

# THE IAS GAZETTE

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## APTI PLUS

Academy for Civil Services Pvt. Ltd.  
CREATING CIVIL SERVANTS FOR THE NATION



TH EDITION

# INDIA-U.S. 2+2 MINISTERIAL DIALOGUE



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# 1. POLITY & GOVERNANCE

## 1.1 REGULATION OF ONLINE GAMBLING IN INDIA

### Context

- The Ministry of Electronics and Information Technology (MeitY) said that it had issued blocking orders against 22 “illegal betting apps and websites.

### Gambling in India: Stats

- According to a report by The Week, 40 percent of the internet users gamble in India, and the reports highlights that India might overtake United Kingdom as well in the numbers of gamblers per capita.

### What is Online Gambling?

- The **Constitution of India does offer a definition of Gambling**.
- The Online Gambling means to **use of the internet to place bets and earn money**.
- It is held in virtual environment. This includes playing of poker, casinos and sports betting.

### Gambling in the Indian Constitution

- India is one of the countries where gambling is stipulated in its Constitution as a legal activity.
- According to clause 34 of the Seventh Schedule of Schedule II (List of States) of the Constitution of India, 1950, separate states have the power to enact laws relating to gambling and betting.

### Is online gambling legal in India?

- Before the passage of the federal Public Gambling Act (PGA) of 1867, each state was in charge of enacting and enforcing its own set of laws and rules pertaining to the gaming industry.
- After the declaration of India's independence in 1947, **most of the states have enacted laws to regulate gambling-related activities that are based on PGA**. But apart from this, some states have passed laws that conversely prohibit gambling.

- Also, since PGA, was enacted prior to the emergence of online gambling, it is **limited to physical gambling only**. As a result, there is **no general federal-specific law that prohibits activities related to online gambling**.

### Game of Skill or Chance: Another point of contention

- The Public Gambling Act of 1867 differentiated between games of skill and games of chance and **declared all types of gambling to be unlawful in India**. However, the **Act did not outlaw games of skill**.
- This indicates that gamblers are able to place wagers on games of skill; yet, there is still a great deal of confusion around the definition of a game of skill.
- Even though cricket is not considered a game of skill, **lotteries and betting on horse races can still be conducted legally**.
- This indicates quite clearly that **there are no substantial standards to discern between games of skill and games of chance**.
- The Act, however, **does not include online gambling as a term**.

*Essentially, online gambling falls into a gray area and complexity arises because each state in India has the right to make its own decisions on this matter.*

### State-wise scenario

- Sikkim and Nagaland were the first states to integrate provisions relating to internet gambling in their legislation.
- A few states have made the Act their primary gaming legislation, but the majority of states continue to use their own regulations.
- In addition, the states of West Bengal, Nagaland, and Sikkim make it possible to play poker both online and offline after obtaining a licence from the state administration.
- Goa, which has authorised casinos to carry out gambling activities, is also included in this category.

## Inference

- Right now, there is no law explicitly stating that online gambling is illegal.
- And even though the Act tries to put a blanket ban on all kinds of gambling, there is not enough substantial material to know what a game of skill is and what is a game of chance to declare online gambling illegal.
- There exists a lacuna that leaves room for ambiguous interpretations.
- Therefore, it falls within the ambit of Indian Judiciary to interpret whether a particular game falls within ambit of the skill or not.

*In a nutshell, there is a lack of clarity and standardization in the laws across the country when it comes to online gambling.*

## Court Judgements

- There is only one judgement M/s Gaussian networks Pvt. Ltd. v. Monica Lakhanpal and State of NCT which discussed online gambling and stated the following:
  - If a game that involves a game of skills is played with stakes, then it does not constitute gambling.
  - If the players are attracted to the game just due to prize money, it is considered illegal.
  - In virtual platforms, any game of skill played for the purpose of gaining money would not be legal, even though it would be legal in the physical world.
  - Gaming sites cannot join the winning hands as it would promote online gambling.
- As a result, there is no longer a precedent that can be referred to that was established by this case because it was dismissed during the closing arguments of the revision petition.
- Having said this, Telangana was one of the first states to ban online gambling with a legislation in 2017, which was then followed by Kerala, Tamil Nadu, Andhra Pradesh, and most recently, Karnataka.

## Aftermath and Government's take

- It was brought to everyone's attention that in order for the ban to be fully implemented, the

government of the Union needs to block gambling websites and portals.

- All of these bans have been contested over time by rummy and poker portals, and the **Madras High Court was recently forced to reverse the improvements brought about by the amendments.**
- This has resulted in an enormous outrage in the community that frequently engages in virtual gambling.
- Apart from this, the **Prevention of Money Laundering Act 2022, Telecom Commercial Communications Customer Preference Regulations 2010, The Prize Competition Act 1955, Foreign Exchange Management Act 1999 and the Cable Television Network Rules 1994** put forth some regulations on the promotion of gambling.
- The government has been trying to make a legislation which regulates gambling, as it would not only stop people from losing money but also generate revenue for the economy if it is taxed properly and legally.

## Future of online gambling in India

- In recent years, online gambling has been a hotly debated issue in India.
- In July 2018, the Law Commission of India (LCI) urged the government to legalize gambling.
- And it came out with a detailed report recommending that India should legalize gambling to raise badly needed government revenue.

## Conclusion

- In conclusion, **India's laws and regulations surrounding online gambling are complex and constantly evolving.**
- While the legal framework is not entirely clear, it is important for individuals to understand the potential legal consequences of participating in online gambling activities.
- The government's efforts to combat illegal gambling through strict enforcement and punishment demonstrate its commitment to protecting citizens from the negative effects of gambling.

- Ultimately, responsible gambling practices and staying informed about the legal

landscape can help ensure a safe and enjoyable online gambling experience in India.

## 1.2 NATIONAL PHARMACEUTICAL POLICY, 2023

### Context

- The Department of Pharmaceuticals has released an approach paper on the draft National Pharmaceutical Policy, 2023 for stakeholder consultation, with a vision of "Empowering Health for All: Pioneering Excellence in Pharmaceuticals".

### National Pharmaceutical Policy, 2023

#### Emphasis

- It emphasizes a holistic policy approach to address the challenges faced by Indian pharmaceutical industries and provides definitive policy interventions to enhance the collective ecosystem.

#### Aspiration of the Policy

- The policy aspires to establish India as a global leader in pharmaceuticals backed by world-class infrastructure and an enabling ecosystem, where cutting-edge research and development lead to the creation of innovative and affordable healthcare solutions, fostering a healthier, more prosperous nation and contributing to global health equity, aligning with the vision of Amrit Kaal Vision@2047.

#### Vision

- The Vision of the National Pharmaceutical Policy for the Government of India is to establish a healthcare ecosystem that exemplifies excellence, innovation, and inclusivity.

#### Aim of the Policy

- The policy aims to encourage a paradigm shift in the Indian pharmaceutical industry, moving from the conventional approach of "incremental innovation" to embracing "disruptive innovation" with the introduction of novel drugs, devices, and technologies and establishing "Innovation-Hubs" in India".

#### It aims at:

- Enhanced accessibility of essential and quality medicines through penetration of Pradhan Mantri Bhartiya Janaushadhi Pariyojana Kendras in remote areas,
- Digitisation and technology upgradation in the delivery of services & products under Jan Aushadhi Pariyojana,
- Ensures access to newer pharmaceutical technologies to domestic manufacturing so as to enhance their capacity and capability to make essential medications affordable and thereby,
- Reducing the financial burden on patients, thus promoting better healthcare outcomes and reducing overall healthcare costs,
- Identifying critical suppliers, de-risking & decarbonizing the supply chain, and promoting local sourcing, and ensuring accessibility and affordability of patient-centric products for better healthcare outcomes for universal health coverage, by building upon partnerships across industry, science, and governments.
- It will also look at encouraging innovation to reduce production costs while maintaining quality as per international norms.

### Objectives of the National Pharma Policy

- The objectives of the National Pharma Policy encompass five key pillars –
  1. Fostering Global Pharmaceutical Leadership,
  2. Promoting Self Reliance,
  3. Advancing Health Equity and accessibility,
  4. Enhancing Regulatory Efficiency in the Indian Pharmaceutical Sector and
  5. Attracting investments



### Primary Strategy

- Its primary strategy is to **inform, clarify, strengthen, and prioritize India's key goals and parameters in shaping the pharmaceuticals in all its dimensions.**
- These dimensions include investments, access to technology, research, and development, development of human resources, and strengthening regulation and policy by indicating a list of **time-bound quantitative and qualitative goals.**
- These goals are **aligned with the government's vision of Amrit Kaal Vision@2047.**

### Focus Areas

- In order to achieve this, the Policy has also identified 11 areas to focus on, including
  - 1) Nurturing & Promoting Research, Development & Innovation;
  - 2) Affordable, Accessible & Equitable Access to Health Coverage;
  - 3) Facilitating Access to Funding;
  - 4) Regulatory Harmonization: Creating Conducive Regulations including Price Regulation and Transparency;
  - 5) Initiate Capacity Building & Development of Skilled Manpower;
  - 6) Enhancing Policy & Program Interlinkages;
  - 7) International Collaboration;
  - 8) Infrastructure Enhancement;
  - 9) Leveraging Digital Transformation;
  - 10) Sustainability /Reducing Carbon Footprint; and
  - 11) Strengthening of Intellectual Property.

### Working


- The Task Force will draw upon resource persons from Departments and Organizations related to the implementation as the success of the policy requires coordinated action by several agencies.
- The policy aims to complement National R&D Policy work on regulatory **streamlining by supporting process optimization, development of technology based/enabled platform, regulatory capacity, and legislation.**

### Guidelines pertaining to FDI

- Recognizing the significance of Foreign Direct Investments, the policy offers clear guidelines and transparent procedures for foreign investors looking to establish or expand their operations in India's pharmaceutical sector.
- This promotes **technology transfer, knowledge exchange, and capital infusion.**
- It also **looks at fostering cooperation with foreign governments, investors, and financial institutions to cultivate a favourable FDI climate in these sectors** by enabling technology transfer, **providing opportunities to Invest in Bulk Drug Parks and Medical Device Parks** to bolster production capacities, and open avenues for joint partnerships with National Institute of Pharmaceuticals Education and Research (NIPERs).

### Implementation

- A High-level Task Force will be set up in the **Department of Pharmaceuticals** under the Minister for Chemicals and Fertilizers to guide and review the



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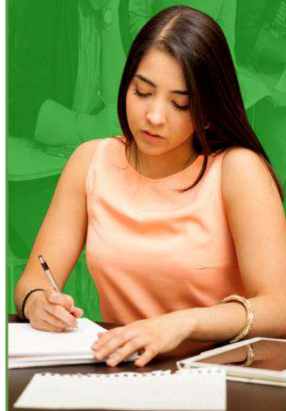
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**ONLINE & OFFLINE**

implementation of the Policy.

- The Policy will be supported by a **ten-year strategy and action plans** that will spell out the policy and programmatic interventions required from time to time within the Policy.

### Need of the Policy

- Despite strong fundamentals, the Indian Pharmaceutical Industry faces various challenges, including
- a **high degree of import dependence** on active pharmaceutical ingredients (API) and key starting materials (KSMs);
- relatively low pace of development of biologics, biosimilars and other emerging products/trends;
- regulation inefficiencies,
- lack of skilled human resource and
- access to funding for innovation in the Pharma-Med Tech domain among others.
- A coherent policy framework is vital to ensure that Indian pharmaceutical companies can overcome these challenges, maintain international compliance, and consistently deliver high-quality, safe, and efficacious medicines.

### Significance

- The policy not only **promotes regulatory efficiency, research, and innovation but also ensures equitable access to medicines, strengthens healthcare self-sufficiency, and enhances India's global standing in the pharmaceutical sector.**
- It is a **critical tool to propel the nation towards a healthier, more prosperous future, where healthcare is both accessible and of the highest quality.**

## 1.3 ROAD ACCIDENTS IN INDIA - 2022

### Context

- The Ministry of Road Transport and Highways Tuesday (October 31) released their annual report titled 'Road Accidents in India - 2022'.

### Findings of the Report

- As per the report, a total of 4,61,312 road accidents have been reported by States and Union Territories (UTs) during the calendar year 2022.
- These accidents claimed 1,68,491 lives and caused injuries to 4,43,366 persons.
- This marks **an increase of 11.9% in accidents, 9.4% in fatalities, and 15.3% in injuries compared to the previous year.**

### Key takeaways from the report

#### Overspeeding is the biggest killer

- In 2022, **overspeeding accounted for 72.3 percent of the total road accidents**, 71.2 percent of total deaths and 72.8 percent of total injuries, up 12.8 percent, 11.8 percent

and 15.2 per cent respectively when compared to the previous year.

- **Driving on the wrong side was the second highest cause of total road accidents** in 2022, accounting for 4.9 per cent of all accidents.

#### Most accidents occurred on straight roads

- As per the data, **67 percent of all accidents occurred on straight roads.**
- This is over four times the total number of accidents that took place on curved roads, roads with potholes, and roads having a steep gradient, combined (13.8 percent).

#### 'Hit from back' collisions were the most common

- Most collisions in 2022 were, what the report **classifies as 'hit from back'.**
- These accounted for over 21 percent of all collisions, **followed by 'head-on collisions' which accounted for 16.9 percent.**

#### Most road accidents occurred on a clear day

- Almost **three-fourths of all accidents and fatalities** took place under 'sunny/clear' weather.

- Accidents under adverse weather conditions such as rain, fog and hail accounted for just about 16.6 percent of total road accidents during 2022.

#### Two-wheelers accounted for the highest number of accidents and deaths

- A total of 63,115 accidents involving two-wheelers took place in 2022. These led to 25,228 deaths.
- Cars and pedestrians saw the next highest number of accidents, at 29,005 (10,174 deaths) and 20,513 (10,160 deaths) respectively.

#### Highest fatality rate in Sikkim, and lowest in Ladakh, Daman & Diu

- Fatality rate is used to explain road accidents relative to vehicular population in a given



location.

- It is measured by the number of road accident fatalities per 10,000 vehicles.
- Sikkim reported the highest fatality rate, standing at 17. UTs Ladakh and Daman & Diu had the lowest fatality rate at 0. The all India rate stood at 5.2.

#### Tamil Nadu reported the highest number of accidents

- Tamil Nadu reported 64,105 total accidents, 15.1 per cent up from the previous year.
- This accounted for over 13 percent of total accidents reported in India.
- At the next spot was Madhya Pradesh, which reported 54,432 accidents.



## 1.4 ANNUAL SURVEY OF INDIA'S CITY-SYSTEMS (ASICS) 2023

### Context

- Recently, the report, Annual Survey of India's City-Systems (ASICS) 2023, was published by the Janaagraha Centre for Citizenship and Democracy, a non-profit institution.

### Findings of the Report

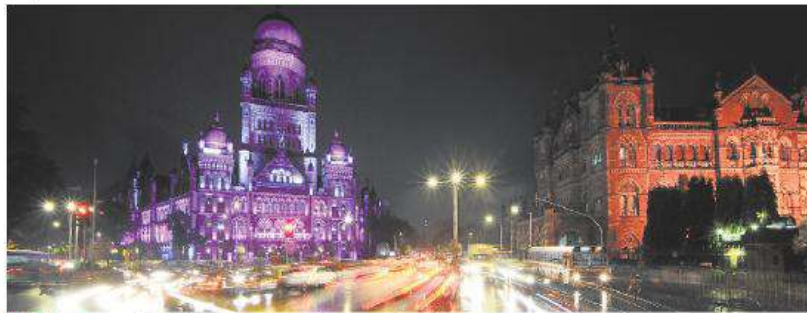
- A majority of local governments are financially dependent on their State governments.
- They also have **limited control over who to hire and how to distribute work**.
- Only Assam empowers its city governments to collect all key taxes.
- Except Five States — Bihar, Jharkhand, Odisha, Meghalaya, and Rajasthan — all the others have to get approval from the State before borrowing money.
- There is asymmetry of power across four city categories — *megacities (>4 million (mn) population), large cities (1-4 mn), medium cities (0.5 mn-1 mn), and small cities (<0.5 mn)*.
- While megacities have more of a say over their finances, their mayors do not have a five-year tenure and are not directly elected.

- More mayors in smaller cities have a five-year tenure and are directly elected, but lack a say on the city's finances.
- **Mayors and councils have limited power in staff appointments and promotions**. For instance, only a handful of States have empowered their city governments to appoint municipal commissioners.
- In fact, no city has complete power over its staff.
- Cities especially lack control over their senior management teams who are deputed directly by State governments, which makes it tough to initiate disciplinary proceedings against them if needed. The report says because of this, they are not able to build a "strong organization or exact accountability" from the workers.
- There is a lack of transparency in publishing cities' civic information which citizens can access easily.
- Only 11 of the 35 States/Union Territories have enacted the Public Disclosure Law that mandates publishing of key civic data.

- One capital city in India publishes its internal audit report and two publish annual reports.
- Eleven of them publish their minutes of meetings and 17 make available their decision-making process.
- More important is financial transparency, where the city has to make available its overall budget, budget for each ward, and financial statements every quarter and annually. Data show that no city publishes a quarterly financial audited statement.
- Only 28% of them disseminate their annual audited financial statements. The number goes down further to 17% if only the megacities are considered. While bigger cities do publish their city budgets, smaller cities lag there with just 40%-65% of them publishing that information. Worryingly none of the mega, large, and medium capital cities publish their internal audit information.

## Limitless cities, limited power

The charts and tables were sourced from the Annual Survey of India's City-Systems (ASICS) 2023 published by Janaagraha, a Bengaluru-based non-profit



**City lights:** A view of the Brihanmumbai Municipal Corporation building. ARUNANGSU ROY CHOWDHURY

**Table 1 |** The table shows asymmetry of mayor/council powers across various city categories

Percentage of cities...	Mega	Large	Medium	Small	Total
with a five-year mayoral tenure	38%	68%	67%	84%	83%
with a directly elected Mayor	0%	39%	33%	36%	36%
that can approve the city budget	75%	34%	40%	11%	12%
that can borrow without the prior sanction of the State	13%	16%	12%	15%	15%
that can invest without the prior sanction of the State	75%	63%	40%	42%	42%
that have complete power over their staff	0%	0%	0%	0%	0%
that can levy all key taxes	0%	0%	2%	0%	2%
Average no. of functions devolved by law (number)	11	8	13	11	9
Total population (in mn)	57.84	57.88	28.93	173.9	318.5

Mega cities (>4 million population), large cities (1-4 million), medium cities (5,00,000-1 million), small cities (<5,00,000)

**Table 3 |** The table shows the asymmetry of financial transparency in the capital cities of India. Figures denote % of capital cities

Type of data	Mega	Large	Medium	Small	Total
Annual audited financial statement	17%	50%	29%	23%	28%
Quarterly audited financial statement	0%	0%	0%	0%	0%
City budget	100%	100%	57%	38%	66%
Ward budget	17%	0%	0%	0%	3%
Internal audit	0%	0%	0%	8%	3%

**Chart 2 |** The chart shows the availability of civic data in capital cities



**Chart 4 |** The chart shows the vacancy (in %) in local governance



**Chart 5 |** The chart shows municipal staff per lakh population in Indian and global cities



- Due to poor control over the appointment of staff, the local governments suffer from high levels of unfilled posts.
- Data show that 35% of posts in India's municipal corporations are vacant.
- The vacancy progressively worsens with 41% of posts being vacant among municipalities and 58% being vacant in town panchayats.
- A comparison with other metropolises such as New York, London, and Johannesburg show that such a crippling shortage of staff is limited to Indian cities.
- The number of city staff per one lakh population. There are 5,906 city workers in New York and 2,936 in London for every one lakh population compared to just 317 in Bengaluru, 586 in Hyderabad, and 938 in Mumbai.
- Cities such as New York also been empowered to impose taxes, approve their own budget, invest and borrow without approval.

**Note:** Findings of the Report can be used as statistics, data, and fodder points while writing answers for Mains Examination.

## 1.5 ENERGY CONSERVATION BUILDING CODE (ECBC)

### Context

- The International Energy Agency highlighted that **India's Energy Conservation Building Code (ECBC)**, sets it apart from other developing economies. In other developing economies **energy efficiency in buildings stands out as a laggard.**

### ECBC

- ECBC was **launched by the Ministry of Power (MoP)** in May 2007.
- It was the **first step towards promoting energy efficiency in the commercial building sector.**
- The Energy Conservation Building Code (ECBC) **sets minimum energy standards for new commercial buildings having a connected load of 100 kW or contract demand of 120 kVA or more.**
- It is technologically neutral, **promotes renewable energy, and also emphasizes on the life cycle cost of building.**
- The updated code was launched in 2017, which had additional priorities of renewable energy integration, ease of compliance, inclusion of passive building design strategies and flexibility for the designers.

### Energy Conservation Building Code 2017

#### About

- The **updated Energy Conservation Building Code 2017, ECBC 2017**, developed by Ministry of Power and Bureau of Energy Efficiency (BEE) prescribes the energy performance standards for new commercial buildings that are to be constructed across the country.
- The code provides parameters for builders, designers and architects by integrating renewable energy sources in building design by incorporating passive design strategies.

#### Development

- The new code was **developed by BEE with technical support from United States Agency for International Development (USAID)**. It was developed as a part of the U.S.-India bilateral Partnership to Advance Clean Energy.

#### Nature of Code

- ECBC are **voluntary in nature** and has been accepted by majority of states (22 states), who have infused their own modifications to the codes.

#### Features of Energy Conservation Building Code 2017

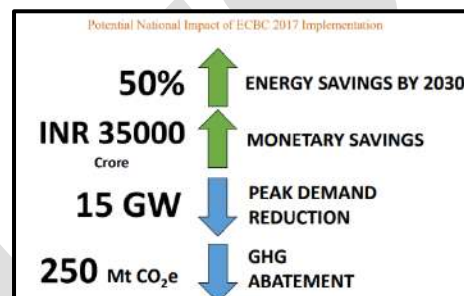
- Applies to new commercial buildings with a **connected load of 100 kW & more or contract demand of 120 kVA or more;**
- Introduces passive design features such as **daylight requirements and shading provisions;**
- Introduces **provisions of installing Renewable Energy Systems;**
- Sets minimum energy efficiency standards for design and construction;
- Encourages energy efficient design or retrofit of buildings;



- Pathway toward **Near Zero Energy Buildings**
- The ECBC-compliant buildings **need to demonstrate minimum energy savings of 25%**.
- **Further energy savings of 35% and 50%** will lead the new buildings to achieve higher grades like ECBC Plus or Super ECBC status respectively.
- One of the major updates to the code is the **inclusion of incremental, voluntary energy efficiency performance levels.**
- **ECBC 2017 sets three Tiers of Building Energy Performance:**
  1. ECBC (requires 25% less energy than typical building);
  2. ECBC+ (requires 35% less energy than typical building);
  3. Super ECBC (requires 50% less energy than typical building).

