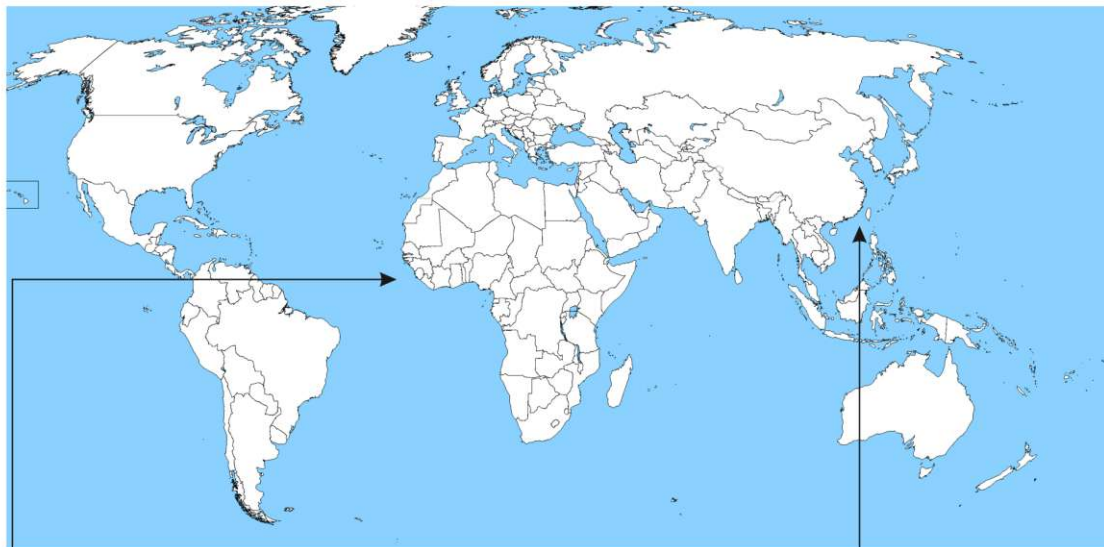
- Mana is a small village located in the Chamoli district of Uttarakhand in India. It is situated near the Indo-Tibetan border and is one of the many border villages in India.
- Mana village was previously known as the Last Village of India due to its proximity to the Indo-Tibetan border, now known as the "First Indian Village".
- Mana Village is also known for its proximity to the holy shrine of Badrinath, which is located about 3 km from the village.
- The village is believed to be the birthplace of the Pandavas.

### WIDER ROAD TO CHINA BORDER IN UTTARAKHAND





## 10.2 IN WORLD



### GUINEA

#### Context

- At least two people were killed in Guinea's capital Conakry.

#### Details

- Location: Guinea is named after the Guinea region which lies along the Gulf of Guinea. It stretches north through the forested tropical regions and ends at the Sahel.
- Borders: Guinea shares a border with Guinea-Bissau to the northwest, Senegal to the north, Mali to the northeast, Ivory Coast to the east, Sierra Leone to the southwest, and Liberia to the south.
- River Sources: The sources of the Niger River, the Gambia River, and the Senegal River are all found in the Guinea Highlands.
- Ecoregions: Guinea is home to 5 ecoregions: Guinean montane forests, Western Guinean lowland forests, Guinean forest-savanna mosaic, West Sudaniansavanna, and Guinean mangroves.
- Flora: The southern part of Guinea lies within the Guinean Forests of West Africa Biodiversity hotspot, while the northeast is characterized by dry savanna woodlands.
- Fauna: The elephant, hippopotamus, buffalo, lion, leopard, and many kinds of antelope and monkey are to be found in Guinea, as well as crocodiles and several species of venomous snakes. Birds are plentiful and diverse.