#### Compliance Requirements

- The building should comply with the provisions of ECBC 2017:
  - ✓ New commercial buildings with load demand > 100 kW or 120 kVA;
  - ✓ Additions to existing commercial buildings if connected load demand of building with additions > 100 kW or 120 kVA;
  - ✓ Alterations to existing commercial buildings if altered part of building or systems > 100 kW or 120 kVA of load demand.



#### Partners

- Implementation partners are **Central Public Works Department, State Designated Agencies (SDAs), State Public Works Department, Urban Development Department.**

#### Target Beneficiaries

- CPWD, Town and Country Planning, State PWDs, State Designated Agencies, UDD, Municipal corporations/ULBs, DISCOMs, Electrical Inspectorate, Architect, Engineers, Institutions/organizations, Builders, Developers.

#### **Significance**

- The adoption of ECBC 2017 is **estimated to achieve a 50% reduction in energy use for new commercial building construction by 2030.**
- It will **lead to annual energy savings of about 300 Billion Units by 2030** and peak demand reduction of over 15 GW in a year.
- It will **lead to expenditure savings equivalent to Rs 35,000 crore and will lead to 250 million tonnes of CO2 reduction.**

## 1.6 DIGITAL ADVERTISEMENT POLICY, 2023

#### **Context**

- The Ministry of Information and Broadcasting approved the **Digital Advertisement Policy, 2023.**

#### **Aim**

- To enable and **empower the Central Bureau of Communication to undertake campaigns in the Digital Media Space.**

#### **Objective**

- The policy also **seeks to streamline the process through which CBC can place advertisements for government clients' social media platforms.**

#### **Mission**

- To **disseminate information and create awareness regarding various schemes, programs, and policies of the Government of**

India in response to the evolving media landscape and the increased digitalization of media consumption.

### Provisions

- The CBC now for the first time **will be able to channelize its public service campaign messages through mobile applications.**
- The policy also **introduces competitive bidding for rate discovery, ensuring transparency and efficiency.** Rates discovered through this process will remain valid for three years and will be applicable to all eligible agencies.
- The policy also **empowers CBC to empanel digital media agencies to enhance its outreach through the various platforms.**
- For empanelment with the CBC, websites and mobile applications have been classified into four categories - more than 20 million unique users (A+), between 10 and 20 million unique users (A), 5-10 million unique users (B), and 0.25-5 million unique users (C).
- OTT platforms have been classified into two categories - more than 2.5 million unique users in Category A and those with 0.5 to 2.5 million unique users in Category B.
- Podcasters or digital audio platforms should have a minimum of five lakh unique users to be eligible for empanelment with the CBC. Such platforms too have been classified as 'A' which have more than 2.5 million unique users and 'B' with unique users between 0.5-2.5 million.
- The policy also **empowers CBC to on board New and Innovative Communication Platforms** in the Digital Space with the approval of a duly constituted committee.

### CENTRAL BUREAU OF COMMUNICATION (CBC)

- Central Bureau of Communication (CBC) is a unit of the Ministry of Information and Broadcasting, that has the mandate of providing 360-degree communication solutions to Ministries, Departments, Public Sector Undertakings (PSUs), and autonomous bodies.
- It is responsible for creating awareness and disseminating information about various government programs, schemes, and policies in India. CBC is committed to adapting to the changing media landscape and embracing new technologies to reach a wider audience.

## 1.7 REPRESENTATION OF THE PEOPLE ACT, 1951

### Context

- The Supreme Court issued a slew of directions to monitor the early disposal of pending criminal cases against Members of Parliament and Members of Legislative Assemblies.

### Directions issued by SC

- Criminal cases against members of Parliament, legislative assemblies, and legislative councils be given priority and the trials not be adjourned in such matters except "for rare and compelling reasons".
- There are as many as 5,175 cases pending as of November 2022 against MPs and MLAs across the country.
- These cases have a direct bearing on our political democracy.
- Hence, there is a compelling need to make every effort to ensure that these cases are taken up on priority and decided expeditiously.
- Confidence and trust of the constituency in their political representative, be it an MP or an MLA, is necessary for the interactive, efficient, and effective functioning of a parliamentary democracy.
- The Supreme Court has instructed high courts to **oversee criminal cases against MPs and MLAs** and take **suo motu action against them.** The court has also issued guidelines to expedite the trial process and ensure timely completion.

- The Supreme Court of India has directed High Courts to establish special benches to expedite the trials of over 5,000 criminal cases against lawmakers. The court emphasized that these cases have a direct impact on the country's political democracy.
- It further instructed that criminal cases involving Members of Parliament, Members of Legislative Assembly, and Members of Legislative Council should be given priority and adjournments should only be granted in exceptional circumstances.
- Currently, there are 5,175 pending cases against lawmakers in India, with over **40% of them pending for more than five years.**

### Representation of the People Act, 1951

- The Representation of the People Act, 1951 is an Act of Parliament of India to provide for the conduct of election of the Houses of Parliament and to the House or Houses of the Legislature of each State, the qualifications and disqualifications for membership of those Houses, the corrupt practices and other offenses at or in connection with such elections and the decision of doubts and disputes arising out of or in connection with such elections.
- It was introduced in Parliament by law minister Dr. B.R. Ambedkar.
- The Act was enacted by the provisional parliament under Article 327 of the Indian Constitution, before the first general election.

[READ ABOUT THE DETAILED PROVISIONS OF RPA, 1951 ACT FROM POLITY LAKSHMIKANT BOOK](#)

### What are 'corrupt practices' under the RPA, 1951?

- Section 123 of the Act defines 'corrupt practices' to include bribery, undue influence, false information, and promotion or attempted promotion of "feelings of enmity or hatred between different classes of the citizens of India on grounds of religion, race, caste, community, or language" by a candidate for the furtherance of his prospects in the election.
- Section 123 (2) deals with 'undue influence' which it defines as "any direct or indirect interference or attempt to interfere on the part of the candidate or his agent, or of any other person, with the consent of the candidate or his election agent, with the free exercise of any electoral right."
- This could also include threats of injury, social ostracism, and expulsion from any caste or community.
- Moreover, convincing a candidate or an elector that they will become "an object of divine displeasure or spiritual censure" will also be considered an interference "with the free exercise of the electoral right of such candidate or elector."
- Section 123 (4) extends the ambit of "corrupt practices" to the intentional publication of false statements that can prejudice the outcome of the candidate's election.
- Under the provisions of the Act, an elected representative can be disqualified if convicted of certain offences; on grounds of corrupt practices; for failing to declare election expenses; and for interests in government contracts or works.

## 1.8 DRAFT BROADCASTING SERVICES BILL

### Context

- The Information and Broadcasting Ministry has released a Draft Broadcasting Services Bill to replace the Cable and TV Act.

### Need of the Bill

- With the digitization of the broadcasting sector, especially in cable TV, there is a

growing need to streamline the regulatory framework.

- This involves ensuring ease of doing business and enhancing adherence to the Programme Code and Advertisement Code by the broadcasters and Distribution Platform Operators.



- Recognizing the need for a more cohesive approach, the existing fragmented regulatory framework is required to be replaced with a new, comprehensive law.

### Ambit

- The bill includes over-the-top (OTT) broadcasting services (streaming services) such as Disney + Hotstar, Netflix, and Amazon Prime under the regulatory ambit.

### Objective

- It seeks to provide Content Evaluation Committees and a Broadcast Advisory Council for self-regulation, different program and advertisement codes for different Broadcasting Network Operators, Accessibility measures for persons with disabilities, and statutory penalties, etc.

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**Key Highlights**

**Consolidation and Modernization:**  
It addresses a long standing need of consolidating and updating the regulatory provisions for various broadcasting services under a single legislative framework. This move streamlines the regulatory process, making it more efficient and contemporary. It extends its regulatory purview to encompass broadcasting over-the-top (OTT) content and digital news and current affairs currently regulated through IT Act, 2000 and regulations made there under.

**Contemporary Definitions and Future-Ready Provisions:**  
To keep pace with the evolving technologies and services, the bill introduces comprehensive definitions for contemporary broadcasting terms and incorporates provisions for emerging broadcasting technologies.

**Strengthens the Self-Regulation Regime:**  
It enhances self-regulation with the introduction of 'Content evaluation committees' and evolves the existing Inter-Departmental Committee into a more participative and broader 'Broadcast Advisory Council'.


**Differentiated Programme Code and Advertisement Code:**  
It allows for a differentiated approach to Programme and Advertisement Codes across various services and require self-classification by broadcasters and robust access control measures for restricted content.

**Accessibility for Persons with Disabilities:**  
The bill addresses the specific needs of persons with disabilities by providing for enabling provisions for issue of comprehensive accessibility guidelines.

**Statutory Penalties and Fines:**  
The draft Bill introduces statutory penalties such as: advisory, warning, censure, or monetary penalties, for operators and broadcasters. Provision for imprisonment and/or fines remains, but only for very serious offenses, ensuring a balanced approach to regulation.

**Equitable Penalties:**  
Monetary penalties and fines are linked to the financial capacity of the entity, taking into account their investment and turnover to ensure fairness and equity.

**Infrastructure Sharing, Platform Services and Right of Way:**  
The bill also includes provisions for infrastructure sharing among broadcasting network operators and carriage of platform services. Further, it streamlines the Right of Way section to address relocation and alterations more efficiently, and establishes a structured dispute resolution mechanism.



### Concerns raised

- Some experts have also raised concerns about the increase in compliance. For instance, the draft Bill states that every broadcaster or broadcasting network operator will need to constitute one or more Content Evaluation Committees (CECs) consisting of eminent individuals representing various social groups.
- In addition to original domestic content, most OTT platforms licence content from abroad, subjecting each such creative content to CEC scrutiny **will impose burdens on the OTT platforms and impact user experience, too.**

## Need of the hour

- The proposed Bill is a “paradigm shift” from the three-decade-old Cable Television Network (Regulation) Act and the “need of the hour”, in view of the growing digital wave.
- It is necessary that in this growing digital era, the new Bill should not increase red tapism in the field of broadcasting services.
- Further, the enforcement of regulations over the OTT platforms should be free from any political or other extraneous influences.

## 1.9 PIRACY IN INDIA

### Context

- To check the piracy of the film content, the Ministry of Information and Broadcasting has established an institutional mechanism.

### Digital Piracy

- Digital piracy refers to the illegal copying or distribution of copyrighted material via the Internet.

### Piracy Globally

- Globally, there has been a **21.9% increase in piracy sites visits in 2022 as compared to 2021**, with the number of visits rising from 116.24 billion to 141.7 billion --- *Report by Global Advisory Firm Ankura.*

### Piracy in India

- In India, online content piracy is a significant issue, particularly in the film and music industries.
- India has been **ranked third (after the US and Russia) in the list of highest contributors of visits to content piracy websites** with over 7 billion visits through torrent sites in 2022--*Report by Global Advisory Firm Ankura.*
- A lot of **pirated content is available on messaging apps like Telegram and WhatsApp**, which circulate information about torrent sites or aggregator apps that ordinarily may not be found on Google Play Store.
- TV content accounted for 46.6% of all traffic to piracy websites followed by publishing content (books) which accounted for 27.80%.

### Reasons for the rise of Digital Piracy

- Large population of Internet users: The country has a large population of Internet

users, and access to high-speed Internet is becoming more widely available, which has led to an increase in the number of people accessing pirated content.

- Advent of new technology: Access to cheap (or free) content can appear lucrative to many. The advent of new technology has made pirated content readily available to those whose geographical locations otherwise restrict them from accessing it.
- Streaming Platforms are Hiking Prices: Streaming platforms are increasing their prices. The most notorious example is Netflix. So, people have decided to explore the alternative of pirating content instead.
- An overwhelming amount of content: Too much content is out there, and people are not willing to pay the price for something they aren't going to use. People are favouring torrenting to get the content to view the one thing they want to see rather than paying for a library of content they don't want

### Implications

- Loss of Revenue: Video streaming platforms in India are **losing 25-30% of overall revenues to piracy**, as addressable audiences continue to get access to content without credentials.
- Lack of awareness: In India, the awareness of the illegalities of piracy is dismal, and there is **not enough legal infrastructure to check for compliance.**
- Loopholes in existing laws: Existing laws, such as the Copyright Act, 1957, contain loopholes and are not stringent enough, making enforcement challenging.
- Nascent stage of new laws: Adherence to newer laws, including the National

Intellectual Property Rights (IPR) Policy 2016, and the setting up of Cyber Digital Crime Units, are still at the nascent stage.

- **Absence of adequate laws:** In the absence of adequate laws, courts have only been able to pass John Doe's orders and dynamic injunctions.
- **Impact on original content:** Piracy can impact the consumption of original content through password and credential sharing, sending files over the internet, and purchasing illegal streaming devices and services.
- **Reputational Harm:** These are available at just a fraction of the cost to the consumer but impose mounting revenue losses and reputational harm on the original creators.

### Recent step taken

- Twelve officers from the **Central Board of Film Certification (CBFC)** and the Ministry have been designated to receive complaints against piracy and direct the intermediaries to take down pirated content from digital platforms including websites, apps, and links.
- The pirated content has to be removed from internet links within a period of 48 hours after receiving directions from the Nodal Officers.

### Significance

- The step will help in curbing piracy which has increased due to spread of internet.
- This will also help the content creators as the film industry is facing losses of twenty thousand crore rupees due to piracy.

### Cinematograph (Amendment) Act 1952

- Parliament had passed the Cinematograph (Amendment) Act 1952 this year.
- The amendment includes a strict punishment of a minimum three months imprisonment and a fine of three lakh rupees which can be extended up to three years imprisonment and fine up to five percent of the audited gross production cost.

### Combating Piracy

- There is a substantial need to implement tough IP and copyright laws to protect the creators and their content.
- IP laws are crucial for legal experts and all stakeholders involved in creating and facilitating content.
- Formulating an IPR framework is also necessary to increase IP numbers in India, which is currently ranked 43 out of 55 countries in the global IP index.
- In a competitive global market for investment in creativity, India with its natural advantages stands to gain from a strengthened IP environment.
- To combat digital piracy, the **movie and publishing industries should work in tandem to supervise the distribution and prevent misuse of content.**
- Moreover, consumers must be made aware of the evils of piracy. It is **not only the duty of a single body to curb piracy, but the responsibility of society as a whole to fight against it.**

## 1.10 STATE FUNDING OF ELECTIONS

### Context

- The Supreme Court reserved judgment in a batch of petitions challenging the electoral bonds scheme.
- The question has arisen whether elections be state-funded or not.

### What is state or public funding of elections?

- This means that the **Government gives funds to political parties or candidates for contesting elections.**

- Its main purpose is to make it unnecessary for contestants to take money from powerful moneyed interests so that they can remain clean.

### What is direct and indirect state funding of elections?

- **Direct funding** means giving funds directly to political parties (or candidates).
- **Indirect funding** takes the form of various subsidies or access. Indirect funding can take

the form of subsidized or free media access, tax benefits, free access to public spaces for campaign material display, provision of utilities and travel expenses, transport, security etc.

### What is the status in India?

- While the political parties, Election Commission and various bodies, remain committed to state funding of elections, **there has been little progress on this.**
- Current state funding measures include the provision of free time on public broadcasters for national parties in general elections and for registered state parties in state legislature elections.
- Besides this, **national parties are provided some benefits like security, office space, utility subsidies etc.**
- Another form of indirect state funding available in India is **that registered political parties do not have to pay income tax, as laid down in S.13A of the Income Tax Act.**

### What have various commissions and committees said about this?

- Some major reports on state funding include those given by the ***Indrajit Gupta Committee on State Funding of Elections*** (1998), ***Law Commission Report on Reform of the Electoral Laws*** (1999), ***National Commission to Review the Working of the Constitution*** (2001) and the ***Second Administrative Reforms Commission*** (2008).
- Except for the 2001 report, **all other recommended partial state funding only, given the economic situation of the country.**
- The 1998 report said that state funds should be given only to registered national and state parties and that it should be given in kind only.
- The 1999 report concurred with this but also recommended first putting a strong regulatory framework in place including internal elections, accounting procedures etc.
- The 2001 report said that first a regulatory framework needs to be established before thinking about state funding.

### Arguments Favouring State Funding

#### Fair elections:

- In State Funding funds are equitably distributed among parties. Hence, it will bring a level playing field for all types of parties.

#### Internal Democracy

- State funding would ensure that there is a demand for internal democracy in parties.
- This pertains to women representations, representations of weaker sections etc.

#### Reduce crony capitalism

- There is a growing nexus between corporations and politicians due to the angle of funding and donations by business houses.
- Access to politicians gives big businessmen the chance to influence government policy in a manner that is beneficial to them.
- Breaking the Politics-Business nexus could be a reality with Public Funding. It would thereby help curb corruption.

#### Reduced Criminalization of Politics

- Vohra Committee (1993) reported on the problem of the criminalization of politics and the nexus among criminals and politicians.
- The high cost of campaigning is met by people with criminal backgrounds. State Funding can curb this.

### Arguments against State Funding

#### Large fiscal deficit:

- India already has a widening fiscal deficit. This could widen once state funding is introduced.
- State Funding could also reduce the resources available for social expenditures like welfare schemes and subsidies.

#### Undue Pressure on Taxpayers

- In state funding of elections, the taxpayers are forced to support those political parties/candidates also, whose views are not supported by them.

#### Impact on Party-People relations

- With State funding parties no more depend on the people for mobilization of party fund. So, it increases the distance between political leaders and citizens of the country.

#### Hegemony of ruling party:

- The ruling party could have an undue influence on the entire process as it controls the public purse.

#### Encourages passivity:

- Once State Funding is implemented Political parties could become organs of the state, instead of being parts of the civil society.

#### Creates 'paper tigers':

- State Funding could encourage parties and candidates run for elections just for the sake of availing monetary benefits.

#### Fund Diversion

- State funding could be used as a supplement of the candidate's expenditure.

#### Weak institutional setup:

- The Election Commission at present has limited control over the political funding arena.
- The internal audit mechanisms within political parties are also virtually non-existent. Hence, State Funding might not be feasible in present scenario.



## Advantages and Disadvantages of State Funding of Parties

### Advantages

- Parties play an important role in representative democracy, so they deserve state funding.
- Public funding would remove the great disparity in resources available to different-sized parties.
- If the State matched donations by party members, it might encourage participation.
- It would curb the possibility corrupt influence of private backers on party policies.

### Disadvantages

- Increased state funding could lead to calls for greater state regulation
- It is hard to decide how much support a party should have to quantify for funding
- Public funding could isolate parties from the wishes of voters
- Taxpayer would resent compulsory contributions to parties of which they disapprove.



### Evaluation

Although State funding has many benefits, such as reducing the influence of big money interests and increasing pluralism, the practicality of such a system is poor and many people would be outraged that their taxes are being used to support parties they do not support.

### Way Forward

- Switching to digital transactions would ensure adequate transparency with reasonable privacy for the donor.
- Mature democracies like USA and UK, do not allow foreign funding in elections. Hence, foreign funding for political parties should be banned.

- Bringing parties under the Right to Information Act would enhance transparency.
- A National Election Fund could be maintained by the Election Commission. Donations from corporates into this fund will not distort the election process, but would instead improve the integrity of the peoples' electoral choice. It would also weed out black money from political funding.

## 1.11 GOVERNOR'S ROLE IN GIVING ASSENT TO BILLS

### Context

- Tamil Nadu's Governor R N Ravi's decision to withhold assent to 10 pending Bills has raised fresh legal questions on the powers of the Governor.

### What does the Constitution say about the Governor's role in giving assent to Bills?

- While **Article 163 of the Constitution** deals with the powers of the Governor generally, **Article 200 specifically deals with the issue of granting assent to Bills**. Both the provisions are read together to determine the contours of the power the Governor holds on this issue.
- When a Bill passed by the legislature of a state is presented to the Governor, the Governor has four options:
  - grant assent to the Bill;
  - withhold assent to the Bills;
  - return the Bills for reconsideration; or
  - reserve the Bill for the consideration of the President.

### Article 200

- Article 200** reads: "When a Bill has been passed by the Legislative Assembly of a State or, in the case of a State having a Legislative Council, has been passed by both Houses of the Legislature of the State, it shall be presented to the Governor and the Governor shall declare either that he assents to the Bill or that he withholds assent there from or that he reserves the Bill for the consideration of the President."
- However, the Article has a key proviso. It says that the **Governor "may, as soon as possible" return Bills other than money Bills, with a message requesting that the House reconsider it in parts or in whole**. However, once the Legislative House reconsiders the Bill and sends it to the Governor once again, the Governor "shall not withhold assent there from".

### Issue

- The tug-of-war between the government and the Governor in the Opposition-ruled states essentially lies in the wordplay in the proviso.
- The proviso says the **Governor must return the Bill "as soon as possible" but does not prescribe a specific timeframe**.
- Governors **have exploited this ambiguity to sit on Bills indefinitely without returning them to the state legislature**.

### But can a Governor in practice sit on a Bill forever?

- An indefinite timeline in deciding on Bills can in effect **amount to paralysing the elected government**. At the same time, giving assent to Bills is one of the few areas in which the Governor can exercise his discretion. But again, **this discretion cannot be used arbitrarily or based on a personal preference, but only in Constitutional terms with cogent reasons**.
- Additionally, Article 200 uses the word "shall" which indicates that the **framers of the Constitution intended a mandatory tone for the Governor on this aspect**.

### Supreme Courts Verdict

- The Supreme Court in its landmark 2016 ruling in the Arunachal Pradesh Assembly case (**Nabam Rebia and Bamang Felix vs Deputy Speaker**) discussed this aspect briefly.
- SC:** The Governor cannot withhold assent to a Bill indefinitely but must return it to the Assembly with a message and this could include his recommendation for amendments to the Bill. This is the subject matter of **Rule 102 and Rule 103 of the Rules** which read as follows: "102 (1) When a Bill passed by the Assembly is returned to the Assembly by the Governor with a message requesting that the Assembly do reconsider the Bill or any specified provisions thereof or any such amendments as are recommended in his message, the Speaker shall read the message of the Governor in the Assembly if in session,

or if the Assembly is not in session, direct that it may be circulated for the information of the members,” the court had said.

### What is the argument of the states in the Supreme Court?

- Apart from Tamil Nadu, Kerala, Telangana, and Punjab too, have sought the intervention of the Supreme Court on the issue.
- Kerala in its plea has argued that three Bills have been pending with Governor Arif Mohammad Khan for more than two years, and three Bills for more than a year. A PIL on this issue in the Kerala High Court had made the state government a respondent, but the HC refused to intervene, prompting the state to move the SC.
- Telangana has argued that more than 10 key Bills are pending with Governor Tamilisai Soundararajan and that seven of those Bills were passed by the Assembly and sent for the Governor's assent in September 2022.
- Tamil Nadu has argued that the Governor by not “signing remission orders, day to day files, appointment orders, approving recruitment orders, granting approval to prosecute Ministers, MLAs involved in corruption

including transfer of investigation to CBI by Supreme Court, Bills passed by Tamil Nadu Legislative Assembly” is bringing the entire administration to a halt and “creating adversarial attitude by not cooperating with the State administration”.

### What can the Supreme Court do now?

- Several aspects dealing with the Governor's powers – such as the role in recommending President's Rule, inviting the party with a majority to form the government, or during a trust vote – have been litigated extensively, and there is now settled law on these aspects.
- The SC has now been called upon to decide a new aspect – whether it can fix a timeline for Governors to give assent to Bills, which amounts to deciding whether it can prescribe limits to an office exercising constitutional powers.
- In the past, the court has reluctantly fixed timelines for the Speaker's office to decide disqualification cases.
- A Governor cannot be made a party before the Supreme Court. Generally, therefore, the court issues notice to the Secretary of the Governor in such disputes.

## 1.12 RESERVATION IN PRIVATE JOBS

### Context

- The Punjab and Haryana High Court quashed a law passed by the Haryana government in 2020 that provided 75 percent reservation in private jobs to residents of the state.

### Haryana Government's views

- The Act did not discriminate regarding employment under the central or state governments or any other organisation owned by them. It also argued that reservation on the basis of place of birth would violate provisions of the Constitution but employment on the basis of domicile would **not offend Article 15(1) of the Constitution**. It said unemployed local youth were a distinct class and reasonable classification could be made of this particular

class for the purpose of providing 75 per cent employment in private sectors.

- It creates an unprecedented intrusion by the state government into the fundamental rights of private employers to carry on their business and trade as provided under Article 19 of the Constitution.

### Observations of the Judiciary

- The Haryana State Employment of Local Candidates Act, 2020 is held to be unconstitutional and violative of Part III of the Constitution of India and is accordingly held ultra vires.
- The State cannot direct the private employers to do what has been forbidden to do under the Constitution of India.

- It cannot as such discriminate against the individuals on account of the fact that they do not belong to a certain State and have a negative discrimination against other citizens of the country.
- Reservation in private-sector jobs, will have both instant and long-term repercussions.
- At the surface level, it **clearly violates Article 14 of the Constitution, which talks about the right to equal opportunity in matters of public employment.**
- According to the Constitution, there shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State, and no citizen shall be ineligible for or discriminated against in respect of, any employment or office under the State merely based on religion, race, caste, sex, descent, place of birth, residence, or any of them.
- Similarly, **Article 19 grants all citizens the right to freely move throughout India,** to reside and settle anywhere, and to practice any profession or carry on any occupation, trade, or business throughout India.

### Other issues pertaining to Reservation in Private Jobs

- Apart from the constitutional issues, there are problems and risks that this fractious Act may pose to our youth and the country's rising economy.
- To begin with, this Act would be a **direct attack on the fundamental idea of the Indian economy as one unit.**
- On the one hand, where there are talks about **'One Nation, One Everything,' businesses** – both domestic and multinational – may struggle to find skilled workers in Haryana.
- According to the Census of India (2011), Haryana's literacy rate is 75.55%. So, **it would not be enough for companies to hire only the literate from the State.**
- If companies in Haryana have difficulty finding skilled resources as a result of a law requiring them to hire at least 75% of their workforce locally and only 25% from outside the state, **they may be forced to relocate to**

**other cities due to insufficient local manpower.** As a result, not only Haryana, **but the entire country would suffer, because** the National Capital Region (NCR) contributes significantly to the country's GDP, and Gurugram (Gurgaon) is an important city for both NCR Delhi and Haryana.

- Furthermore, people from states such as Bihar, Uttar Pradesh, Jharkhand, Rajasthan, and Madhya Pradesh, among others, who previously came to work in NCR, specifically in Gurugram, would be forced to return. There would be an **exodus of low-paid workers as they would be unable to find work unless their states of origin give them sufficient job opportunities.**
- Many see this Act as **against the fundamental principle of merit that alone drives the private sector,** as opposed to the public sector, where the governments continue to hire based on an archaic flawed reservation system for their political purposes.
- **Domicile politics** is nothing new to us, and Haryana is far from the first state to enact such restrictive laws.
- Earlier, Maharashtra, Andhra Pradesh, Karnataka, and Madhya Pradesh enacted laws requiring locals to be given preference in private jobs. However, each had to overcome its own set of obstacles, ranging from constitutionality to compliance.
- Andhra Pradesh was the first state to enact such a law in the face of rising unemployment in 2019, but it was challenged in the High Court there.
- Karnataka too passed such laws, most recently in October last year, asking the private sector to give preference to local candidates, but companies did not know how to ensure compliance.
- Madhya Pradesh too has promised to bring in a 70% private sector job reservation quota for locals.
- In August last year, Maharashtra too joined the bandwagon and announced that it would make it mandatory for the private sector to reserve 80% of its jobs for local residents only.



- When it comes to investment, Haryana has not been lacking. But, when it comes to employable manpower, the industry – esp. in Gurugram has often depended on a workforce from outside and neighboring states. Investors, stakeholders, and industry bodies on multiple occasions have stated that there is a shortage of adequately skilled local workforce – especially in the technology sector. According to CMIE data, Haryana's unemployment rate has been higher than the national average for the past four years. In April 2020, approximately 40% of Haryana's job seekers returned home empty-handed.
- The **reservation in private sectors is always anti-industry and would stifle Haryana's labor**

**market and choke the state's growth engine**, i.e., Gurugram, but it is election time and anything can happen around election times.

### Closing Thoughts

- In the context of reservation in private sector, the industry representatives are of the view that **reservation is not a solution but are willing to partner with the Government and appropriate agencies in enhancing and expanding current recruitment policy for the marginalized section**, especially the SC and ST at II levels, as also to encourage skill development and training.

## 1.13 ALL-INDIA JUDICIAL SERVICE

### Context

- President Draupadi Murmu called for the creation of an all-India judicial service to recruit judges.

ensuring suitable representation for marginalized and deprived sections of society.

### Background

- **Article 312 of the Constitution** provides for the establishment of an All-India Judicial Service for posts of district judge and above.
- The constitutional provision enables the creation of the AIJS at the District Judge level.
- The proposal for setting up this service has been deliberated by the central government several times in the last decade.
- In 2017, discussions on the proposal took place in a meeting chaired by the Union Law Minister, Minister of State, Attorney General for India, Solicitor General of India, and other stakeholders.

### Need for All-India Judicial Services

#### Huge vacancy of judges

- At present, there are more than 5000 posts which are vacant in the lower judiciary across India.

#### Delay in recruitment

- Almost 3 crore cases are pending in the lower judiciary and the primary reason for that is the delay in conducting the exams by the states.

#### Insufficient finances with the state governments

- State judicial services do not attract the 'best talent' as the state governments fail to provide high salaries, rewards and compensation.

#### Shortage of Quality Judicial Officers

- There has been a continuous decline in the quality of delivery of justice which in turn affects the higher judiciary.

#### Discretion of a narrow body

- The process of selection of a judge is a responsible job, it should not be left at the discretion of a small collegium no matter how judicious it is.

### Government's view on AIJS

- A properly framed All India Judicial Service is **crucial to strengthen the overall justice delivery system.**
- This would allow for the induction of suitably qualified fresh legal talent selected through a proper all-India merit selection system, addressing issues of social inclusion by

### Subjectivity in the process

- Currently, the judicial appointments suffer subjectivity, corruption, and nepotism on the part of the collegium.
- Hence, there is an **urgent need to establish an impartial system of recruitment to reflect the social reality and diversity of the country.**

### Lack of correct, excellent judicial officials

- The ever-continuing decline in their quality will delay the delivery of justice, increase the pendency of cases, impair the quality of judgments, and in turn affect the competence of the higher judiciary as well.

### Lack of price range with national governments

- State judicial offerings aren't appealing to "pinnacle talent" because of low salaries, rewards, and reimbursement from state governments.

### Lack of specialized nation schooling institutions

- The award is a specialization that calls for modern-day schooling institutes and teachers, however, national institutes do now no longer permit such publicity to interns.

### Timely recruitment

- AIJS will allow a large number of judges to fill those vacancies in the lower judiciary through a trial across India.
- Applicants could be posted in states where more judges are needed to be selected through AIJS.

### Better efficiency of the courts

- The processing and the problem of the delay of cases would be eliminated with the timely hiring of judges for the lower judiciary in the district courts and subordinate courts through AIJS.

### Improvement in the efficiency of judicial administration

- AIJS would attract the best talents in the country and therefore could maintain high standards of judicial administration.

### No more nepotism

- The issue of corruption, nepotism, etc. that we notice in almost every selection process from now on, may decline.
- AIJS will lead to the appointment of quality judges, who have experience and have

studied all types of cases, and public faith in the judiciary will be restored.

### Promotes National Integration

- AIJS will lead to the appointment of the best talents from other states in states with scarce resources.

### Representation of the marginalized section

- By following the reserve system in recruitment, underrepresented communities are represented in the judiciary.

### **Objections to All-India Judicial Services**

#### Weakens separation of power

- According to **Article 235**, the High Courts have control over the state judiciary.
- If the responsibility of recruitment of state judiciary is shifted from High Courts to the Union government through AIJS, then the independence of the judiciary would be undermined.

#### Problem of local language

- The District Court and Sessions Court Judges communicate in the State language and it would be difficult for AIJS officers to adapt themselves to the local language and the dialects which in turn would affect the delivery of justice.

#### Problem of local laws

- AIJS fails to take into account the issue of local laws and customs which varies widely across the country. Thus, the training expenses of the selected judges would increase.

#### Affects only the tip of the iceberg

- AIJS does not address the problem of low pay and the lack of adequate judicial infrastructure including the courts and the training centres for officers in the states.
- AIJS does not propose any changes for ensuring better representation of district court judges in the High Courts despite the fact that less than one-third of the seats in the High Courts are occupied by the district court judges.

## Benefits of All-India Judicial Services

### Accountability and Transparency

- AIJS will make the judiciary more professional, accountable, and equitable.

### Recruitment of the best talent

- AIJS will ensure that the method of recruitment is transparent and efficient so that the best talent in the legal profession is attracted.
- Also, the possibility of promotion of the district court judges to the High Courts at an early stage would increase as they currently join the High Courts much later than the judges from the Bar.

### Checks pendency of cases

- A streamlined and objective recruitment process would ensure a regular stream of good-quality judicial officers for vacant posts, which would reduce the pendency of cases.

### Overall efficiency

- A well-organized system of recruitment of the judicial officers will attract the young talent from the law schools and young, well-informed judicial officers at the level of additional district judge will make a difference.
- As the additional district judges and the district judges can help in making the judicial system work more efficiently.

### Uniformity throughout the country

- The quality of adjudication and administration of justice would achieve uniformity throughout the country by eliminating differences at the state level in laws, practices, and standards.

### Representative character

- AIJS will improve the representative character of the judiciary by hiring trained officials from underprivileged sectors of society, especially women and SC / ST.

### It infuses objectivity in hiring

- The Open competition would provide objectivity in the hiring process of the

judiciary by reducing the discretion of the selection panel.

### Check case handling

- The streamlined and objective recruitment process would ensure a regular flow of good-quality judicial officers for vacant positions, reducing the handling of cases.

## Way Forward

- AIJS will attract capable judicial officers which in turn will lead to speedy disposal of cases, ensuring the right decisions which do not lend themselves to appeal and thereby reducing the number of appeals.
- The quality of the lower judiciary is very crucial for rejuvenating the Indian judiciary.
- AIJS is facing obstructions from the administration and the High Courts, even though the Supreme Court has emphasized on the establishment of AIJS twice.
  - Therefore, AIJS should be formulated in such a manner that all the shortcomings are taken care of so that it proves to be effective.
  - Language should not be a barrier because if the civil servants can learn the local language of the state they are posted in, then the judicial officers can also do that.
- The problem of pay scale and career growth should be looked after.
- After the completion of the selection process, the judicial officers should be provided with good training to handle the job.
- A proficient judiciary is the need of the hour and it is possible only with a competitive recruitment process.
- Speedy disposal of cases is the concern of all the members of the society. This is possible only if there are adequate judges.
- Adequate judges can be made available only if the recruitment is done at large through AIJS just like the recruitment of IAS, IPS and other civil services. Hence, the AIJS should come into existence without any delay.

## 1.14 SPECIAL CATEGORY STATUS

### Context

- Bihar Cabinet passed resolution seeking special category status to State.

### So, what is the Special Category Status?

- The special category status was **introduced in 1969 on the recommendations of the Fifth Finance Commission** to benefit certain backward states having hilly terrains, strategic international borders, and economic and infrastructural backwardness.
- **To be able to get the status, states have to fulfil the following requirements:**
  - They need to have hilly and difficult terrain
  - They need to have low population density and /or a sizeable share of the tribal population
  - They must be in a strategic location along borders with neighbouring countries
  - They must be economically and infrastructurally backward
  - They must have non-viable nature of state finances

### Which states have the Special Category Status?

- Currently, eleven states have the Special Category Status in the country including Assam, Nagaland, Himachal Pradesh, Manipur, Meghalaya, Sikkim, Tripura, Arunachal Pradesh, Mizoram, Uttarakhand, and Telangana. These states have been accorded the status as they share borders with other countries. Odisha lacks that requirement.
- Telangana, the newest state of India, is accorded the status as it was carved out of another state - Andhra Pradesh, which hit the state's finances.

### Can special category status be granted to more states now?

- In the present scenario, it is believed that **no more states can be given the status of a special category state.**

- The Constitution of India does not include any provision for the categorization of any state in India as a 'special category state.'
- However, a wide range of provisions are available to as many as 10 states that have been **listed under Articles 371, 371-A to 371-H, and 371-J.**
- Some of these states are Maharashtra and Gujarat, Nagaland, Assam, Manipur, Andhra Pradesh, Sikkim, Mizoram, Arunachal Pradesh and Telangana and Goa. (Art 371I deals with Goa, but does not include any provision that can be termed 'special'.)
- While these set of provisions were incorporated into the Constitution by Parliament through **amendments under Article 368, Articles 370 and 371 have been part of the Constitution from the time of its commencement on January 26, 1950.**

### Why these special provisions?

- The intention behind these provisions is to **safeguard the interests and aspirations of certain backward regions to protect the cultural and economic interests of the tribal people** or to deal with the disturbed law and order in some parts.

### In a nutshell,

**States that are granted special category status enjoy several benefits.**

1. The central government bears 90 percent of the state expenditure on all centrally-sponsored schemes and external aid while rest 10 percent is given as loan to state at zero percent rate of interest.
2. Preferential treatment in getting central funds.
3. Concession on excise duty to attract industries to the state.
4. 30 percent of the Centre's gross budget also goes to special category states.
5. These states can avail the benefit of debt-swapping and debt relief schemes.

6. States with special category status are exempted from customs duty, corporate tax, income tax and other taxes to attract investment.
7. Special category states have the facility that if they have unspent money in a financial year; it does not lapse and gets carry forward for the next financial year.

### What is the difference between special category status and special status?

- The constitution provides special status through an Act that **has to be passed by a 2/3rds majority in both houses of Parliament** whereas the special category status is **granted by the National Development Council**, which is an administrative body of the government.
- For example, Jammu and Kashmir enjoyed a special status as per Article 370 and also

special category status. But now that Article 35A has been scrapped and it has become a union territory with legislature, special category status doesn't apply to J&K anymore.

- Special status empowers legislative and political rights while special category status deals only with economic, administrative and financial aspects.

### Which states have been demanding special category status?

- Andhra Pradesh
- Bihar
- Goa
- Odisha
- Rajasthan

## 1.15 CERT-IN EXEMPTED FROM RTI AMBIT

### Context

- The Central government has added the Computer Emergency Response Team (CERT-In) among a list of organisations that are exempted from the ambit of the Right to Information Act (RTI), 2005.

### Indian Computer Emergency Response Team

- The Indian Computer Emergency Response Team (CERT-In or ICERT) is an **office within the Ministry of Electronics and Information Technology**.
- It is the **nodal agency to deal with cyber security threats like hacking and phishing**.
- CERT-IN was formed in 2004 by the **Government of India under Information Technology Act, 2000 Section (70B)** under the Ministry of Communications and Information Technology.
- It **strengthens the security-related defence of the Indian Internet domain**.

### Right to Information (RTI)

- The Right to Information (RTI) is an act of the Parliament of India that sets out the rules and

procedures regarding citizens' right to information.

- It **replaced the former Freedom of Information Act, 2002**.
- Under the provisions of RTI Act, **any citizen of India may request information from a "public authority"** (a body of Government or "instrumentality of State") which is required to reply expeditiously or within thirty days.
- In case of a matter involving a petitioner's life and liberty, **the information has to be provided within 48 hours**.
- The Act also requires every public authority to computerize their records for wide dissemination and to **proactively publish certain categories of information so that the citizens need minimum recourse to request for information formally**.
- The RTI Bill was passed by the Parliament of India on 15 June 2005 and came into force with effect from 12 October 2005.
- Although Right to Information is **not included as a Fundamental Right in the Constitution of India**, it protects the fundamental rights to Freedom of Expression and Speech **under Article 19(1)(a) and Right to Life and Personal**

### Liberty under Article 21 guaranteed by the Constitution.

- The authorities under RTI Act 2005 are called public authorities.
- The Public Information Officer (PIO) or the First Appellate Authority in the public authorities perform quasi-judicial function of deciding on the application and appeal respectively.
- This act was enacted to consolidate the fundamental right in the Indian constitution 'freedom of speech'. Since RTI is implicit in the Right to Freedom of Speech and Expression under Article 19 of the Indian Constitution, it is an implied fundamental right.
- Information disclosure in India had traditionally been restricted by the Official Secrets Act 1923 and various other special laws, which the new RTI Act overrides. Right to Information codifies a fundamental right of the citizens of India. RTI has proven to be very useful but is counteracted by the Whistle Blowers Protection Act, 2011.
- The Act extends to the whole of India. It covers all the constitutional authorities, including executive, legislature and judiciary; any institution or body established or constituted by an act of Parliament or a state legislature.
- It is also defined in the Act that bodies or authorities established or constituted by order or notification of appropriate government including bodies "owned, controlled or substantially financed" by government, or non-Government organizations "substantially financed, directly or indirectly by funds".

### Organisations Exempted from RTI purview

- There are 26 intelligence and security organizations established by the Central

government such as the Intelligence Bureau, Research and Analysis Wing, Directorate of Enforcement, National Technical Research Organisation that are exempt under RTI.

- Intelligence Bureau, Ministry of Home Affairs
- Directorate of Revenue Intelligence, Ministry of Finance
- Central Economic Intelligence Bureau, Ministry of Finance
- Directorate of Enforcement, Ministry of Finance
- Narcotics Control Bureau
- Aviation Research Centre
- Special Frontier Force
- Border Security Force, Ministry of Home Affairs
- Central Reserve Police Force, Ministry of Home Affairs
- Indo-Tibetan Border Police, Ministry of Home Affairs
- Central Industrial Security Force, Ministry of Home Affairs
- National Security Guard, Ministry of Home Affairs
- Research & Analysis Wing of The Cabinet Secretariat
- Assam Rifles, Ministry of Home Affairs
- Sashastra Seema Bal, Ministry of Home Affairs
- Special Protection Group
- Defence Research and Development Organisation, Ministry of Defence
- Border Road Development Organisation
- Financial Intelligence Unit, India
- Directorate General Income Tax (Investigation)
- National Technical Research Organisation
- National Security Council Secretariat
- Computer Emergency Response Team (CERT-In)

## 1.16 SHORT ARTICLES

### Appointment of State DGPs

#### Context

- UPSC has tightened guidelines for the appointment of State DGPs.

#### Amended Guidelines

- **Only police officers with at least six months of service left before retirement** will be considered for appointment as the Director General of Police of a State.
- In another change, the Empanelment Committee constituted by the UPSC will not assess Indian Police Service (IPS) officers on central deputation for a State DGP's post if **the Union Ministry of Home Affairs (MHA) informs the State government that "it will not be possible to relieve the officers"**.
- The guidelines allow officers with **25 years of experience to be appointed as a DGP**, against the earlier requirement of a minimum 30 years of service.
- The **number of shortlisted officers cannot exceed three, but may consist of less than three officers in "exceptional circumstances"**.
- Officers will not be included in the panel unless they themselves are willing.
- The condition that **only those officers who have a remainder of a six-month service will be considered for the two-year post** has been mentioned distinctly for the first time in the guidelines.
- The revised guidelines indicate the relevant areas to assess the range of experience of an IPS officer to head a State police department. It requires **ten years of experience in areas** such as law and order, crime branch, economic offences wing, or intelligence wing, and deputation to central bodies such as the Intelligence Bureau, Research and Analysis Wing, or Central Bureau of Investigation, among others.

#### Need of the new Guidelines: Closing loopholes

- **General Rule:** Though the police is a State subject, the IPS officers who are constituents of the All India Services are appointed by the

UPSC on behalf of the Union government, and their services are placed under State cadres.

- States send names of officers to be included in the panel, but sometimes the names selected by UPSC are not acceptable to them. And so, States appoint acting DGPs to avoid the UPSC process.
- Thus, the amended UPSC guidelines come in the wake of several States, **choosing to appoint acting DGPs instead of regular DGPs, bypassing the requirement to go through the UPSC-selected panel of eligible officers**.
- States such as Uttar Pradesh, Punjab, Andhra Pradesh, and Telangana have all appointed "in-charge" DGPs, or DGPs with "full additional charge". In fact, Uttar Pradesh has not had a full-time DGP since 2022.
- Earlier the condition that **only those officers who have a remainder of a six-month service will be considered for the two-year post** was there, but some States appointed DGPs on the verge of retirement, giving them an **extended tenure**. Hence, the condition has been made distinct this time. The guidelines this time **discourage States from appointing favorite officers" about to retire, in a bid to extend their tenure**.