### TAIWAN STRAIT

#### Context

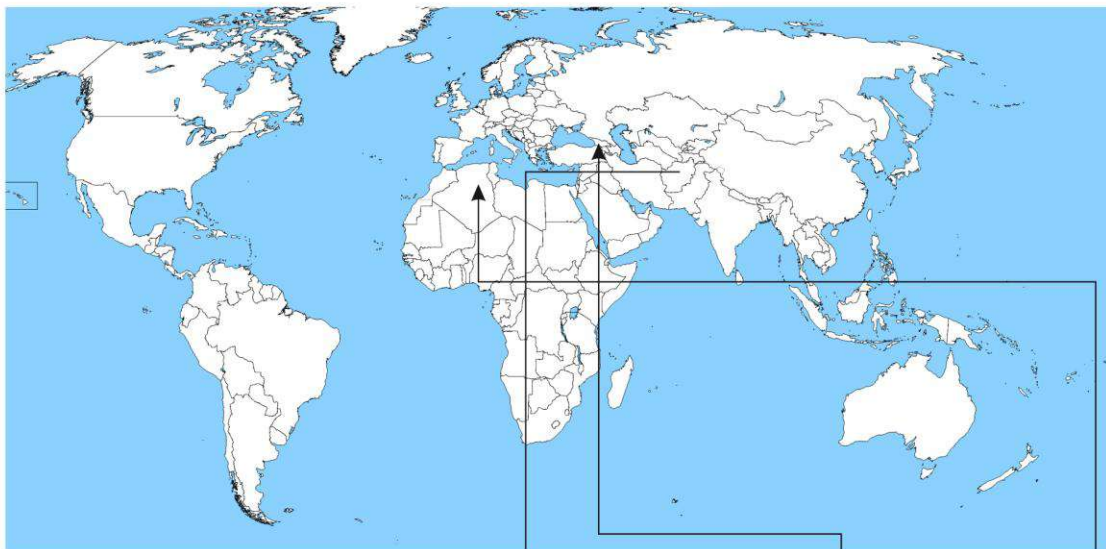
- Chinese military aircraft that breached the sensitive median line of the Taiwan Strait.

#### Details

- Location: It is a wide strait separating the island of Taiwan and continental Asia.
- Note: A strait is a narrow water passage connecting two larger bodies of water, usually two seas.
- Sea: The strait is part of the South China Sea and connects to the East China Sea to the north.
- Location: It runs between the coast of the Fujian Province (China) and the island of Taiwan.
- Erstwhile name: The strait was named Formosa by Portuguese navigators in the late 16th century.
- Definition: The international agreement does not define the Taiwan Strait.
- Continental shelf: The entire strait is on Asia's continental shelf.
- Rivers: The Jiulong and Min rivers from China's Fujian Province drain into the Taiwan Strait.
- Dispute: Historically, the strait has been disputed between China and Taiwan.
- Davis Line: A theoretical "median line", also known as the Davis line, was defined down the middle of the strait by the US in 1955, after which the US pressured both sides not to cross it.
- Trade: Early 90% of Chinese, Japanese & Korean trade towards Asia, Middle East, and India passes through this strait.



## 10.2 IN WORLD



### HELMAND RIVER

#### Context

- A member of the Iran parliament has said that if Tehran's right to Helmand River water is not honored, a "counter-action" would be taken.

#### Details

- About: The Helmand River is the longest river in Afghanistan and the primary watershed for the endorheic Sistan Basin.
- Origin: It emerges in the Sanglakh Range of the Hindu Kush mountains in the northeastern part of Maidan Wardak Province.
- Lake it feeds: The Helmand feeds into the Hamun Lake on the Afghanistan-Iran border.
- Importance: It is important to farmers in Iran's southeastern Sistan and Baluchistan province.
- Dam on it: Kajaki Dam.
- Tributary: The chief tributary of the Helmand River, is Arghandab River.
- Dispute: The dispute over the Helmand River, a critical source of drinking water, irrigation, and fishing is between Iran and Afghanistan.



- Maghreb region comprises western and central North Africa, including Algeria, Libya, Mauritania (also considered part of West Africa), Morocco, and Tunisia but excluding Egypt and Sudan.
- The Maghreb also includes the disputed territory of Western Sahara (controlled mostly by Morocco and partly by the Sahrawi Arab Democratic Republic) and the Spanish cities of Ceuta and Melilla.

### TBILISI, GEORGIA

#### Context

- India showcased PM Gathshakti National Masterplan at Tbilisi, Georgia.

#### Details

- Tbilisi is located in the South Caucasus.
- The city lies in Eastern Georgia on both banks of the Kura River.

#### Georgia

- Considered a transcontinental country, Georgia is located at the intersection of Eastern Europe and West Asia.
- Today, it is generally regarded as part of Europe.
- Georgia is largely surrounded by the Greater Caucasus and Lesser Caucasus mountains, which form part of a natural boundary between Eastern Europe and West Asia.