### Advocate-On-Record (AOR)

#### Context

- The Supreme Court pulled up an Advocate-on-Record (AoR) for filing a frivolous case.

#### All about AOR

- Advocate-on-Record is an advocate who is entitled **under the Order IV of the Supreme Court Rules, 2013** (previously Order IV of the Supreme Court of India Rules, 1966), framed by the Supreme Court of India **under Article 145 of the Constitution**.
- **Mandate:** To act as well as to plead for a party in the Supreme Court of India.
- As per the rules, **no advocate other than an advocate on record shall be entitled to file an**

appearance or act for a party in the Supreme Court of India.

- No advocate other than an advocate on record can appear and plead in any matter unless he is instructed by an advocate on record.
- An advocate can be registered as an advocate-on-record if they qualify the requirements as laid down in the Supreme Court of India Rules, 2013 and 'Regulations regarding Advocates-on-Record Examination'.
- **Additional Qualification:** The advocate has to practice for four years as an advocate and thereafter has to demonstrate to the Supreme Court that they have started taking training with a Senior Advocate on record because they intend to become an Advocate-on-record.
- After the expiry of one year's training, the advocate has to appear for an examination conducted by the Supreme Court itself.
- After an advocate passes this examination, they must have a registered office within a radius of 10 miles from the Supreme Court building and a registered clerk. It is after this that the Chamber Judge of the Supreme Court accepts them as an advocate-on-record.

## Privileges Committee

### Context

- The Privileges Committee of Rajya Sabha has called for a meeting to review the pending complaints against House members.

### Background

- Privilege motions revolve around the concept of parliamentary privilege, which confers certain rights upon Members of Parliament to facilitate the conduct of business on the floor of the House.
- Though an exhaustive list of these privileges doesn't exist, they generally encompass the freedom of expression during parliamentary debates, with MPs being immune to court proceedings for their speech.

- When it is believed that a privilege has been breached, any member can raise a motion. If admitted by the Chairman, it can be referred to the Privileges Committee.

### Privilege Committee

- The Committee consists of ten members who are nominated by the Chairman of the Rajya Sabha.
- The Privileges Committee is headed by a Chairman chosen from among the members.
- For a question of privilege to be raised, two conditions must be fulfilled- the matter must relate to a recent occurrence and necessitate Rajya Sabha's intervention.
- The Committee's responsibility is to examine cases and provide suitable recommendations.
- It can summon relevant individuals for examination and study pertinent documents.
- Subsequently, the committee generates a report, to be presented within a month of the reference date if no specific time has been set by the Rajya Sabha Chairman.
- The report's consideration requires a motion, with the possibility of suggested amendments.
- Members can agree, disagree or propose amendments to the Privileges Committee's report.

## Comptroller and Auditor General of India

### Context

- CAG of India has written: As our democracy matures, my role is becoming more vital.

### About

- The CAG is the supreme audit institution of India, established under Article 148 of the Constitution of India.

### Appointment

- The Comptroller and Auditor General is appointed by the President of India and can be removed from office only in the manner and on the grounds that a Judge of the Supreme Court is removed.

### Term



- The CAG vacates the office on attaining the age of 65 years or 6-year term, whichever is earlier or by impeachment proceedings.

### Functions of CAG

- They are **empowered to audit all receipts and expenditures of the Government of India and the State Governments**, including those of autonomous bodies and corporations substantially financed by the government.
- The CAG is also the **statutory auditor of Government-owned corporations** and conducts supplementary audits of government companies in which the government has an equity share of **at least 51 percent or subsidiary companies of existing government companies**.
- The CAG is also **the statutory auditor of the Lokpal**.
- The CAG is also the **head of the Indian Audit and Accounts Department**, the affairs of which are managed by officers of Indian Audit and Accounts Service.

### Scope of Audit

- Audit of government accounts (including the accounts of the state governments) in India is entrusted to the CAG of India who is empowered to audit all expenditures from the Consolidated Fund of the union or state governments, whether incurred within India or outside, all revenue into the Consolidated Funds and all transactions relating to the Public Account and the Contingency Funds of the Union and the states. Specifically, audits include:
  - Transactions relating to debt, deposits, remittances, Trading, and manufacturing
  - Profit and loss accounts and balance sheets kept under the order of the President or Governors
  - Receipts and stock accounts. CAG also audits the books of accounts of the government companies as per Companies Act.
- The Supreme Court of India ruled that the CAG General **could audit private firms in revenue-share deals with the Government**.
- The CAG has been a **regular member of the United Nations' Panel of External Auditors**,

and has previously served as the chairman of its board of auditors, after being elected in 2011.

- The CAG is at present serving as external auditor of two UN organisations:
  1. Food and Agriculture Organization of the United Nations (FAO)
  2. World Health Organization (WHO)

### Compensation

- The salary and other conditions of service of the CAG are determined by the Parliament of India through "The Comptroller and Auditor-General (Duties, Powers and Conditions of Service) Act, 1971".
- His salary is same as that of judge of the Supreme court of India. Neither his salary nor rights in respect of leave of absence, pension or age of retirement can be varied to his disadvantage after his appointment.

### Reappointment

- The CAG is **not eligible for further office either under the Government of India or under the Government of any State** after he has ceased to hold his office. These provisions are in order to ensure the independence of CAG.

### Removal

- The CAG can be removed only on an address from both houses of parliament on the ground of proved misbehavior or incapacity.

## **CBI**

### Context

- CBI is an **"independent body"** and the Centre has **"no superintendence or control over it"**, the Union government told the Supreme Court.

### About

- The Central Bureau of Investigation (CBI) is the **domestic crime investigating agency of India**.

### Ministry

- It **operates under the jurisdiction of the Ministry of Personnel, Public Grievances, and Pensions**.

### Establishment and Mandate

- Originally set up to investigate bribery and governmental corruption, **in 1965** it received expanded jurisdiction to investigate breaches of central laws enforceable by the Government of India, multi-state organized crime, multi-agency or international cases.

#### Headquarter

- The CBI headquarter is located in CGO Complex, near Jawaharlal Nehru Stadium in New Delhi.

#### Legal powers

- The legal powers of investigation of the CBI are derived from the DSPE Act 1946, which confers powers, duties, privileges and liabilities on the Delhi Special Police Establishment (CBI) and officers of the Union Territories.

#### Investigation

- Under the act, the CBI can investigate only with notification by the central government.
- CBI needs prior consent from other state governments in order to conduct investigations within their territory.
- It investigates multi-state organised crime, multi-agency or international cases, several economic crimes, special crimes, cases of corruption and other case
- The CBI is headed by a Director, an IPS officer with a rank of Director General of Police.
- The director is selected by a high-profile committee constituted under The Delhi Special Police Establishment (DSPE) Act, 1946 and **has a two-year term.**
- The Appointment Committee consists of:
  - Prime Minister – Chairperson
  - Leader of Opposition of Lok Sabha or the Leader of the single largest opposition party in the Lok Sabha, if the former is not present due to lack of mandated strength in the Lok Sabha - member
  - Chief Justice of India or a Supreme Court Judge recommended by the Chief Justice – member.

#### Other Facts

- CBI is exempted from the provisions of the **Right to Information Act.**

- CBI is India's officially designated **single point of contact for liaison with the Interpol.**

## **Bihar Reservation Bill**

### Context

- Recently, the Bihar Reservation Bill was **cleared to raise the quota for Scheduled Castes, Scheduled Tribes, Extremely Backward Classes, and Other Backward Classes from the existing limit of 50 percent to 65 percent.**

### Provisions under the Bill

- To increase the reservations in government jobs and educational institutions from the existing 60% (including 10% mandated for the economically weaker sections by the Centre) to 75%.
- The Bill provisions for an 18% quota for other backward classes (OBCs), 25% for extremely backward classes (EBCs), 20% for scheduled castes (SCs) and 2% for scheduled tribes (STs).
- The Bill **excludes the Economically Weaker Sections (EWS) quota from its ambit since they are already in effect under a separate Act.**
- With the hike in the reservation, the effective seats available for the general unreserved category comes further down to 25 percent with 75 percent reservation now in force.
- As per the Bill, the reservation for OBCs would go up from the existing 8 percent to 18 percent quota, EBCs from 12 percent to 25 percent, Scheduled Castes from 14 percent to 20 percent while the Scheduled Tribes quota would fall from the existing 10 percent to only 2 percent.
- The ST **population in the caste survey report stands at 2 percent.**
- The 3 percent quota in jobs for women has also been done away with since women have 35 per cent quota in jobs.

## **Digital Life Certificate for Pensioners**

### Context

- More than **16 lacs Digital Life Certificates have been generated.**

### Digital Life Certificate for Pensioners

- Digital Life Certificate (*Jeevan Pramaan*) is a biometric-enabled digital service for pensioners.
- Pensioners of central or state government, Employees' Provident Fund Organisation, or any other government organization whose pension disbursing agency is live for DLC can take benefit of this facility.

### About DLC Services

- This service is available for India Post Payments Bank (IPPB) and non-IPPB customers.
- To avail of DLC service, a customer can contact the nearest post office or place a request for a doorstep visit by the postman/Grameen Dak Sevak. Department of Posts have also enabled scheduling of doorstep request through the Post Info app or through the website.
- Issuance of DLC is a completely paperless, seamless, and hassle-free process, and the certificate is generated instantly.
- On successful completion, a Pramaan ID is generated that is shared with the pensioner by NIC directly.
- For every successful generation of DLC, a nominal fee of Rs. 70 (inclusive of GST/CESS) is charged.
- There will be no doorstep charges levied for IPPB or non-IPPB customers for issuance of DLC.

## **AAINA-Dashboard**

### Context

- The 'AAINA Dashboard for Cities portal has been made live by the Ministry of Housing and Urban Affairs (MoHUA).

### AAINA - Dashboard

- **About:** AAINA - Dashboard for cities is an initiative of the Ministry of Housing and Urban Affairs to serve as a tool for comparing similarly placed Urban Local Bodies (ULBs) and promoting peer learning amongst ULBs.
- **Objectives:** The primary objectives of the AAINA Dashboard are to help cities to (i) see how they are faring vis-à-vis other cities, (ii)

inspire them by pointing to possibilities and areas of improvement, and (iii) provide opportunities to learn and engage with frontrunners.

- **Aim:** The 'AAINA Dashboard for Cities' aims to create a robust database of the key performance metrics of Urban Local Bodies, which could be accessed by all stakeholders, and subsequently would open for public view once it gets populated.
- **Pillars:** The Dashboard will present the data submitted by the ULBs on the basis of indicators across five broad pillars namely, (i) Political and administrative Structure, (ii) Finance, (iii) Planning, (iv) Citizen Centric Governance and (v) Delivery of Basic Services.
- **Features:** The ULBs will submit their data, including audited accounts, and self-reported performance metrics by logging in to the dashboard's portal. ULBs would be free to update the information initially provided by them, anytime on the portal as per need. The Dashboard has been envisaged as a permanent platform for ULB-related data, that would be updated on a regular basis.
- **Significance:** The AAINA dashboard would serve as a tool for comparing similarly placed cities and promoting peer learning among cities.

## **Legal Literacy and Legal Awareness Program (LLLAP)**

### Context

- The Legal Literacy and Legal Awareness Program (LLLAP) of the Department of Justice reaches more than 6 lakh people through 14 implementing agencies under the DISHA scheme.

### Legal Literacy and Legal Awareness Program (LLLAP)

- Since 2012, the Department of Justice (DoJ), Ministry of Law and Justice, Government of India has been implementing Access to Justice Scheme in North Eastern States including Arunachal Pradesh, Assam, Manipur,

Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and in UT of Jammu & Kashmir.

- **Major focus:** Legal Empowerment of community, dissemination of simplified Information, Education and Communication (IEC) materials in local languages and dialects, and capacity development of Panchayati Raj Functionaries and Village Chiefs on formal justice delivery system.
- **Aim:** To empower the poor and disadvantaged sections of society to seek and demand justice services.
- The Programme also seeks to improve the institutional capacities of key justice service providers to enable them to effectively serve the poor and disadvantaged.
- **Duration:** DoJ has formulated a scheme on Access to Justice named 'Designing Innovating Solutions and Holistic Access to Justice (DISHA)' to be implemented during the period of 2021 to 2026.
- **Objectives**
  - Use of Technology for enhanced delivery of legal literacy, its Knowledge Products and implementation of Innovative and Holistic ideas.
  - Mainstreaming legal literacy through building and forging partnerships across Ministries and allied Departments, Institutions, Schools etc.
  - Capacity Building and Utilization of Existing Grassroot/frontline Workers/Volunteers.
  - Developing of Indicators to measure Legal Literacy and Legal Awareness in India. Concurrent Evaluation and Assessment of Legal Literacy and Legal Awareness Programmes.

## Nagaland Municipal Bill 2023

### Context

- The Nagaland Government informed the Supreme Court that the process of municipal elections in the state with a one-third quota for women will be completed before April 30, 2024.

### Provisions of the Bill

- The Nagaland Municipal Bill 2023 provides for **33% reservation of seats for women in all urban local bodies in the state**. This includes municipalities, town councils, and village councils. The reservation will be implemented by rotating the seats between men and women. This means that in every election, **one-third of the seats will be reserved for women**.
- The provision for one-third reservation of the offices of the Chairperson in the ULB for women, which was there in the earlier Municipal Act was also not included in the Nagaland Municipal Bill, 2023.
- **Provisions related to taxes, land, and buildings have been excluded** in the Nagaland Municipal Bill, 2023.

### Significance

- The Nagaland Municipal Bill 2023 is a landmark legislation that seeks to empower women in the state.
- It is a step in the right direction towards achieving gender equality in Nagaland. It is a model for other states in India to follow.

## Central Information Commission (CIC)

### Context

- Information Commissioner Heeralal Samariya was sworn in as the chief of the Central Information Commission (CIC).

### About

- The Central Information Commission is a **statutory body, set up under the Right to Information Act in 2005**.

### Members

- The commission includes one chief information commissioner and not more than ten information commissioners.

### Appointment

- Members are appointed by the President of India on the recommendation of a committee consisting of the Prime Minister as Chairperson, the Leader of Opposition in the Lok Sabha and a Union Cabinet Minister to be nominated by the Prime Minister.

### HQ

- The CIC has its headquarters in New Delhi and can also establish benches in other parts of the country.

### Functions

- To receive and dispose of appeals and complaints from individuals who have not been able to obtain information from public authorities under the RTI Act.
- To issue directions and orders to public authorities for the implementation of the RTI Act, such as appointing Public Information Officers (PIOs), publishing proactive disclosures, maintaining records, etc.
- To impose penalties on PIOs or other officials for violating the provisions of the RTI Act, such as denying or delaying information, providing false or misleading information, etc.
- To conduct inquiries and investigations into any matter relating to the RTI Act, suo motu or a complaint.
- To monitor and report on the status of compliance of public authorities with the RTI Act and make recommendations for improvement.
- To conduct awareness and training programs on the RTI Act for public authorities, civil society organizations, media, and citizens.
- To advise the government on any matter relating to the RTI Act, such as amendments, rules, regulations, etc.

## **CITIIS 2.0**

### Context

- Recently, CITIIS 2.0 Challenge was launched by Hardeep S Puri.

### What is CITIIS?

## **Anonymised Personal Data**

### Context

- The Centre is considering issuing a directive to big tech companies like Facebook, Google and Amazon to share anonymised personal data in their possession with a government-backed database.

### Anonymised Personal Data

- In its most basic form, anonymised personal data, or non-personal data, is **any data set that does not contain personally identifiable information**.
- It could include aggregated information, such as the overall health data of a particular demography, weather and climate data of an area, and traffic data, among others.

### Intent of the Government

### About

- CITIIS, or the City Investments to Innovate, Integrate and Sustain, is **a sub-component of the Government of India's Smart Cities**

### Mission.

### Joint Program

- It is a **joint program of the Ministry of Housing and Urban Affairs, Agence Francaise de Development (AFD), the European Union (EU), and the National Institute of Urban Affairs (NIUA).**

### Launch

- The CITIIS program was **launched on July 9, 2018.**

### Work

- Assisting cities develop and implement innovation-driven and sustainable urban infrastructure projects.
- Partnering with State Government and State Urban Development Department for capacity building.
- Amplifying impact through international partnerships, monitoring & evaluation, and technology integration.

### Components

CITIIS 1.0 consisted of three components:

- **Component 1:** 12 city-level projects selected through a competitive process.
- **Component 2:** Capacity-development activities in the State of Odisha.
- **Component 3:** Promoting integrated urban management at the national level through activities undertaken by NIUA, which was the Program Management Unit (PMU) for CITIIS 1.0.

- Under the upcoming Digital India Bill, the successor to the Information Technology Act, 2000, the IT Ministry is understood to have added a provision **that will mandate big tech companies to deposit all the non-personal data they hold to the India datasets platform.**
- A contract will be signed with these companies when the Government joins their platform, which includes their terms of service and privacy policy.
- The Digital India Bill will propose that under the terms of service **when a user agrees that a company can use their anonymized personal data, that particular information will mandatorily have to be deposited to the India datasets platform.**

### India Datasets Program

The India Datasets Program is a “unified national data sharing and exchange platform to enable various data sharing and exchange use cases of all stakeholders including but not limited to Central/State/UT Governments, public sector undertaking, private sector companies, industry bodies, MSMEs (micro, small and medium enterprises) and startups, academia and researchers, civil society and media organisations, open technology communities, etc.”

### Government's rationale behind the move

- The Centre's idea is that **big tech companies have reaped dividends by building algorithms based on Indians' non-personal data**, and that they cannot claim exclusive ownership over it.
- Non-personal data held by the Indian datasets platform could be monetized. The platform will play a crucial role in boosting the artificial intelligence ecosystem in India by providing a “robust foundation” for data-driven innovation and development.
- The identification of certain “high-value datasets” could be shared to encourage innovation and ensure national security.

### Note:

The Digital India Bill is a key part of a comprehensive legal framework that encompasses various legislative measures such as the recently-notified Digital Personal Data Protection Act, 2023, the draft Indian Telecommunication Bill, 2022, and a policy addressing the governance of non-personal data. The Bill, however, is unlikely to be released this year.

## PM Janjati Adivasi Nyaya Maha Abhiyan

### Context

- Prime Minister Narendra Modi launched the **PM Janjati Adivasi Nyaya Maha Abhiyan** on the birth anniversary of tribal icon Birsa Munda.

### PM Janjati Adivasi Nyaya Maha Abhiyan

#### About

- The scheme which is **designed to focus on 11 critical interventions**, spans across various ministries, including the Ministry of Tribal Affairs and the Ministry of Ayush.
- The Scheme was announced **to address the vulnerabilities faced by these marginalized communities.**

#### Beneficiaries

- Particularly Vulnerable Tribal Groups, comprising 75 communities located in 18 states and the Union Territory of Andaman

and Nicobar Islands, have been identified as the **primary beneficiaries of PM-JANMAN.**

- These groups continue to grapple with vulnerabilities in social, economic, and educational sectors, making targeted interventions crucial for their upliftment.

#### Provisions

- The comprehensive plan under PM-JANMAN includes the provision of basic facilities such as safe housing, clean drinking water, sanitation, improved access to education, health and nutrition services, road and telecom connectivity, and sustainable livelihood opportunities.
- The Ministry of Ayush is set to establish Ayush Wellness Centres as per existing norms, extending Ayush facilities to PVTG habitations through mobile medical units.
- Furthermore, the Ministry of Skill Development and Entrepreneurship will play a pivotal role in facilitating skill and vocational

training in PVTG habitations, multi-purpose centres, and hostels, aligning with the specific skills of these communities.

## Digital India Land Records Modernization Programme

### Context

- In recent years, India has taken proactive steps to digitize land records under the Digital India Land Records Modernisation Programme.

### Digital India Land Records Modernization Programme

#### About the Scheme

- The Digital India Land Records Modernization Programme (DILRMP), is a **Central Sector Scheme**.
- It is being implemented by the Department of Land Resources (DoLR) with 100% funding by the Government of India.
- The objective of DILRMP is to develop a modern, comprehensive and transparent land record management system.

#### Progress

- Substantial progress has been made in respect of land-related matters through DILRMP.
- As a step towards healthy competition and monitoring among the districts, this Department has initiated grading among the districts. Platinum Grading is being assigned to Districts that have completed 99% and more work in six basic components.

#### Components

- As per DILRMP MIS as fed by the States/UTs, 157 districts in 14 States have completed 99% and above work in the following basic six components:
  1. Computerization of Land Records (RoR)
  2. Digitization of Cadastral Maps/FMBs
  3. Linkage of RoR with Cadastral maps
  4. Computerization of Registration
  5. Integration of Registration (SRO) with Land Records (Revenue Office)
  6. Modern Record Room

#### Significance

- The implementation of these six components would facilitate improvement in real-time information on land; optimize the use of land resources; benefit both landowners & prospectors; assist in policy & planning; reduce land disputes; check fraudulent / benami transactions; obviate need of physical visits to Revenue/Registration offices and enable sharing of information with various organisations/agencies.

## SATHI Program

### Context

- The Centre's move to cancel a call for proposals under the Department of Science and Technology (DST)'s SATHI programme has sparked fears among higher education institutions of shrinking funding sources to procure sophisticated, high-end equipment that are vital for research and development.

### About

- SATHI (Sophisticated Analytical and Technical Help Institutes) was **launched in 2020 to establish centres with advanced analytical instruments shared among institutions**.
- SATHI aimed to provide access to sophisticated research tools for institutions that lacked such resources.
- The scheme aims to **provide professionally managed services with efficiency, accessibility and transparency under one roof to meet the demands of industry, start-ups and academia**.

## Central Adoption Resource Authority

### Context

- The Supreme Court questioned the "great delay" plaguing India's adoption regulation body the Central Adoption Resource Authority.

### Central Adoption Resource Authority (CARA)

- Central Adoption Resource Authority (CARA) is **an autonomous and statutory body of the Ministry of Women and Child Development**.

- It **was set up in 1990**. It is a **statutory body under the Juvenile Justice (Care and Protection of Children) Act, 2015**.
- It functions as the nodal body for the adoption of Indian children and is mandated to **monitor and regulate in-country and inter-country adoptions**.
- CARA is designated as the Central Authority to deal with inter-country adoptions **by the provisions of the 1993 Hague Convention on Inter-country Adoption, ratified by the Government of India in 2003**.

### **Adoption Laws in India**

India has multiple adoption laws. Traditionally, the 1956 Hindu Adoption and Maintenance Act (HAMA), adoption, subject to the requirements and rigors of the Act, is available in India to Hindus, Buddhists, Jains, and Sikhs, and others subject to Hindu family law or custom. For others, the 1890 Guardians and Wards Act applies, but which provides only guardianship, not adoption, for those not subject to Hindu family law or custom. CARA primarily deals with the adoption of "orphaned, abandoned and surrendered" children through recognised adoption agencies. In 2018, CARA has allowed individuals in a live-in relationship to adopt children from and within India.

## **Worldwide Governance Indicators (WGI)**

### **Context**

- There is a need for the World Governance Index to be more transparent and less subjective - Chief Economic Adviser.

### **WGI**

- The Worldwide Governance Indicators (WGI) is a **project that reports both aggregate and individual governance indicators for over 200 countries and territories covering the period from 1996 to 2021**.
- It considers six dimensions of governance:
  1. Voice and Accountability
  2. Political Stability and Absence of Violence/Terrorism
  3. Government Effectiveness
  4. Regulatory Quality
  5. Rule of Law
  6. Control of Corruption
- These aggregate indicators are based on the views of a large number of enterprise, citizen, and expert survey respondents in both industrial and developing countries.
- The indicators draw from over 30 individual data sources produced by a variety of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms.

## **Pradhan Mantri Schools for Rising India (PM SHRI) Scheme**

### **Context**

- The Government launched the Pradhan Mantri Schools for Rising India (PM SHRI) scheme.

### **Scheme Details**

- In September 2022, the Union Cabinet approved **a Centrally Sponsored Scheme named Pradhan Mantri Schools for Rising India (PM-SHRI)**.
- Under the scheme, **there is provision of setting up of more than 14,500 PM-SHRI schools** by strengthening the existing schools from amongst schools managed by central government/state/UT government/local bodies.
- The total cost of the project is **Rs 27,360 crore during the period of 2022-23 to 2026-27**.
- PM-SHRI Schools **will showcase all components of the National Education Policy, 2020** and act as exemplar schools, and also offer mentorship to other schools in their vicinity.
- The aim of these schools will not only be **qualitative teaching, learning and cognitive development** but also **creating holistic and**



well-rounded individuals equipped with key 21st-century skills.

- Pedagogy adopted in these schools will be more **experiential, holistic, integrated, play/toy-based** (particularly, in the foundational years) inquiry-driven, and discovery-oriented.
- Focus will be on **achieving proficiency in learning outcomes in every grade.**
- Assessment at all levels will be **based on conceptual understanding and application of knowledge to real-life situations** and will be competency-based.
- These schools will be **equipped with modern infrastructure** including labs, smart classrooms, libraries, sports equipment, art room, etc which is inclusive and accessible.
- These schools shall also **be developed as green schools** with water conservation, waste recycling, energy-efficient infrastructure and integration of organic lifestyle in curriculum.
- They will **provide leadership in their respective regions in providing high-quality education in an equitable, inclusive and joyful school environment** that takes care of the diverse background, multilingual needs, and different academic abilities of children and makes them active participants in their own learning process as per the vision of NEP 2020.

## **FASTER 2.0 and e-SCR Portal**

### Context

- The Supreme Court witnessed the launch of two new initiatives – **FASTER 2.0 and the Hindi version of e-SCR portal.**
- The initiatives were launched during the celebrations of the 74th Constitution Day celebrations.

### 'FASTER 2.0' Portal

- The 'FASTER 2.0' portal **facilitates instant communication to the concerned authorities,** enhancing the efficiency of the justice system.
- The portal would ensure that **judicial orders for the release of prisoners were promptly communicated to the jail authorities,** trial court and High Courts for immediate compliance, so that such prisoners were released from jail without undue delay.

## **Supplementary Demands For Grants**

### Context

- The Supplementary Demands for Grants (SDG) are likely to see additional allocation for fertiliser, food and fuel subsidy along with Rural Employment Guarantee Scheme.

### Definition of Supplementary Demands for Grants

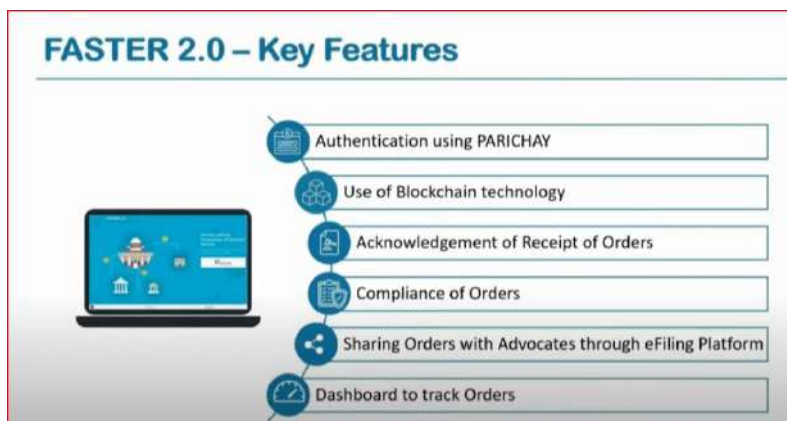
- The additional grant required to meet the required expenditure of the government is called Supplementary Grants.

### Description

- When grants, authorized by the Parliament, **fall short of the required expenditure,** an estimate is presented before the Parliament for Supplementary or Additional grants. These grants are **presented and passed by the Parliament before the end of the financial year.**
- When **actual expenditure incurred exceeds the approved grants of the Parliament,** the Ministry of Finance and Ministry of Railways presents a Demand for Excess Grant. The Comptroller and Auditor General of India **bring such excesses to the notice of the Parliament.**
- The Public Accounts Committee **examines these excesses and gives recommendations to the Parliament.** The Demand for Excess Grants is made after the actual expenditure is incurred and is presented to the Parliament after the end of the financial year in which the expenses were made.

### e-SCR Project

- The e-SCR Project is an initiative to provide the digital version of the Supreme Court's judgments in the manner as they are reported in the official law report - 'Supreme Court Reports'. It is part of the judiciary's endeavour towards complete digitisation of Indian judiciary.



- The e-SCR project is an important stepping stone for future of the modern Indian judiciary and

entails manifold benefits, including those of reduction in burden of travelling and browsing through huge volumes of journals in libraries, as also for enhancing its accessibility to those with visual disabilities, as they may now be able to access them through their screen reading software.

### Hindi version of the e-SCR portal

- This portal allows access to Supreme Court judgments in Hindi, making legal information more accessible and inclusive.

## **Karmayogi Prarambh**

### Context

- KarmayogiPrarambh marks its one-year anniversary.

### Details

- Launched in 2022, Karmayogi Bharat KarmayogiPrarambh is an online orientation program under the Ministry of Personnel, Public Grievances and Pensions.
- iGOTKarmayogi is a comprehensive online learning portal to guide government officials in their capacity-building journey.
- The portal combines six functional hubs for online learning, competency management, career management, discussions, events, and networking.
- The program aims to provide all the necessary details related to government policies for newly appointees recruited through Rozgar Melas.
- It includes a set of eight courses curated to help all Rozgar Mela appointees.
- The Prarambh courses included as a part of the programme are: Code of Conduct for Government Employees, Prevention of Sexual Harassment of Women at Workplace, Understanding Motivation, Self-Leadership, Stress Management, Effective Communication, MS Word for Beginners, and MS Excel for Beginners.

## **SATHEE (Self Assessment Test and Help for Entrance Exams)**

### Context

- Officials at the Ministry of Education (MoE) asked States to encourage aspirants to utilise the newly launched portal for exam preparation – SATHEE (Self-Assessment Test and Help for Entrance Exams).

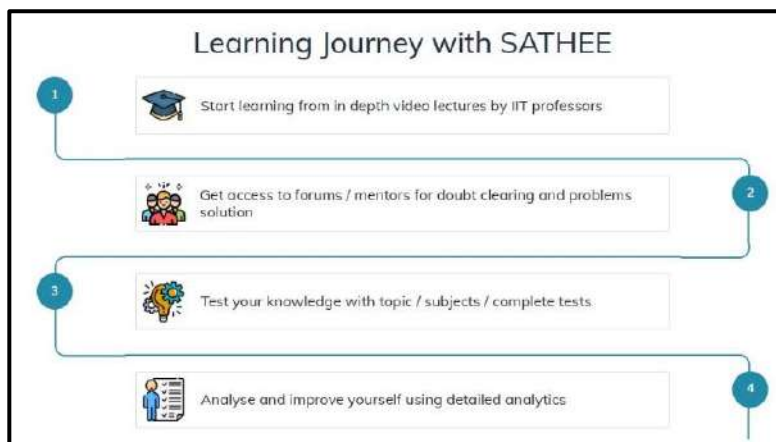
### SATHEE

- SATHEE is an initiative by the Ministry of Education to give students a free learning and assessment platform.

- The preparation material will be available in English, Hindi and other regional languages of India to prepare for competitive exams like JEE and NEET.
- The platform stands out with its **multilingual support**, offering content in English, Hindi, and various Indian regional languages.

### Features of SATHEE

- Comprehensive suite of resources for NEET and JEE aspirants, including video lectures from renowned faculties of IITs and IISc.
- Launch of platform kicks off with first 45-day crash course for JEE Main.
- The platform to host a series of intensive, expert-designed learning modules along with novel features like an interactive chatbot.
- Regular doubt-clearing sessions led by students from IITs and AIIMS aimed at enhancing the learning experience of students.
- New avenues to be opened for students preparing for competitive exams.



## International Tropical Timber Council (ITTC)

### Context

- The 59th International Tropical Timber Council (ITTC) concluded.

### IITC

- The IITC is the **governing body of the International Tropical Timber Organisation (ITTO)**, which aims to promote sustainable management and conservation of tropical forests.
- The International Tropical Timber Council (ITTC), group **meets at least once a year to discuss a wide-ranging agenda aimed at promoting sustainable tropical forest management and the trade of sustainably produced tropical timber.**

### ITTO

- The International Tropical Timber Organization (ITTO) is an **intergovernmental organization that promotes the conservation of tropical forest resources and their sustainable management, use, and trade.**
- The organization was **established under the International Tropical Timber Agreement (ITTA)**, which was sponsored by the United

Nations Conference on Trade and Development and was ratified in 1985.

- It **aims to promote sustainable management and legal harvesting of forests** that produce tropical timber and to promote expansion and diversification of international timber trade from these forests.

## Fact Check Unit

### Context

- The Madras High Court adjourned a public interest litigation petition filed against the State government's Fact Check Unit.

### Background

- The Government of Tamil Nadu issued an order recently to set up a Fact Check Unit **with the intent of checking across all media platforms the authenticity of information related to the Government of Tamil Nadu.**
- The fact check unit **will check the veracity of information related to the announcements, policies, schemes, guidelines and initiatives of the Government of Tamil Nadu.**
- The fact-check unit has been given **powers to take suo motu cognisance of social media posts/articles that require fact-checking.**

- It can also act on complaints received by them from anyone.
- Identified complaints are then researched using various fact-checking tools and verified through government sources such as websites, press releases, and government social media accounts.

### Concerns

- This government order (GO) is violative of several fundamental rights guaranteed by the Constitution of India and is **unconstitutionally vague and arbitrary.**
- It creates a **chilling effect on the freedom of speech and expression,** a **fundamental right guaranteed under Article 19(1)(a)** of the Constitution.
- This can **only be reasonably restricted under Article 19(2)** in the interest of the sovereignty and integrity of India, security of the state, friendly relations with foreign states, public order, decency or morality, or about contempt of court, defamation or incitement to an offence. **“Public Interest” is not a ground under Article 19(2)** to restrict the freedom of speech and expression.
- The fact check unit has been tasked with checking the authenticity of any information related to the Government of Tamil Nadu. Now, the phrase “information related to the Government of Tamil Nadu” has not been defined, thereby making it **unconstitutionally vague.** This ambiguity will have a **chilling effect on the freedom of speech and expression of Indian citizens.** This will **effectively choke the flow of information to the public,** which goes against the principles of participative democracy.
- The scheme **does not provide for an opportunity of hearing to the author of the post,** who can be a journalist, researcher, comedian, satirist, or members of the opposition political party. Thus, the **Government has become the judge, jury, and**

**executioner on the authenticity of any information related to the Government of Tamil Nadu.**

## **Ayurveda Gyan Naipunya Initiative**

### Context

- Ministry of Ayush has launched “Ayurveda Gyan Naipunya Initiative” (AGNI) for physicians practicing in the field of Ayurveda.

### Details

- The Ministry of Ayush’s Central Council for Research in Ayurveda Sciences (CCRAS) has launched the “Ayurveda Gyan Naipunya Initiative” (AGNI) **to stimulate research and innovation among Ayurveda practitioners.**
- AGNI aspires to chronicle and authenticate Ayurvedic medical practises, improve evidence-based practise culture, and encourage scientific research in the area.
- It **gives Ayurveda practitioners a place to communicate their new practises, establishing an evidence-based culture.**
- It also encourages scientific study to confirm pragmatic Ayurvedic practises.

### Important functions

- In collaboration with the National Commission for Indian System of Medicine (NCISM), **CCRAS will document and disseminate reported medical practises and treatment regimens for educational and scholarly reasons.**
- AGNI is a forum for Ayurvedic practitioners to share their novel practises and experiences in the treatment of diverse medical situations.
- The project promotes an evidence-based practise culture among Ayurvedic practitioners, ensuring that their approaches are founded on scientific research.
- Through applications, **AGNI hopes to locate interested Ayurveda practitioners who are prepared to help in the creation of a complete database.**

1.17 SNIPPETS



**Tribal Youth Exchange Program**

- A Tribal Youth Exchange Program was organized in Delhi in November 2023.
- The Ministry of Home Affairs has been running the Tribal Youth Exchange Programme (TYEP) for the last 15 years.
- The programme is being run through Nehru Yuva Kendra Sangathan (NYKS) under the Ministry of Youth Affairs and Sports.
- Under this program, young men and women of the tribal communities from the interior areas most affected by Left Wing Extremism are taken to major cities and metropolitans across the country.
- The exchange program includes awareness sessions on various developmental welfare schemes to make them aware of the technological and industrial advancements, skill development, education, and employment opportunities in various parts of the country.
- Further, sensitizing the tribal youth about their rich traditional and cultural heritage also forms a part of the exchange program.

APTI PLUS



**'ENCORE' Software**

- The Election Commission of India has designed an in-house software called 'ENCORE' which stands for Enabling Communications on Real-time Environment.
- 'ENCORE' Software has been designed for complete Candidate and election management
- This provides a seamless facility for Returning Officers to process candidate nomination, affidavit, Voter turnout, counting, results and data management.
- The ENCORE counting application is an end-to-end application for returning officers to digitize the votes polled, tabulate the round-wise data and then take out various statutory reports of counting.
- ENCORE Scrutiny Application allows Returning Officers to do scrutiny of the nominations filed by the candidates on-line.
- After verification of the nomination, the status is marked as Accepted, Rejected or Withdrawn helping the Returning Officer to prepare the final list of contesting candidates and assign the symbols.
- Through the ENCORE Nodal App, various departments like fire, education, police, environment, CPWD give 'no objection' certificate before any permission request from political party or candidates, received for holding rallies, road shows and meetings.

APTI PLUS



**One Station One Product**

- Indian Railways' One Station One Product scheme is now functional at over 1000 stations.
- The concept of 'One Station One Product' was announced by the government in the Union Budget 2022-23.
- The scheme aims to build each railway station as a promotional hub and showcase local and indigenous manufacturing products.
- The OSOP scheme was launched with a vision to promote 'Vocal for Local'. This would help the local manufacturers to sell their products and will create additional income opportunities for the marginalized sections of society. Under the scheme, the allotment is done to all eligible applicants on a rotational basis.
- The OSOP scheme is providing the welfare of local artisans, potters, weavers, tribals etc.

**Scope**

- The eligible applicant will be allotted a temporary stall or kiosk for a period of 15 days on deposition of Rs 1,000 with Railways. The zonal railways will identify the stations, eligible products and the vendors.

**Products under OSOP**

The products under the OSOP scheme includes -

- |  |                              |                            |
|--|------------------------------|----------------------------|
| • Food items (Seasonal or Processed or semi processed foods) | • Textiles                   | • Local toys               |
| • Handicrafts  | • Handlooms                  | • Leather products         |
| • Artefacts  | • Traditional Garments       | • Local Gems and Jewellery |
|  | • Local agricultural produce |                            |

APTI PLUS

## 1.18 1 MAINS & 5 MCQs

**Q1. In India, online content piracy is a significant issue, particularly in the film and music industries. What are the reasons for the rise of Digital Piracy and what are the implications? Suggest measures to combat Piracy.**

- Digital piracy refers to **the illegal copying or distribution of copyrighted material via the Internet**. India has been ranked third (after the US and Russia) in the list of highest contributors of visits to content piracy websites with over 7 billion visits through torrent sites in 2022-- Report by Global Advisory Firm Ankura.

### Reasons for the rise of Digital Piracy

- **Large population of Internet users:** The country has a large population of Internet users, and access to high-speed Internet is becoming more widely available, which has led to an increase in the number of people accessing pirated content.
- **Advent of new technology:** Access to cheap (or free) content can appear lucrative to many. The advent of new technology has made pirated content readily available to those whose geographical locations otherwise restrict them from accessing it.
- **Streaming Platforms are Hiking Prices:** Streaming platforms are increasing their prices. The most notorious example is Netflix. So, people have decided to explore the alternative of pirating content instead.
- **An overwhelming amount of content:** Too much content is out there, and people are not willing to pay the price for something they aren't going to use. People are favouring torrenting to get the content to view the one thing they want to see rather than paying for a library of content they don't want

### Implications

- **Loss of Revenue:** Video streaming platforms in India are **losing 25-30% of overall revenues**

**to piracy, as addressable** audiences continue to get access to content without credentials.

- **Lack of awareness:** In India, the awareness of the illegalities of piracy is dismal, and there is **not enough legal infrastructure to check for compliance**.
- **Loopholes in existing laws:** Existing laws, such as the **Copyright Act, 1957**, contain loopholes and are not stringent enough, making enforcement challenging.
- **Nascent stage of new laws:** Adherence to newer laws, including the **National Intellectual Property Rights (IPR) Policy 2016**, and the setting up of Cyber Digital Crime Units, are still at the nascent stage.
- **Absence of adequate laws:** In the absence of adequate laws, **courts have only been able to pass John Doe's orders and dynamic injunctions**.
- **Impact on original content:** Piracy can impact the consumption of original content through password and credential sharing, sending files over the internet, and purchasing illegal streaming devices and services.
- **Reputational Harm:** These are available at just a fraction of the cost to the consumer but impose mounting revenue losses and reputational harm on the original creators.

### Combating Piracy

- There is a substantial need to **implement tough IP and copyright laws to protect the creators and their content**.
- IP laws are crucial for legal experts and all stakeholders involved in creating and facilitating content.
- Formulating an IPR framework is also necessary **to increase IP numbers in India, which is currently ranked 43 out of 55 countries in the global IP index**.
- In a competitive global market for investment in creativity, India with its natural advantages stands to gain from a strengthened IP environment.

- To combat digital piracy, the **movie and publishing industries should work in tandem to supervise the distribution and prevent misuse of content.**
- Moreover, consumers must be made aware of the evils of piracy. It is **not only the duty of a single body to curb piracy, but the responsibility of society as a whole to fight against it.**

**Q2. Which of the following institutions is not exempted from the Right to Information Act, 2005?**

- A. Intelligence Bureau
- B. Border Security Force
- C. Indian Space Research Organization
- D. Special Protection Group

**Choose the correct code.**

- 1. A
- 2. B
- 3. C
- 4. D

**Q3. The Comptroller and Auditor General (CAG) does not audit the receipts and expenditure of**

- A. Municipal Undertakings
- B. State Governments
- C. Government Companies
- D. Union Government

**Choose the correct code.**

- 1. A
- 2. B
- 3. C
- 4. D

**Q4. Recently, ENCORE Software was in the news. What is it related to?**

- A. Cyber Security
- B. Combat Deepfake Content
- C. Big Data Analytics
- D. Election Management

**Choose the correct code.**

- 1. A
- 2. B
- 3. C
- 4. D

**Q5. SATHI program is an initiative of which of the following Departments?**

- A. Department of Science and Technology
- B. Department of Justice
- C. Department of Pension & Pensioner's Welfare
- D. Ministry of Tribal Affairs

**Choose the correct code.**

- 1. A
- 2. B
- 3. C
- 4. D

**Q6. Which of the following are included in 'One Station One Product'?**

- A. Local agricultural produce
- B. Local toys
- C. Leather products
- D. Local Gems and Jewellery

**Choose the correct code.**

- A) 1, 2 and 3 only
- B) 1 and 3 only
- C) All 4
- D) None

**ANSWERS: 2) C, 3) A, 4) D, 5) A, 6) C**

## 2. INTERNATIONAL RELATIONS

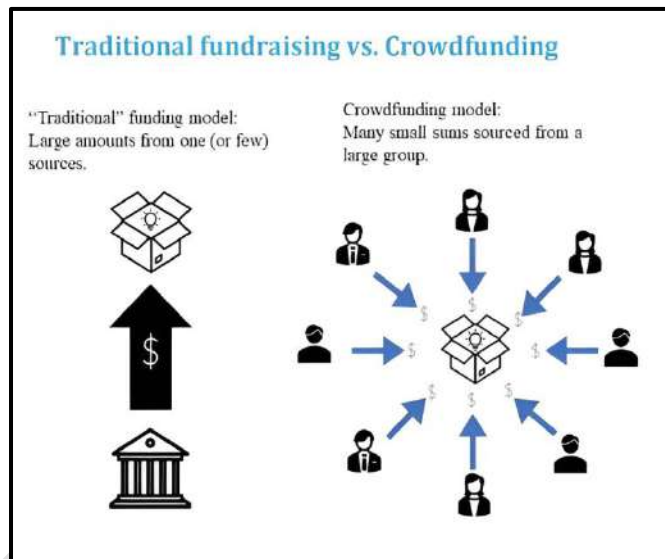
### 2.1 REPORT ON CROWDFUNDING FOR TERRORISM FINANCING

#### Context

- Recently 'FATF' released a report titled, 'Crowdfunding for Terrorism Financing', stating that 'Violent extremist organizations' in India collected funds through well-structured networks.