### ATLAS MOUNTAINS

#### Context

- An earthquake of magnitude 6.8 struck Morocco. The epicenter was located in the Atlas Mountains.

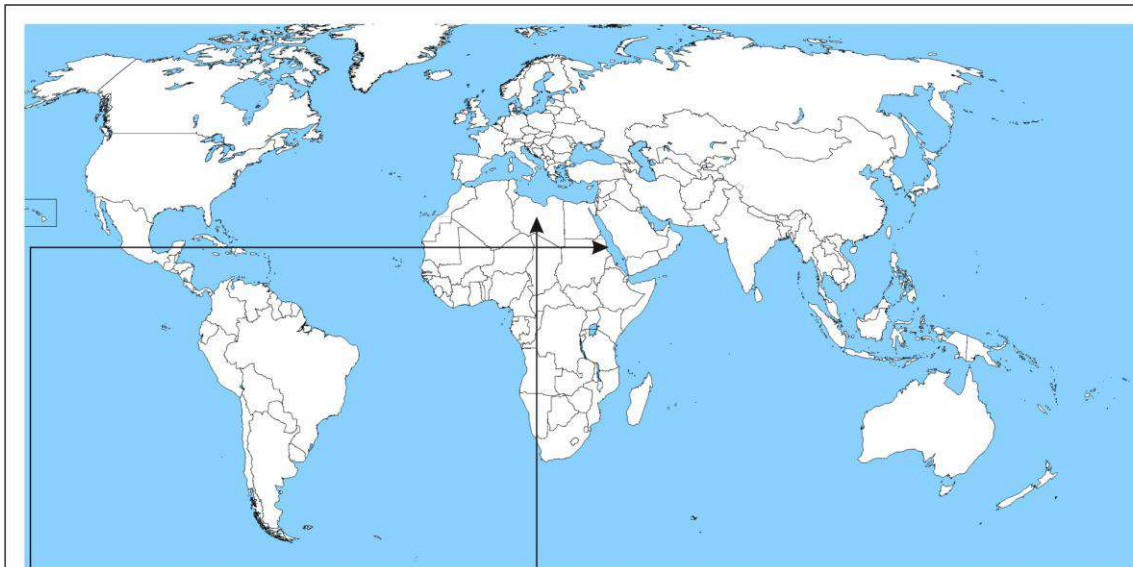
#### Details

- The Atlas Mountains are a mountain range in the Maghreb in North Africa.
- It separates the Sahara Desert from the Mediterranean Sea and the Atlantic Ocean.
- It stretches around 2,500 km through Morocco, Algeria and Tunisia.
- The range's highest peak is Toubkal, which is in central Morocco.
- The Atlas Mountains are primarily inhabited by Berber populations.
- Atlas Mountains gained their present-day shape when the continent of Africa collided with the Iberian Peninsula in what is known as a convergent plate boundary.





## 10.2 IN WORLD



### GRAND ETHIOPIAN RENAISSANCE DAM (GERD)

#### Context

- Ethiopia has announced that it has filled its Grand Ethiopian Renaissance Dam (GERD) on the Nile, which has been the source of a long-running water dispute with downstream countries Egypt and Sudan.

#### Details

- The Grand Ethiopian Renaissance Dam formerly known as the Millennium Dam and sometimes referred to as the Hidase Dam, is a gravity dam on the Blue Nile River in Ethiopia under construction since 2011.
- The dam is in the Benishangul-Gumuz Region of Ethiopia, about 14 km east of the border with Sudan.
- The primary purpose of the dam is electricity production to relieve Ethiopia's acute energy shortage and for electricity export to neighboring countries.
- The dam will be the largest hydroelectric power plant in Africa when completed as well as among the 20 largest in the world.

#### Blue Nile

- The Blue Nile is a river originating at Lake Tana in Ethiopia. It travels for approximately 1,450 km through Ethiopia and Sudan.
- Along with the White Nile, it is one of the two major tributaries of the Nile and supplies about 85.6% of the water to the Nile.
- At Khartoum, the Blue Nile joins the White Nile and, as the Nile, flows through Egypt to the Mediterranean Sea at Alexandria.