#### Details

- India's onsite assessment by the Financial Action Task Force (FATF) is slated for November, while the assessment is likely to come up for discussion in the plenary discussion in June 2024.
- Due to the COVID-19 pandemic and the pause in the FATF's assessment process, the mutual evaluation of India, which was last carried out in 2010, had been postponed to 2023.



#### Key Findings

##### Challenges in Investigation:

- A violent extremist organization's intricate fundraising networks, spanning the entire nation, pose significant challenges for authorities. Soliciting funds through mosques and public spaces, the group utilizes both offline and online mechanisms, including QR codes and account details.

##### Scope of Financial Operations:

- Operating through over 3,000 bank accounts and informal value transfer systems, the organization blurs the lines between domestic and foreign transactions. This complexity heightens the difficulty of investigating the financial flows, requiring a multifaceted approach.

##### Utilization of Funds:

- Funds garnered through diverse channels serve ominous purposes. Procurement of arms, ammunition, and training for cadres reflects a tangible threat. Additionally, a strategic move involves investing funds in businesses and real estate projects, creating a sustainable income stream for terrorist activities.

##### Integrative Countermeasures:

- Addressing such multifaceted terrorism financing requires a holistic approach. Enhanced scrutiny of financial institutions, cooperation across borders, and technological advancements for tracking digital transactions are imperative. Additionally, fostering awareness to counter radicalization and vigilant monitoring of fundraising activities are crucial components.

#### Global Crowdfunding Market

- The global crowdfunding market at \$17.2 billion in 2020 and note that it is expected to reach \$34.6 billion by 2026.
- In 2022, there were over 6 million crowdfunding campaigns around the world.



- The possibility of quickly and easily reaching a global audience can make crowdfunding an attractive method of fundraising for Terror Financing.

### Concerns

- Anti-money laundering and counter-terrorist financing (AML/CFT) regulation is **not consistent across the globe.**
- Many **countries do not systematically assess the risks** related to crowdfunding activity and therefore **comprehensive data about its misuse is still generally lacking.**

### Recommendations made in the Report

- Countries **should assess the nature, size and risks associated with all types and methods of crowd funding** in their particular jurisdiction, including companies, individuals or any other type of organization.
- The report further recommended that **countries should also take note of the risk analysis of the sector more globally** given the cross-border nature of crowd funding campaigns and associated financial transfers.
- Countries should recognize that **even if their jurisdiction does not have significant terrorism activity domestically, their jurisdiction can still be used as a pass-through for financial flows.**

## 2.2 INDIA-UAE RELATIONS

### Context

- The United Arab Emirates is considering investing as much as \$50 billion in India, its second-largest trading partner, as part of a broader bet on the world's fastest-growing major economy.



### Details

- Provisional pledges from the UAE could be announced early next year, people familiar with the matter said, asking not to be named as the information is not public.
- According to a report in Bloomberg, the UAE could announce these investments into India next year, coinciding with the General Elections in which Prime Minister Narendra Modi is set to seek a third term in office.

- The term of India's Lok Sabha, the lower house of Indian parliament directly elected by the people, is set to end in May 2024.
- The new set of investments would follow Prime Minister Narendra Modi's meetings with UAE President Sheikh Mohammed bin Zayed.

*New Delhi and Abu Dhabi aim to increase the non-oil bilateral trade to \$100 billion. A total of 2.8 million Indian citizens live in the UAE.*

### **About India-UAE Relations**

- India and the United Arab Emirates (UAE) share historical and cultural ties dating back centuries.
- Trade and cultural exchanges have been prevalent between the two regions for centuries, facilitated by geographical proximity and historical trade routes.

#### Indian Diaspora in the UAE:

- The UAE is home to a large Indian diaspora, which plays a crucial role in strengthening people-to-people ties.
- Indian expatriates in the UAE contribute to the country's economic growth and cultural diversity.
- The UAE government has implemented various measures to protect the rights and welfare of the Indian community.

#### High-Level Visits and Exchanges:

- Regular high-level visits between India and the UAE have enhanced bilateral relations.
- These visits involve interactions between top government officials, ministers, and business delegations from both countries.
- The exchange of visits promotes dialogue, cooperation, and collaboration across various sectors.

#### Strategic Cooperation and Security:

- India and the UAE share a common interest in promoting regional stability and security.
- Both countries have cooperated in counter-terrorism efforts, intelligence sharing, and maritime security initiatives.
- The UAE has supported India's position on cross-border terrorism and has taken steps to curb financing of terrorism.

#### Cultural and People-to-People Exchanges:

- Cultural exchanges between India and the UAE promote mutual understanding and appreciation of each other's heritage.
- Festivals, music, dance, and art events showcase the cultural diversity of both nations.
- Tourism between the two countries has seen significant growth, with Indian tourists visiting the UAE for leisure, business, and medical tourism.

#### Defense and Military Cooperation:

- India and the UAE have strengthened defense cooperation through joint military exercises, training programs, and defense equipment purchases.
- Cooperation in the defense sector includes naval exercises, intelligence sharing, and joint efforts to combat piracy and ensure maritime security.

#### Humanitarian Assistance and Disaster Relief:

- India and the UAE have collaborated in providing humanitarian assistance and disaster relief during natural disasters and emergencies.
- The two countries have extended support to each other during times of crisis, reflecting the strong bonds of friendship and solidarity.

### **Major Developments in India UAE Relations**

- In 2015, Prime Minister Narendra Modi visited the UAE and signed a Comprehensive Strategic Partnership Agreement between the two countries. This agreement covers a wide range of areas, including trade, investment, defense, security, and culture.
- In 2016, the UAE invested \$75 billion in India's infrastructure sector. In 2017, the UAE and India agreed to cooperate on renewable energy projects.
- In 2018, the UAE and India signed a Memorandum of Understanding on defense cooperation.
- In 2020, the UAE and India signed a Free Trade Agreement.

### **Closing thoughts**

- The growing engagements between India and the UAE has to be seen within the broader

contexts of UAE's policy of engaging with Asia to improve economic prospects and India's search for foreign investments to expedite economic growth and address the threat of extremism and terrorism.

- Medical tourism can be an important area where India can attract UAE given India's high quality man power in medical sector and

improving medical infrastructure in the country.

- There are further untapped potentials in the arena of renewable energy. The cost for production and transmission of solar energy in the UAE are a fraction to that of India and this is a priority area for the UAE government.



## 2.3 AKHAURA-AGARTALA RAIL LINK

### Context

- Prime Minister Narendra Modi and his Bangladesh counterpart Sheikh Hasina virtually inaugurated Agartala-Akhaura rail line project.

### Details

- The rail link, being revived after more than 70 years, is being seen as a first step to connect Tripura, Mizoram and southern Assam to Kolkata through Bangladesh, to replace the longer route via Guwahati.
- In a historic move, Bangladesh and northeast India will re-establish rail connectivity through Tripura on Wednesday, after a gap of nearly seven and half decades.
- The much awaited Akhaura-Agartala rail connection will be inaugurated virtually by Prime Minister Narendra Modi and his Bangladesh counterpart Sheikh Hasina.



**The Akhaura-Agartala Cross-Border Rail Link project** was supported by a grant assistance of ₹392.52 crore that was extended to Bangladesh by the Indian government. The rail link is 12.24 km long, with a 6.78 km dual gauge rail line in Bangladesh and 5.46 km in Tripura.

### Agartala-Akhaura Rail Line Project

#### About

- Akhaura-Agartala line is a railway line between Bangladesh and India.

#### Link

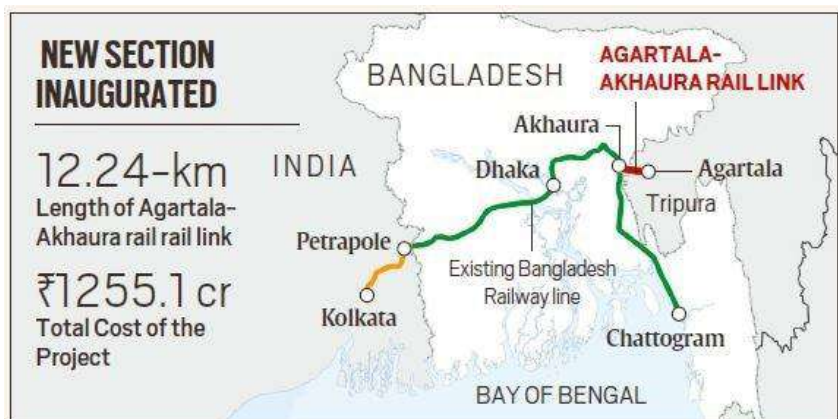
- It will connect India's Northeastern state of Tripura with Bangladesh.
- The train will start from Agartala and move to Nischintapur, on the Indian-Bangladesh border, where the immigration checks will be held.

- The first station on the Bangladesh side will be Gangasagar.

#### Signing

- The 15-km-long project, was signed by both countries in 2013.

#### Route portion



- Of the 15 km link, 33.52 percent (5.05 km) is in India and the remaining 10.014 km is in Bangladesh.

#### Aim

- The line aims to enhance bilateral trade and tourism, as well as reduce travel time between Agartala and Kolkata via Dhaka.

#### Priority Region

- The Northeast has been earmarked as a priority region in this policy.

#### Strategic Importance

- The project is part of India's "Act East Policy", which aims to promote economic cooperation and develop strategic ties with countries in the Asia-Pacific region.

#### **Line Specifications**

- It will be a dual gauge station for both passenger and goods interchange.
- The Indian Railways portion has a broad gauge system while the portion in Akhaura has a metre gauge system.
- In a broad gauge, the distance between the two tracks is 1.676m, while in the metre gauge system, the distance stands at one metre.

#### Benefits

- It will reduce the travel time between Agartala and Kolkata, via Dhaka to 10 hours from 31 hours.

#### **Why is the project important to Tripura?**

- For land-locked Tripura, any connectivity project is of great practical significance.
- The project is **crucial for connectivity in the NE region and would make Tripura the gateway for tourism.**
- Tripura is going to be the gateway for tourism and transport between India and Bangladesh.
- Due to the Agartala-Akhaura railway project, the distance between Agartala and Kolkata will be effectively reduced from 1600 km to 500 km.
- Tripura shares an 856-km international border with Bangladesh, the second highest after West Bengal. The North Eastern state is

surrounded by the country on all three sides except Assam on the fourth.

- With the new connectivity project, **people on both sides can now hope for closer and smoother ties.**

#### Significance

- The upcoming rail project will "boost the bilateral relations between India and Bangladesh", which will help grow small-scale industries in the border area and boost tourism in the Northeast region, particularly Tripura.
- It will also help in the export and import of commodities faster and help the local producers to export their products outside the country faster.

#### **Other connectivity routes between India and Bangladesh**

- As of now, there are five broad gauge routes connecting India and Bangladesh, namely Gede-Darshana, Benapole-Petrapole, Singhabad-Rohanpur, Radhikapur-Birol and Haldibari-Chilahati.
- There are also three passenger trains running between India and Bangladesh — Kolkata-Dhaka Maitree Express, Kolkata-Khulna Bandhan Express and New Jalpaiguri-Dhaka Mitali Express.

## 2.4 INDIA-BHUTAN RELATIONS

### Context

- Recently, the king of Bhutan arrived in New Delhi to a red-carpet welcome.



### Details

- Bhutan King Jigme Khesar Namgyel Wangchuck arrived here on Sunday to a red carpet welcome with External Affairs Minister S Jaishankar receiving him at the airport, reflecting the importance India has attached to the trip.
- Wangchuck's high-profile trip to India comes amid renewed push by Bhutan and China for an early settlement of their decades-old boundary dispute.
- New Delhi has been keeping a close eye on the negotiations between Bhutan and China on their boundary row as it could have implications for India's security interests, especially in the Doklam tri-junction.

### About India-Bhutan Relationships

#### Background of relations:

- India and Bhutan share unique and exemplary bilateral relations, which are based on mutual trust, goodwill and understanding. **Formal diplomatic relations between India and Bhutan were established in 1968.**
- The basic framework of India-Bhutan relations is the **Treaty of Friendship and Cooperation signed in 1949** between the two countries, which was renewed in February 2007.

- The bilateral ties have been advanced by **regular high-level exchanges** between the two countries.

#### Historical Bonds:

- India and Bhutan share a deep-rooted and historical friendship that goes beyond diplomatic ties. The Treaty of Friendship signed in 1949 laid the foundation, emphasizing mutual respect and non-interference in each other's affairs.

#### Strategic Partnership:

- The relationship has evolved into a strategic partnership, with cooperation spanning various sectors. India has been a key partner in Bhutan's socio-economic development, providing assistance in infrastructure, healthcare, and education.

#### Security Cooperation:

- Both nations collaborate closely on security matters, with India playing a crucial role in ensuring Bhutan's security. The military cooperation is underlined by shared concerns about regional stability and counterterrorism efforts.

#### Hydropower Cooperation:

- A significant aspect of their collaboration is in the energy sector, particularly hydropower. India supports Bhutan's hydropower projects, contributing to Bhutan's economic growth and fostering energy security in the region.

#### Cultural Affinities:

- Cultural affinities between the two nations are evident in their people-to-people ties. Regular cultural exchanges and educational programs deepen understanding and strengthen the cultural fabric of the relationship.

#### Environmental Stewardship:

- Both nations prioritize environmental conservation, evident in their joint initiatives to preserve the Eastern Himalayas. Bhutan's commitment to carbon neutrality aligns with India's sustainable development goals, fostering a shared vision for a greener future.

### Trade and Economic Ties:

- India is Bhutan's largest trading partner.
- In 2020, bilateral trade accounted for 82.6% of Bhutan's total trade.
- Imports from India accounting for more than 77.1% of Bhutan's total imports.
- Bhutan's exports to India constituted 90.2 % of its total exports.
- The revised **Bilateral Agreement on Trade, Commerce and Transit between India and Bhutan** came into effect in 2017, and would be valid for ten years.

### **Way Forward**

- India needs to step up efforts to publicize the benefits that accrue to Bhutan from Indian projects.
- India continuously needs to explore new areas of cooperation with Bhutan.
- India should try as much as possible to remain out of Bhutan's internal matters, though it can act as a mentor.
- **Safety of Border from China is a concern for both nations.** Therefore, both sides need to work together on this issue.
- Being neighbours, it is necessary that **both nations continuously recognise value of each other.** For this, regular high level visits from both the sides are necessary.

## 2.5 INDIA-UNITED KINGDOM RELATIONS

### **Context**

- Recently India is to be added to the U.K. safe states list, ruling out asylum rights for illegal migrants from the country.

### **Details**

- The UK government has tabled plans to add India to an expanded list of safe states, which would speed up the process of returning Indians who travel from the country illegally and rule out their chance of seeking asylum in Britain.
- Draft legislation laid in the House of Commons on November 8 includes India and Georgia as the countries to be added to the list.
- The UK Home Office said the move is aimed at strengthening the country's immigration system and helping prevent abuse by people making unfounded protection claims.



### **About India-UK Relationship**

#### Evolution of Bilateral Relations:

- The relationship between India and the UK has evolved significantly since the 1990s, with India's economic reforms paving the way for a robust **strategic partnership by 2004.**
- This partnership has seen various initiatives to strengthen ties, culminating in the formal launch of free trade agreement (FTA) negotiations in 2022.

#### Economic and Commercial Landscape:

- Total trade in goods and services between the UK and India reached **USD 32.7 billion in the fiscal year 2021-2022**, with India holding a trade surplus.
- **India's major exports to the UK include garments, textiles, gems, and pharmaceuticals**, while the UK is a significant source of FDI for India.
- The services sector, particularly IT services, plays a pivotal role in this economic relationship.

#### Indian Diaspora in the UK:

- The Indian diaspora forms a substantial part of the UK's population, comprising around 2.86%. As of the 2021 UK Census, the Indian population stands at 1.9 million, making it the largest source of European remittances to India.
- This diaspora connection adds a cultural and social dimension to the bilateral ties.

#### Education and Research Collaboration:

- The Science and Technology Agreement of 1996 laid the foundation for robust education and research ties between India and the UK. The Science & Innovation Council and the UK-India Education and Research Initiative (UKIERI) further enhance cooperation in science, technology, and education, fostering academic exchanges and collaborative research projects.

#### Climate and Environment Cooperation:

- Both countries collaborate on climate-related issues and environmental sustainability. The establishment of the Green Growth Equity Fund reflects joint efforts to promote renewable energy and address environmental challenges.

#### Health Collaboration:

- Collaboration in the health sector extends to pandemic preparedness, research, and the promotion of traditional Indian practices such as Ayurveda and Yoga. This partnership underscores the importance of shared knowledge and expertise in addressing global health challenges.

#### Cultural Engagement:

- The Memorandum of Understanding on Cultural Cooperation (2010) and the Nehru Centre for Cultural Outreach exemplify the commitment to cultural exchange. The concept of a 'living bridge' emphasizes the dynamic interaction between the two nations, fostering mutual understanding through cultural initiatives.

#### People-to-People Contact:

- The Indian diaspora's significant influence in the UK, coupled with a vibrant Indian student community, strengthens people-to-people ties. Shared interests in cricket, cuisine, yoga, and festivals contribute to the cultural affinity between the two nations.

### Challenges in FTA Negotiations

- **Services & Investment:** The UK seeks liberalization in India's services markets, especially in telecommunications, finance, and legal services. However, domestic opposition in India poses a hurdle.
- **Temporary Movement:** Simplification of UK's business and temporary visas is a sticking point. Both countries have initiated a reciprocal Young Professional visa scheme, but further easing in immigration rules, particularly in IT and healthcare, is crucial.
- **Data Policies:** Data protection concerns in India, without a GDPR-like framework, create apprehensions for UK firms. Implementing the pending Digital Personal Data Protection Bill 2023 can address these concerns.
- **IPR and Medicines:** The leaked IPR chapter of the FTA proposes harmonization of patent laws, raising concerns about the affordability of generic medicines in India. Balancing IPR requirements is essential for a fair agreement.



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- **Agriculture:** Agriculture remains a sensitive sector for both countries. While an FTA could enhance India's agricultural exports to the UK, concerns about British food imports require careful consideration and potential compensation mechanisms for Indian farmers.

### UK's Significance for India

- Support for UNSC seat, NSG membership, and development objectives.
- Economic and technological partnership, contributing to India's growth trajectory.
- Defense and security cooperation, bolstering regional stability.

### India's Significance for the UK

- Integral to "Global Britain" ambitions, emphasizing the importance of India in the UK's international engagements.
- Seizing opportunities in the Indo-Pacific, recognizing India as a key regional player.
- Strong economic ties, investments, and a shared commitment to revitalizing the Commonwealth.

## 2.6 INDIA-U.S. 2+2 MINISTERIAL DIALOGUE

### Context

- Indian Defence Minister met their counterparts from the US government, for the fifth 2+2 Ministerial Dialogue held in New Delhi.

### Details

- The 2+2 Ministerial Dialogue is a diplomatic summit held every year since 2018.
- It was initially held between the Minister of External Affairs or Foreign Minister, and Defence Minister of India with the Secretary of State and Secretary of Defense of the United States to discuss and work on common issues of concern to improve and strengthen India–United States relations.
- In 2019, the summit involved the respective Foreign and Defence ministers between both India and Japan. In 2021, the summit was expanded to meetings with Australia and Russia's Foreign and Defence ministers.



*The 2+2 meetings signify the participation of two high-level representatives, Ministers holding Foreign and Defence portfolios, from each of the two countries who aim to enhance the scope of dialogue between them.*

### About 2+2 Ministerial Dialogue

#### Significance of 2+2 Meetings:

- The 2+2 meetings serve as a vital platform for diplomatic engagement, involving two high-level representatives from each country—specifically, Ministers holding the portfolios of Foreign Affairs and Defense. This format enhances the depth and scope of dialogue between the two nations.

#### Comprehensive Dialogue:

- By bringing together key decision-makers in foreign affairs and defense, the 2+2 mechanism allows for a comprehensive and integrated dialogue. This ensures that both diplomatic and security considerations are thoroughly addressed, fostering a more nuanced understanding of each other's strategic concerns.

#### Strengthening Bilateral Ties:

- The participation of high-level representatives reflects a commitment to building a robust and integrated strategic relationship. The meetings provide an opportunity for the countries involved to strengthen



their bilateral ties by addressing not only diplomatic and defense issues but also by considering political factors that shape the overall relationship.

**Appreciation of Concerns and Sensitivities:**

- The 2+2 format facilitates a nuanced appreciation of each other's strategic concerns and sensitivities. This understanding is crucial in navigating complex geopolitical landscapes and ensures that policies and decisions take into account the unique political factors on both sides.

**Adaptation to Global Changes:**

- In a rapidly changing global environment, the 2+2 meetings enable partners to adapt and respond effectively to emerging challenges and opportunities. The flexibility of this mechanism allows for timely adjustments in strategy and policy, reflecting the dynamic nature of international relations.

**Building Trust and Integration:**

- Regular 2+2 engagements contribute to the building of trust between nations. The exchange of perspectives at the highest levels of government fosters a sense of mutual understanding, laying the groundwork for more integrated and cooperative approaches to shared challenges.

### Key Highlights of the India-US 2+2 Dialogue

**Defense Deals and Collaborations:**

- India and the U.S. are actively engaged in collaborative defense initiatives, including the co-development and co-production of defense systems.
- Negotiations are underway for the purchase of MQ-9B unmanned aerial vehicles and the licensed manufacture of General Electric's F-414 jet engine in India, aligning with India's goal of enhancing its defense capabilities.
- The potential finalization of a Security of Supply Arrangement (SOSA) is a key priority, aiming to integrate the defense industrial ecosystems of both countries and strengthen supply chain resilience.

**Maritime Security:**

- Both nations prioritize maritime security in the Indo-Pacific region, emphasizing the importance of safeguarding vital sea lanes and promoting stability.

**Infantry Combat Vehicles and Future Plans:**


- Discussions around infantry combat vehicles, particularly the Stryker, are part of the defense industry cooperation roadmap.
- Formal cooperation in infantry combat systems awaits the finalization of the Indian military's needs and the establishment of a production plan through collaboration between Indian and U.S. industry and military teams.

**Advancements in Defense Technology Cooperation:**

- Progress in the India-U.S. Defense Industrial Ecosystem, INDUS-X, launched in June 2023, was reviewed. This initiative aims to expand the strategic technology partnership and defense industrial cooperation between the two nations.
- Membership in Combined Maritime Forces:
- India's decision to become a full member of the Combined Maritime Forces, headquartered in Bahrain, was welcomed by the U.S. Defense Secretary, signifying India's commitment to regional maritime security.

**Space and Semiconductor Collaboration:**

- Progress under the India-US Initiative on Critical and Emerging Technology (iCET) was welcomed, focusing on science, technology, and critical technology collaborations in commercial and defense sectors. The ministers called for continued strategic partnerships in emerging technologies.



**Discussion on Global Issues**

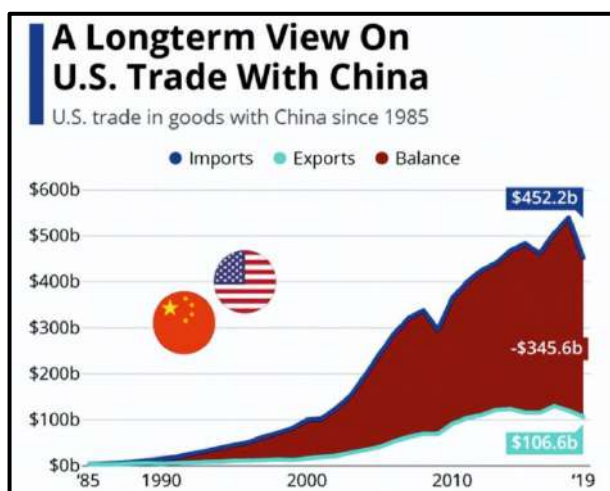
- **Chinese Aggression:** The U.S. emphasized that the bilateral relationship extends beyond addressing challenges posed by China.

- **India-Canada Row:** The ongoing row, particularly concerning security concerns related to a Khalistan separatist, was addressed. India communicated its position on core security concerns.
- **Israel-Hamas War:** India reiterated its stance on the Israel-Hamas Conflict, advocating for a two-state solution and the early resumption of dialogue. Humanitarian assistance has been provided, emphasizing adherence to international humanitarian law and the condemnation of civilian casualties.

## 2.7 US-CHINA ENGAGEMENT

### Context

- India's rise in the international system allows it to effectively handle any sudden shifts in great power relations.



### Details

- As the leaders of the United States and China try to arrest the steady downside in bilateral relations, India has little reason to worry about a structural shift in the most consequential great power relationship in the world today.
- Since the variations in the US-China relationship affect all major powers and regions, there has been global interest in this week's summit between the US President Joe Biden and the Chinese leader Xi Jinping in San Francisco on the margins of the Asia-Pacific Economic Cooperation (APEC) summit.

### About key highlights of the US-China Summit

#### Diplomatic Engagement for Conflict Prevention:

- **High-level Diplomacy:** Recognizing the importance of high-level engagement and open channels to prevent potential conflicts, both the US and China have emphasized the

need for diplomatic efforts to maintain stability.

#### Military Communication Restoration:

- **Military Cooperation:** Both nations have focused on restoring military-to-military communications, emphasizing its crucial role in managing tensions and preventing misunderstandings that could lead to conflict.

#### Counter Narcotics Commitment:

- **Counter Narcotics Pledge:** China has pledged to curb outbound shipments of substances used in the production of fentanyl, a potent opioid linked to fatal overdoses in the US, demonstrating a commitment to address shared concerns.

#### Technology Risk and Safety Discussions:

- **Technology Collaboration:** Acknowledging the significance of technology, both countries have agreed to engage in discussions addressing the risk and safety issues associated with artificial intelligence, highlighting a cooperative approach to technological challenges.

#### Human Rights Concerns:

- **Human Rights Dialogue:** The US has raised concerns about human rights violations in Xinjiang, Tibet, and other regions, urging China to address these issues. China, however, has dismissed these calls as interference in its internal affairs.

#### Climate Change Mitigation:

- **Climate Change Cooperation:** Both nations have committed to significantly increasing clean energy efforts, reducing reliance on fossil fuels, and mitigating emissions to combat global warming, showcasing a shared commitment to address climate change.

#### Middle East Engagement:

- **Middle East Conflict Management:** The complex roles of both countries in the Middle

East were acknowledged, with discussions on the challenges and responsibilities each nation holds. The US sought China's assistance in de-escalating tensions with Iran and preventing proxy attacks on US targets in the Middle East.

#### Taiwan and One China Policy:

- **Taiwan Relations:** China urged the US to uphold its commitments regarding Taiwan's independence, emphasizing the importance of the One China Policy, while the US maintains its stance on Taiwan.

### **How does the US-China Summit affect India's interests?**

#### India-US Strategic Partnership:

- The India-US relationship stands as a strategic partnership, and India benefits from a reduction in US-China tensions, contributing to regional stability.

#### Concerns about Sino-American Collaboration:

- India views the prospect of Sino-American collaboration in Asia, especially in the context of a G-2 arrangement, with caution due to potential implications for regional dynamics.

#### Truce vs. Strategic Partnership:

- The recent summit focused on establishing a truce rather than forging a comprehensive strategic partnership, raising considerations for India's geopolitical landscape.

#### China's Diplomatic Push:

- India remains wary of China's diplomatic engagements with global powers and its relationships in South Asia, including concerns about the unresolved India-China border standoff.

#### Economic Impact and Opportunities:

- The strained US-China relationship has prompted several US companies, such as Apple and Microsoft, to explore diversification and relocate manufacturing plants to India, presenting economic opportunities.

#### Climate Change Agreements:

- Past pacts between the US and China on climate change have raised concerns for India, as they may not fully address India's specific concerns and priorities in the global climate agenda.

#### Geopolitical Strategy in Indo-Pacific and Beyond:

- India must closely monitor potential US-China understandings on regional security issues, particularly in the Indo-Pacific, the Middle East, and Europe, to safeguard its geopolitical interests.

### **Way Forward**

- While it must continuously assess the changes in great power relations, especially among the US, China, and Russia, India's emphasis should be on taking advantage of the new possibilities to strengthen its ties with the US, maintaining its long-standing ties with Russia, and managing the difficult ties with China.
- India's own rise in the international system allows it to effectively handle any sudden shifts in great power relations.
- For now, the word from San Francisco is that the prospect for any dramatic change in US-China relations is remote.

## 2.8 MYANMAR REFUGEES CROSS OVER TO MIZORAM

### **Context**

- The Indian border town of Zokhawthar, only a few kilometers away from the Myanmar town of Rikhawdar – the epicenter of the fighting, has emerged as the center of the cross-border movement.

### **Details**

- Around 2,000 refugees are estimated to have crossed over to Mizoram's Champhai since Sunday night amid fierce fighting between guerrillas of Chin Defence Force and the Myanmar military close to the Indo-Myanmar international border.
- The Indian border town of Zokhawthar, only a few kilometers away from the Myanmar town

of Rikhawdar – the epicenter of the fighting, has emerged as the center of the cross-border movement. The two towns are only separated by the Tiau River.

*A refugee is a person who has to leave their country because they are in danger and might get hurt. This could be because of fighting, bullying, or people not liking them because of their race, religion, nationality, or beliefs. They usually can't go back home because it's not safe, or they are too scared to do so.*



## How does India handle the issue of refugees?

### International Commitments:

- India is not a party to the Refugee Convention or its Protocol, yet it extends asylum to refugees, especially from neighboring countries, adhering to UNHCR guidelines.

### Legal Framework:

- The legal framework in India does not distinguish between foreigners and refugees. Acts such as the Foreigners Act, Passport Act, Extradition Act, Citizenship Act, and Illegal Migrant Act apply uniformly, allowing for detention and deportation.

### Administrative Approach:

- Administrative decision-making governs the status of refugees and asylum seekers in India. However, the process lacks consistency and often relies on improvised measures.

### Judicial Intervention:

- The Indian judiciary plays a crucial role in safeguarding refugees from deportation, expulsion, or forced return. The Constitution guarantees rights to all individuals within the

country, irrespective of their citizenship status.

### Expanding Constitutional Rights:

- Courts in India have interpreted constitutional rights broadly, encompassing protection against discrimination, ensuring fair treatment, and upholding the right to life and freedom.

## Role of India related to refugees

### The distinction between Refugees and Immigrants:

- India faces challenges in **distinguishing between refugees fleeing persecution and immigrants seeking economic opportunities**, leading to a potential blurring of distinctions.

### Concerns of Misuse and Security:

- Legislation addressing immigration raises concerns** about potential misuse by individuals with anti-country motives, including terrorists and criminals. The implementation of such laws may also pose financial burdens on the country.

### Flexibility in Decision-Making:

- The absence of specific refugee legislation in India provides flexibility in making decisions related to refugees.** This allows the government to classify any group as illegal immigrants, as exemplified in the case of the Rohingya, despite UNHCR verification.

### Economic Impact:

- Addressing immigration issues may have economic implications for the country. **Balancing humanitarian concerns with the potential economic impact of hosting refugees requires careful consideration.**

### Role of the Judiciary:

- Indian courts play a crucial role in safeguarding refugees from deportation.** The judiciary interprets constitutional rights, ensuring protection against discrimination, and unfair treatment, and upholding the right to life and freedom for individuals within India's borders.

### International Engagement:

- While India is not a party to the Refugee Convention**, it grants asylum to refugees from neighboring countries and follows UNHCR

guidelines for refugees from other nations like Afghanistan and Myanmar.

#### Harmonizing Laws:

- India's legal framework, encompassing acts such as the **Foreigners Act, Passport Act, Extradition Act, Citizenship Act, and Illegal Migrant Act**, treats both foreigners and refugees alike. Harmonizing these laws to address the unique needs of refugees is a complex but essential task.

#### Constitutional Safeguards:

- The **Constitution of India ensures the rights of all individuals within its borders**, irrespective of their citizenship status. The judiciary's interpretation of constitutional rights plays a pivotal role in safeguarding the rights of refugees.

### **Future Prospective**

#### Enacting Refugee Legislation:

- **The absence of specific refugee legislation in India poses challenges in holding oppressive governments accountable for persecuting their citizens. The implementation of comprehensive refugee laws can serve as a deterrent, discouraging neighboring governments from taking actions that force people to seek refuge in India.**

#### Protecting Vulnerable Groups:

- **It is crucial to prioritize the protection of vulnerable groups, particularly women and child refugees, from experiencing violence and harassment either from authorities or locals. Developing targeted policies and measures within the framework of refugee legislation can address the unique needs and challenges faced by these groups.**

## 2.9 CHINA-MYANMAR ECONOMIC CORRIDOR

### **Context**

- In a significant move towards expanding the Belt and Road Initiative (BRI) in South Asia, China has expressed its commitment to prioritize the extension of the China-Myanmar Economic Corridor (CMEC) to Sri Lanka.

### **Details**

- China is "prioritizing" the extension of the China-Myanmar Economic Corridor (CMEC) to Sri Lanka, the country's Special Envoy told President Ranil Wickremesinghe on Monday, in an indication that China is looking to scale up the Belt and Road Initiative (BRI) project in South Asia.

### **About China-Myanmar Economic Corridor (CMEC)**

- **The China-Myanmar Economic Corridor (CMEC) stands as the latest addition among the six land corridors under the Belt and Road Initiative (BRI).**
- Notably, it has gained prominence, surpassing the **initial focus on the Bangladesh-China-India Myanmar (BCIM) corridor.**

#### Evolution from BCIM to CMEC

- **Originally conceived as part of the ambitious 'Bangladesh China India Myanmar (BCIM) corridor' proposed in 2013, the CMEC took a distinct trajectory and evolved into a standalone economic corridor in 2017.**
- This shift marked a strategic realignment of the regional economic dynamics.

#### Exclusion of India and Bhutan from BRI

- **India and Bhutan remain the sole countries in South Asia that have chosen to stay outside the Belt and Road Initiative. While many nations in the region participate in BRI projects, India and Bhutan have maintained a stance of non-participation.**

#### BCIM Corridor Challenges

- **The Bangladesh China India Myanmar (BCIM) corridor, proposed in 2013 with the vision of connecting Kunming in China's Yunnan province to Kolkata, has encountered significant challenges and has experienced slow progress.**
- **The transition of the CMEC from the BCIM corridor underscores the complexities and impediments faced by the BCIM initiative.**

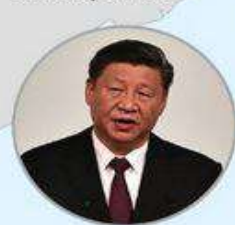
## China-Myanmar Economic Corridor

Aims to connect the Middle Kingdom to the Indian Ocean, a key route in Beijing's 'Belt and Road' vision for infrastructure and influence spanning the globe

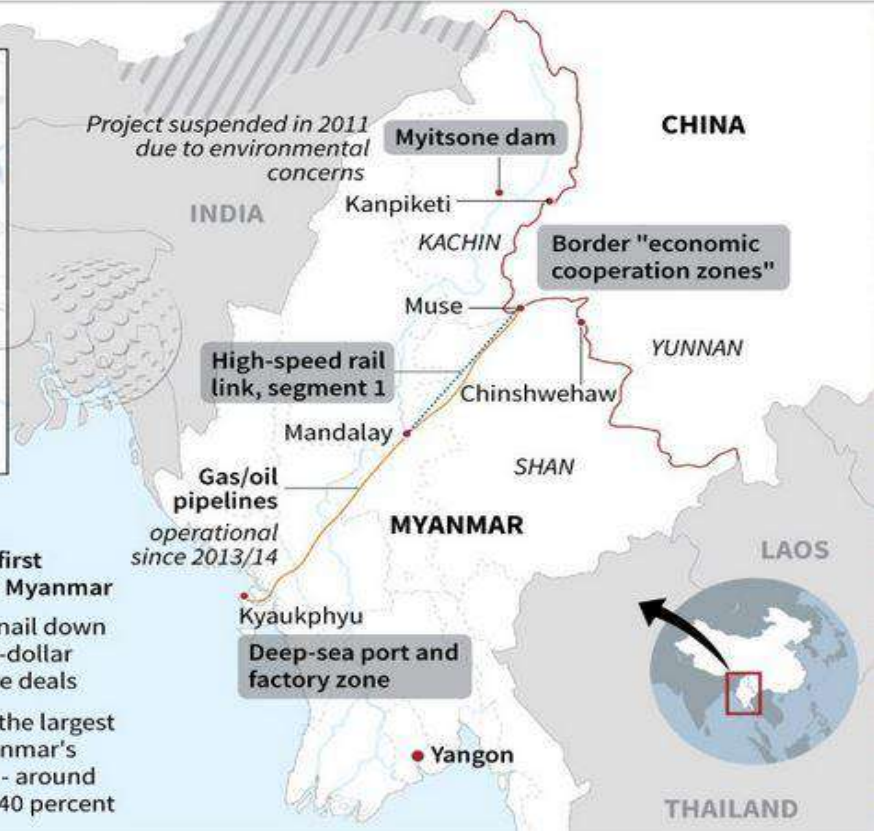
### Major projects



### China President visit January 17-18



**Xi Jinping's first state visit to Myanmar**  
Expected to nail down multi-billion-dollar infrastructure deals  
China holds the largest share of Myanmar's foreign debt - around \$4 billion or 40 percent



### CMEC's Regional Significance

- As the CMEC takes center stage, it signifies China's strategic recalibration in the region. The corridor is expected to play a crucial role in enhancing economic cooperation and connectivity between China and Myanmar, opening up new avenues for trade and investment.

### Overview of CMEC

- The China-Myanmar Economic Corridor (CMEC) is a comprehensive initiative comprising diverse infrastructure projects designed to enhance connectivity between China and Myanmar.
- This corridor plays a pivotal role in fostering economic cooperation and facilitating transportation links.

### Connectivity from Yunnan to Kyaukpyu

- The CMEC focuses on constructing road and rail transport infrastructure, connecting China's Yunnan province to Kyaukpyu in Rakhine State through Muej and Mandalay.

- This strategic alignment aims to strengthen economic ties and streamline the movement of goods and people between the two nations.

### Strategic Significance and BRI Integration

- Both the CMEC and the China-Pakistan Economic Corridor (CPEC) are integral components of the Belt and Road Initiative (BRI). They share a common objective of providing China with alternative access routes to warm waters, mitigating the Malacca dilemma. While the CMEC taps into the Bay of Bengal, the CPEC facilitates access to deep-sea ports in the Arabian Sea.

### Key Projects Under CMEC

- Several major projects fall under the umbrella of the CMEC, each contributing to the corridor's multifaceted development. These include the Kyaukphyu Special Economic Zone (SEZ), Kyaukphyu-Kunming Railway, Oil and Gas Pipeline, New Yangon City Project, and Myitkyina Industrial Park. These initiatives

collectively aim to stimulate economic growth and infrastructure development.

#### Kyaukphyu-Kunming Railway Project

- A notable project within CMEC is the **Kyaukphyu-Kunming Railway**, which integrates into the broader Pan-Asia Railway network. This railway is designed to link the port of Kyaukphyu in Myanmar with Kunming, the capital of China's Yunnan province.
- The primary purpose is to facilitate efficient transportation of goods and people, fostering economic exchange between the two nations.

### **Impact on India**

#### Growing Chinese Presence in the Indian Ocean Region

- China's expansive infrastructure projects in **South Asia** are contributing to its increasing presence in the Indian Ocean region. The China-Myanmar Economic Corridor (CMEC) is a notable element of this strategy, prompting considerations for India's strategic interests.

#### Concerns Regarding CMEC and Bay of Bengal

- India has legitimate concerns regarding CMEC, particularly as it extends into the **Bay of Bengal**. The corridor's proximity to the Andaman and Nicobar Islands raises security apprehensions for India, as it brings China closer to the Indian coastline.

#### Parallel with CPEC's Impact on the Indian Coastline

- Similar to the China-Pakistan Economic Corridor (CPEC), which extends into the **Persian Gulf and the Arabian Sea**, CMEC's reach toward the **Bay of Bengal** has implications for India's coastline. These developments reinforce China's String of Pearls strategy, enhancing its maritime influence.

#### Economic and Strategic Significance

- CPEC, CMEC, and other projects collectively symbolize **China's economic and strategic ascent in the Indian subcontinent**. As China strengthens its ties and infrastructure in the region, it reshapes the geopolitical landscape, impacting India's position.

#### Security Threat to India's Neighborhood

- Traditionally considering **Sri Lanka as part of its sphere of influence**, India faces potential security threats in its immediate neighborhood. The strategic implications of China's infrastructure initiatives challenge India's regional security dynamics, requiring a nuanced response.

### **Closing remarks**

- The geopolitical and security implications of CMEC are multifaceted. From providing China with strategic maritime access to mitigating economic challenges and expanding market reach, CMEC is a critical component of China's broader geopolitical and economic strategy in the Asian and global context.

## 2.10 REGIONAL COMPREHENSIVE ECONOMIC PARTNERSHIP

### **Context**

- ASEAN Secretary-General Kao Kim Hourn also said India and ASEAN have been working together across various sectors and advocated expanding such cooperation in new sectors.

### **Details**

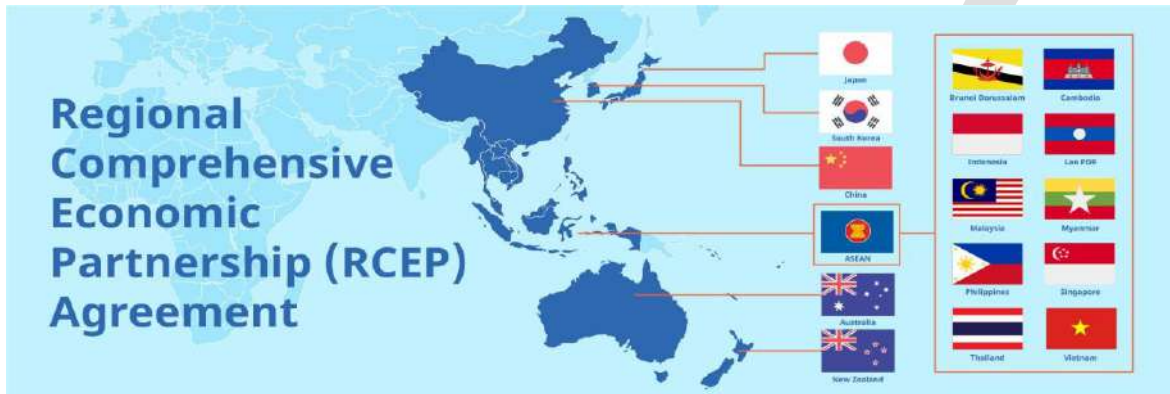
- **Association of Southeast Asian Nations (ASEAN) Secretary-General Dr. Kao Kim Hourn** has said that the 10-member bloc of

the Southeast Asian countries wants India to join the landmark **Regional Comprehensive Economic Partnership (RCEP)** for greater market access as he asserted that all partners stand to gain from the inclusive, open and rule-based trade pact.

- Dr. Kao also said India and ASEAN have been working together across various sectors – **from space to investment, to tourism, to the defense sector, and counter-terrorism,**

- among others – and advocated expanding such cooperation in new sectors.
- **The RCEP is a free trade area (FTA) consisting of 10 ASEAN members (Brunei, Cambodia, Indonesia, Malaysia, Myanmar, Singapore, Thailand, the Philippines, Laos and Vietnam) and five of the bloc's dialogue partners – China, Japan, South Korea, Australia and New Zealand.**

- The landmark agreement was signed in November 2020. Together, these RCEP participating countries account for about 30% of the global GDP and 30% of the world population.
- India had pulled out of the RCEP as, according to officials, joining it would have resulted in fairly negative consequences for the country's economy.



## Background of RCEP

### Conception at ASEAN Summit 2011

- The Regional Comprehensive Economic Partnership (RCEP) had its roots in the discussions held during the 2011 ASEAN Summit in Bali, Indonesia. The idea was conceived as a regional trade agreement aimed at fostering economic cooperation and integration among participating nations.

### Formal Launch at ASEAN Summit 2012

- **The negotiations for RCEP were officially launched at the 2012 ASEAN Summit held in Cambodia.** This marked a significant step towards realizing a comprehensive economic partnership in the Asia-Pacific region, bringing together diverse economies with varying levels of development.

### India's Initial Participation and Later Opt-Out

- **India was initially part of the negotiations, actively engaging** in discussions to shape the terms of the agreement. However, at a later stage, India decided to opt out of RCEP, citing concerns related to trade imbalances and the protection of its domestic industries.

### Virtual Signing at ASEAN Summit 2020

- The culmination of negotiations led to the formal signing of the RCEP on 15th

November 2020. The virtual signing ceremony took place during the ASEAN Summit hosted by Vietnam. Notably, India was not part of the signatory nations at this stage.