### DERNA CITY

#### Context

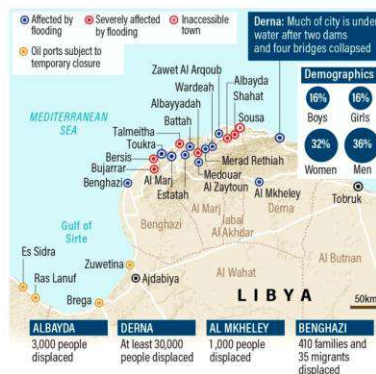
- About a quarter of Derna City was wiped out after dams burst in a storm.

#### Details

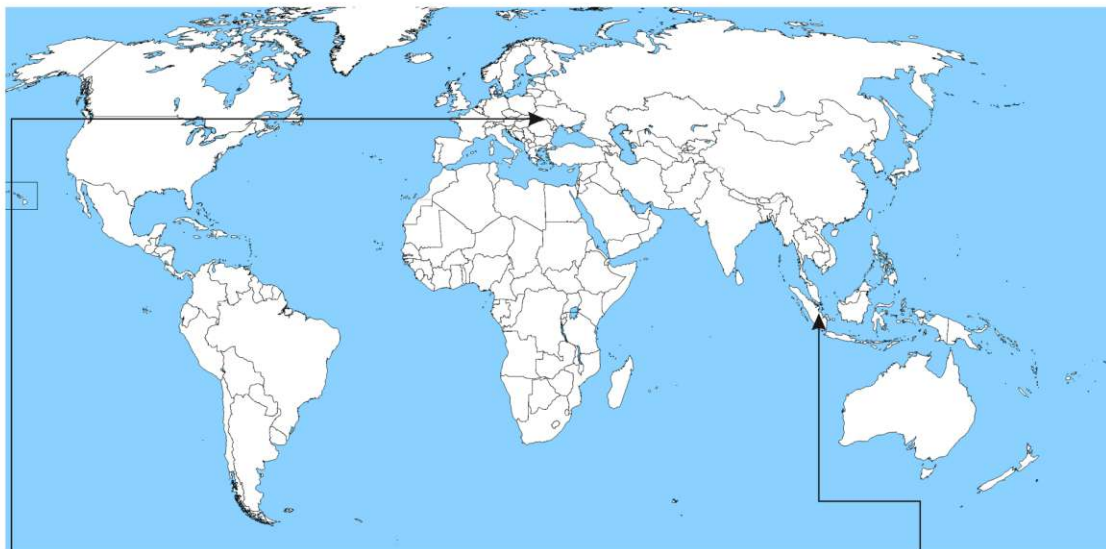
- Derna is a port city in eastern Libya.
- Derna has a unique location and physical environment, as it lies between Jebel Akhdar (also known as Green Mountain), the Mediterranean Sea, and the desert. The city is built along the Wadi Derna, an ephemeral river.
- Derna features a hot semi-arid climate (Köppen BSh) with strong Mediterranean influences.

#### Libya

- Libya is a country in the Maghreb region of North Africa.
- It is bordered by the Mediterranean Sea to the north, Egypt to the east, Sudan to the southeast, Chad to the south, Niger to the southwest, Algeria to the west, and Tunisia to the northwest.
- The largest city and capital, Tripoli, is located in north-western Libya.



## 10.2 IN WORLD



### NAGORNO-KARABAKH

#### About

- The territory lies in the mountainous South Caucasus region of Eastern Europe and Asia between the Black Sea and the Caspian Sea.
- Azerbaijan and Armenia fought a bloody war over Nagorno-Karabakh in the late 1980s and early 1990s, and it has been the trigger for further violence in the years since.
- Nagorno-Karabakh is part of Azerbaijan, but its population is majority Armenian. As the Soviet Union saw increasing tensions in its constituent republics in the 1980s, Nagorno-Karabakh voted to become part of Armenia - sparking a war that stopped with a ceasefire in 1994.



### MT. SEMERU VOLCANO

#### Details

- Semeru, often known as "The Great Mountain," is Java's highest and most active volcano.
- It last erupted in June 2023.
- Indonesia, which has the most active volcanoes in the world, is vulnerable to seismic activity due to its location on the Pacific's Ring of Fire.
- The Semeru volcano is also part of the Island arcs generated by the subduction of the Indo-Australian plate beneath the Sunda Plate (which is part of the Eurasian Plate). The trench developed here is known as the Sunda Trench, and its main section is known as the Java Trench.

#### Indonesia : eruption of Mount Semeru