### Ratification and Implementation

- **As of January 2022, seven out of the 10 Asian nations involved in the negotiations, along with five non-ASEAN signatories, had deposited their instruments of ratification with the Secretary-General of ASEAN.** For the 10 countries that ratified the treaty, the RCEP came into effect on 1st January 2022, marking the commencement of the trade pact.

## Key facts about RCEP

### Member Countries:

- RCEP comprises 15 member countries, bringing together the diverse economies of the Asia-Pacific region:

### **ASEAN Member Countries**

- Brunei
- Cambodia
- Indonesia
- Laos
- Malaysia



- Myanmar
- Philippines
- Singapore
- Thailand
- Vietnam
- Plus Five Countries:**
- China
- Japan
- South Korea
- Australia
- New Zealand

#### Significance and Scale:

- **The combined population of the 15 member countries represents approximately 30% of the world's total**, with 2.2 billion people. Furthermore, these nations contribute to around 30% of the global GDP, amounting to \$29.7 trillion.

#### Functioning of RCEP:

- **RCEP is poised to eliminate various import tariffs within a 20-year timeframe.** The agreement covers a broad spectrum of sectors, including intellectual property, telecommunications, financial services, e-commerce, and professional services.
- This comprehensive approach aims to create a more integrated and efficient economic environment among the member nations.

#### India's Opt-Out Decision:

- **While initially part of the negotiations, India opted out of the RCEP in November 2019**, citing "significant outstanding issues." The decision highlighted the complexities and challenges faced by countries in aligning diverse economic interests within the framework of the agreement.

#### **India chose not to join the RCEP for several reasons**

##### Protection for Domestic Industry and Agriculture:

- **One of India's primary concerns during the RCEP negotiations** was the lack of adequate safeguards for its domestic industries and agriculture, particularly in dealing with a potential influx of imports, especially from China. The agreement fell short in addressing these protectionist measures sought by India.

#### Unresolved Concerns and China's Role:

- **Throughout the negotiation process**, India had substantial and unresolved concerns, many of which were linked to China's role in the agreement. These concerns were not adequately addressed within the specified timeframe for signing the deal, leading to apprehensions about the potential impact on India's economic landscape.

#### Trade Imbalance with China

- **India already faced a considerable trade deficit with China**, and there were apprehensions that RCEP could exacerbate this imbalance by flooding the Indian market with Chinese goods and products from other member countries. The fear of worsening economic disparities played a crucial role in India's decision to opt-out.

#### Tensions with China and the Galwan Valley Conflict

- **The heightened tensions between India and China, particularly the conflict in the Galwan Valley**, significantly strained diplomatic relations. This recent geopolitical development played a major role in shaping India's decision to distance itself from RCEP, reflecting the broader geopolitical considerations impacting economic decisions.

#### Concerns with Proposed Agreement Provisions

- **India expressed reservations about several provisions within the proposed RCEP agreement.** These concerns included issues related to fair access to markets, rules of origin, dispute resolution mechanisms, and the potential adverse impact on domestic industries. The inability to address these concerns contributed to India's decision to not join the pact.

## 2.11 SHORT ARTICLES

### Philippines Exit from BRI

#### Context

- Philippines becomes latest country to exit China's \$1 trillion 'project of the century'.

#### Details

- The Philippines has delivered a significant blow to China's ambitious Belt and Road Initiative (BRI) by opting to exit the trillion-dollar infrastructure project of President Xi Jinping.
- The announcement followed a recent collision between a Philippines boat and a Chinese coastguard vessel in the South China Sea.
- Furthermore, China's military alleged that a Philippines military ship entered waters near Scarborough Shoal without permission.
- The Philippines' decision comes on the heels of the grand Belt and Road Initiative Summit in Beijing where President Xi welcomed leaders and delegates from over 140 nations to commemorate the project's decade-long journey.



#### About BRI

- The project was officially launched in 2013 in Kazakhstan.
- It was initially called the One Belt One Road Project.
- Often called a new "Silk Route", it consists of maritime corridors and shipping routes to connect China with crucial ports and cities in Asia and Europe.
- Chinese construction companies are given contracts, which are funded by Chinese banks, for the development of ports and trains.

### Treaty of Conventional Armed Forces in Europe

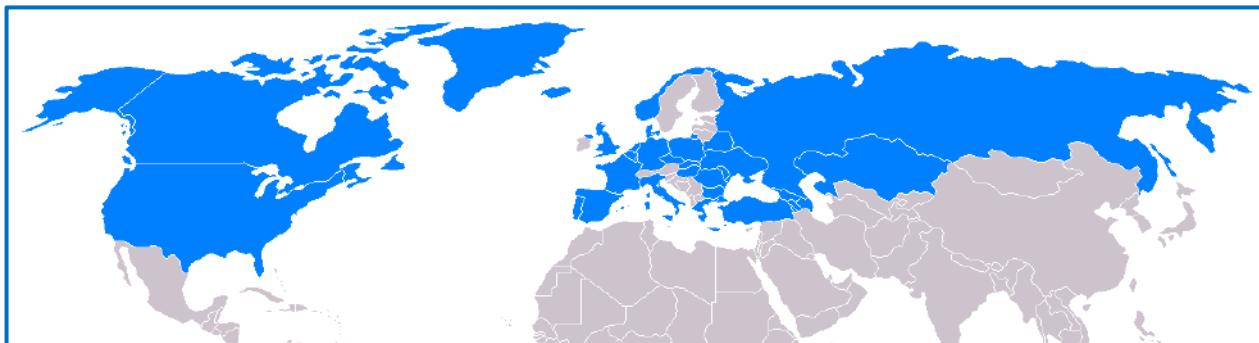
#### Context

- Russia formally withdrew from the CFE (Treaty on Conventional Armed Forces in Europe).

#### Details:

- NATO on Tuesday announced the formal suspension of a key Cold War-era security treaty in response to Russia's pullout from the deal.
- The alliance said its members who signed the treaty are now freezing their participation in the pact.
- Most of NATO's 31 allies have signed the Treaty of Conventional Armed Forces in Europe, which was aimed at preventing Cold War rivals from massing forces at or near mutual borders. It was signed in November 1990, but not fully ratified until two years later.
- NATO said that "a situation whereby Allied State Parties abide by the Treaty, while Russia does not, would be unsustainable".
- Russia's foreign ministry announced earlier Tuesday that Moscow had finalized its withdrawal.

- In response, NATO said, that allies who had signed “intend to suspend the operation of the CFE Treaty for as long as necessary, by their rights under international law. This is a decision fully supported by all NATO Allies”.



### About the Treaty on Conventional Armed Forces in Europe:

- **Negotiation of the Conventional Armed Forces in Europe (CFE) Treaty:** The Conventional Armed Forces in Europe (CFE) Treaty emerged as a **significant diplomatic achievement during the waning years of the Cold War**. Negotiations took place to address the evolving security landscape in Europe following the end of the Cold War tensions.
- **Timing and Context:** Negotiations for the CFE Treaty occurred during the **final years of the Cold War**. The treaty concluded in 1990, reflected a diplomatic effort to adapt to the changing geopolitical dynamics, especially in the aftermath of the fall of the Berlin Wall in 1989.
- **Treaty Signing:** The CFE Treaty was signed in **Paris on November 19, 1990, involving 22 countries**. **These nations were divided into two distinct groups:** the then-16 NATO members and the then-six Warsaw Treaty states.
- **NATO Members:** United States, Canada, Denmark, France, Germany, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Turkey, United Kingdom, and Belgium.
- **Warsaw Treaty States:** Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and the Soviet Union.
- **Ratification and Entry into Force:** The treaty officially entered into force on November 9, 1992, marking the culmination of the ratification process undertaken by the signatory nations.
- **Aim of the CFE Treaty:** The **primary objective of the CFE Treaty** was to establish comprehensive limits on key categories of conventional military equipment in Europe. The treaty aimed to ensure a balanced and stabilized military presence, particularly between NATO and the former Warsaw Pact countries.
- **Mandate and Provisions:** The CFE Treaty included provisions mandating the destruction of excess weaponry to achieve the agreed-upon limits. It **proposed equal limits for both groups of states-parties**, namely **the North Atlantic Treaty Organization (NATO) and the Warsaw Pact**. This was crucial for maintaining military balance and preventing an arms race in the region.

## Voice of Global South Summit

### Context

- The second Voice of Global South summit took place in virtual mode.

### Details

- The inaugural summit, held earlier this year, set a precedent for comprehensive dialogue among 125 countries from the Global South.
- Focused on '**Unity of Voice, Unity of Purpose**', it successfully influenced the agenda of India's G20



Presidency, indicating the potential impact of the upcoming summit.

### About Second Voice of Global Summit

- **Global Summit Theme:** *"Together, for Everyone's Growth, with Everyone's Trust"*. The overarching theme emphasizes the importance of collective effort and trust in fostering global development.
- **Comprehensive Agenda:** The summit's agenda spans various critical areas, including Foreign Affairs, **Education, Finance, Environment, Energy, Health, and Commerce**, reflecting a holistic approach to addressing global challenges.
- **Inclusive Focus:** The session is dedicated to promoting inclusivity and collaboration, recognizing the significance of joint efforts in achieving sustainable global growth.
- **Second Voice of Global South Summit:** This edition of the summit will focus on *"sharing with countries of the Global South the key outcomes achieved in various G20 meetings"* during India's presidency of the G20, demonstrating a commitment to disseminating and implementing successful global strategies.

## Asia-Pacific Economic Cooperation

### Context

- S. Treasury Secretary Janet Yellen shakes hands with Chinese Vice Premier He Lifeng during a bilateral meeting ahead of a U.S.-hosted APEC (Asia-Pacific Economic Cooperation) Summit.

### About Asia-Pacific Economic Cooperation:

- **About APEC:** APEC, established in 1989, is a **regional economic forum comprising 21 member economies** in the Asia-Pacific region. The forum aims to leverage the growing interdependence of these economies to promote free trade.
- **Aim of APEC:** The **primary goal of APEC** is to create greater prosperity for the people of the region by fostering balanced, inclusive, sustainable, innovative, and secure growth. This is achieved through the acceleration of regional economic integration.
- **Formation and Background:** APEC originated in 1989 as a response to the increasing interdependence of Asia-Pacific economies and the emergence of regional trade blocs globally.
  - **Inspired by the success of ASEAN's** post-ministerial conferences, APEC sought to establish new markets for agricultural products and raw materials.
- **Membership:** APEC's headquarters are located in Singapore, and it is recognized as one of the highest-level and oldest forums in the Asia-Pacific region. The forum comprises 21 member economies, including major players like the United States, China, Japan, and others.
- **APEC's Objectives:** APEC was formed with the following objectives:
  - Trade and investment liberalization and facilitation across borders.
  - Reduction of cross-border trade costs to assist businesses.
  - Economic and technical cooperation among member economies.
  - Exchange of best practices and information on trade and investment.
  - Simplification of regulatory and administrative processes.
  - Enhancement of institutional capacity to implement and benefit from trade and investment reform.
- **Member Economies:** The **21 member economies of APEC include Australia, Canada, China, Japan, the United States**, and others, collectively working towards regional economic cooperation and development.



## Mutual Legal Assistance Treaty

### Context

- India has requested evidence from the US authorities under the Mutual Legal Assistance Treaty (MLAT) in connection with an attack on the Indian consulate in San Francisco in July this year.



### Details:

- New Delhi has sent a request amid an ongoing probe into the incident by the National Investigation Agency (NIA).
- A total of 45 people were identified in connection with the attack through crowd-sourcing, the sources added.
- Notably, MLAT is an agreement between two or more countries to gather and exchange information and evidence in criminal matters.
- Earlier, in July, a group of Khalistan extremists tried to set the Indian consulate in San Francisco on fire.

### About the Mutual Legal Assistance Treaty:

- Mutual Legal Assistance Treaties (MLATs) serve as a collaborative mechanism among nations to facilitate formal assistance in preventing, suppressing, investigating, and prosecuting criminal activities.
  - This framework ensures that **criminals cannot evade justice or impede legal processes** due to jurisdictional constraints.
- Central Authority in India:** The **Ministry of Home Affairs** serves as the central authority in India for managing requests related to mutual legal assistance in criminal matters. This vital role involves coordinating efforts to exchange information and evidence across borders.
- Legal Basis in India:** Section 105 of the **Criminal Procedure Code (CrPC)** outlines the reciprocal arrangements established by the Central Government with foreign governments.
  - These arrangements encompass the service of summons, warrants, and judicial processes, enabling streamlined and effective legal cooperation.
- Global Reach:** India, recognizing the significance of **international collaboration**, has entered into MLATs with 45 countries. These treaties enhance the country's ability to address transnational crimes and uphold the principles of justice and the rule of law on a global scale.

## ASEAN Defence Ministers Meeting Plus

### Context

- Recently, the Defence Minister of India participated in the 10th Association of Southeast Asian Nations (ASEAN) Defence Ministers' Meeting-Plus (ADMM-Plus) in Jakarta, Indonesia.

### Key Highlights of the Indian Address in the ADMM-Plus Meeting:

#### ASEAN Centrality:

- India's Recognition:** India acknowledges and emphasizes the pivotal role of ASEAN, affirming its centrality in fostering regional dialogue and consensus.

#### Commitment to International Laws:

- Legal Adherence:** India reiterates its commitment to upholding international laws, particularly the **United Nations Convention on the Law of the Sea (UNCLOS) 1982**. It underscores support for freedom of navigation, over flight, and lawful commerce in international waters.

#### Regional Security Initiatives:

- **Development-Oriented Security:** India advocates for security initiatives within **ADMM-Plus** that are consultative and development-oriented. The goal is to achieve consensus among stakeholders and enhance maritime security in the region.

**Dialogue and Diplomacy:**

- **Emphasis on Dialogue:** India highlights the importance of **dialogue and diplomacy for long-term peace and global stability**. It emphasizes moving away from a confrontational mindset, emphasizing that the current era does not favor war.

**Collaborative Initiatives:**

- **Joint Initiatives:** India appreciates the participation of ASEAN Member States in joint initiatives such as the Initiative for Women in UN Peacekeeping Operations, Initiative for Marine Plastic Pollution Response, ASEAN-India Maritime Exercise, and the Expert Working Group (EWG) on Humanitarian Assistance & Disaster Relief (HADR).

**Counter-Terrorism Efforts:**

- **India's Proposal:** India proposes to co-chair the EWG on Counter-Terrorism, addressing the serious threat of terrorism in the ASEAN region. This concern gained endorsement from ADMM-Plus.

**Current Co-Chair Responsibilities:**

- **India's Role:** In the present cycle from 2021-2024, India is actively co-chairing the EWG on HADR alongside Indonesia, demonstrating its commitment to collaborative efforts in addressing humanitarian assistance and disaster relief.



## India-Lithuania Maritime Relations

**Context**

- Recently, the Indian Minister of State for Ports, Shipping, and Waterways and Vice Minister in the Ministry of Foreign Affairs of the Republic of Lithuania, convened in New Delhi.

**Details**

- Minister of State for Ports, Shipping, and Waterways, Shri Shantanu Thakur, and the Vice Minister in the Ministry of Foreign Affairs of the Republic of Lithuania, Mr. Ejdičius Meilunas met in New Delhi today.
- The meeting focused on strengthening the maritime bilateral relations between India and Lithuania. Both the Ministers expressed their appreciation for the strong and friendly relations between India and Lithuania.



**About India-Lithuania Relations:**

- **Historical Ties and Linguistic Similarities:** Lithuania and India share historical ties embedded in linguistic similarities. The commonalities between the Lithuanian and Sanskrit languages hint at ancient

connections. Pre-Christian Lithuania's worship of nature and the trinity of gods draws intriguing parallels with aspects of Hindu spiritual culture.

- **Intellectual Exchange and Philosophical Connections:** In the 19th century, philosopher Vydnas bridged the intellectual realms of Lithuania and India. Drawing parallels between Lithuanian and Hindu spiritual culture, he created a philosophical system inspired by Vedanta, showcasing the depth of intellectual exchange between the two cultures.
- **Exploration of Sanskrit and Indian Culture:** In the 1930s and 1940s, Lithuanian travelers like Antanas Poska and Matas Salcius delved into Sanskrit and Indian culture, fostering a direct connection between the two nations. This exploration laid the foundation for deeper cultural understanding.
- **Academic Ties and Sanskrit Curriculum:** Sanskrit's inclusion in Vilnius University's academic curriculum in the 1970s exemplifies the commitment to fostering academic ties. This initiative facilitated a structured exploration of ancient linguistic and cultural connections, creating an enduring bridge between India and Lithuania.
- **Political Relations and Diplomatic Recognition:** Political relations between India and Lithuania began with the acknowledgment of Lithuania's independence from the USSR in 1991. Diplomatic relations were formalized in 1992, setting the stage for a robust diplomatic engagement.

## Nordic-Baltic Eight Countries

### Context

- Recently, the 2nd CII (Confederation of Indian Industries) India Nordic-Baltic Business Conclave 2023 was held in New Delhi.

### About Nordic-Baltic (NB) 8:

- **Regional Cooperation Format:** The NB8, or Nordic-Baltic Eight, serves as a regional cooperation format that unites the Nordic countries and the Baltic states. This collaboration aims to leverage historical, cultural, and geographical ties for mutual benefit and shared progress.
- **Composition of NB8:** The NB8 comprises five Nordic countries: Denmark, Finland, Iceland, Norway, and Sweden, alongside three Baltic states: Estonia, Latvia, and Lithuania. This amalgamation of nations forms a cohesive group, emphasizing regional unity and collaboration.
- **Shared Ties and Collaborative Fields:** Historical, cultural, and geographical ties form the bedrock of cooperation within the NB8. The member nations collaborate across various fields, including politics, economics, trade, security, and culture, fostering a comprehensive and multifaceted approach to regional development.
- **Nordic Countries: Similarities and Governance:** The Nordic countries, situated in Northern Europe, share commonalities in governance, social systems, and values. These similarities create a foundation for seamless collaboration and understanding within the NB8 framework.
- **Baltic States: Unique Backgrounds and Geopolitical Positioning:** In contrast, the Baltic states, located in Northeastern Europe, bring their unique historical backgrounds and geopolitical positioning to the NB8.



Estonia, Latvia, and Lithuania contribute diverse perspectives that enrich the collective identity of the group.

## 2.12 SNIPPETS



### Indo-Pacific Maritime Domain Awareness (IPMDA) initiative

- The Indo-Pacific Maritime Domain Awareness (IPMDA) initiative was announced in 2022 by the Quad grouping.
- It is a testament to the commitment to a free, open, inclusive, and rules-based Indo-Pacific.
- The IPMDA was announced by the Quad grouping, comprising India, Australia, Japan, and the U.S., at the Tokyo summit in early 2022.
- IPMDA seeks to establish a comprehensive system for monitoring and securing maritime activities in the Indo-Pacific.

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## 2.13 1 MAINS & 5 MCQs

**Q1. In the wake of these developments and shifting geopolitical power positions, the frameworks, forums and institutions of conventional South-South Cooperation are becoming less and less relevant. Do you agree?**

### Introduction

- The dynamics of geopolitical power are indeed evolving, and traditional frameworks, forums, and institutions of conventional South-South Cooperation (SSC) may be subject to changes. Whether they become less relevant or not depends on several factors, and the assessment can vary based on perspectives.

### Body

Agree	Disagree
<ol style="list-style-type: none"> <li><b>Emergence of New Alliances:</b> The shifting geopolitical landscape has led to the formation of new alliances and partnerships. Countries are exploring collaborations beyond traditional SSC frameworks, engaging in more dynamic and issue-specific partnerships based on current geopolitical realities.</li> <li><b>Economic Shifts:</b> Economic changes, such as the rise of new economic powers, can influence the relevance of existing SSC frameworks. As emerging economies grow and seek diverse collaborations, traditional institutions may need to adapt to accommodate these shifts.</li> <li><b>Global Challenges:</b> Contemporary global challenges, including climate change, health crises, and technology advancements, may necessitate novel and flexible cooperation models. Existing frameworks might need adjustments to effectively address these challenges, rendering them potentially less relevant if they fail to adapt.</li> </ol>	<ol style="list-style-type: none"> <li><b>Institutional Resilience:</b> Established SSC frameworks and institutions have demonstrated resilience over time. These structures often possess the flexibility to adapt to changing circumstances and continue serving as platforms for collaboration among developing countries.</li> <li><b>Historical Ties and Solidarity:</b> Historical ties and a sense of solidarity among countries in the Global South may sustain the relevance of conventional SSC frameworks. Shared historical experiences and common developmental goals can contribute to the durability of existing cooperative mechanisms.</li> <li><b>Incremental Adaptation:</b> Rather than becoming obsolete, traditional SSC frameworks may undergo incremental adaptations to incorporate new geopolitical realities. These institutions could evolve to accommodate the changing dynamics while retaining their foundational principles of mutual assistance and cooperation.</li> </ol>



## Conclusion

- Whether the frameworks, forums, and institutions of conventional South-South Cooperation become less relevant depends on how effectively they adapt to the evolving geopolitical landscape. While some may argue for the emergence of new structures, others emphasize the historical resilience and adaptability of existing cooperative mechanisms. The future dynamics of SSC will likely involve a combination of traditional and novel approaches to address the complex challenges faced by developing nations.

### Q2. Which of the following routes connect India and Bangladesh?

- Benapole-Petrapole
- Gede-Darshana
- Singhabad-Rohanpur
- Radhikapur-Birol

Choose the correct code.

- 1 only
- 2 and 4 only
- 1, 3 and 4 only
- All

### Q3. Consider the following statements with reference to the Future Leaders Scholarship Program.

- Treaty on Conventional Armed Forces in Europe was negotiated and concluded during the last years of World War.
- It mandated the destruction of excess weaponry.
- The States Parties signed the Tashkent Agreement on the Principles and Procedures for the Implementation of the Treaty on Conventional Armed Forces in Europe.

How many of the above statements are incorrect?

- Only 1
- Only 2
- All 3
- None

### Q4. Consider the following statements:

- Asia-Pacific Economic Cooperation is an inter-governmental forum for 45 member economies in the Pacific Rim.
- Headquartered in Singapore, APEC is recognized as one of the highest-level multilateral blocs and oldest forums in the Asia-Pacific region.

How many of the above-mentioned statements are correct?

- Only 1

- Only 2
- All
- None

### Q5. Consider the following statements regarding Lithuania:

- Lithuania is the northernmost Baltic state.
- Lithuanian is a Slavic language.

Select the correct statement using the codes below:

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

### Q6. With reference to the Regional Comprehensive Economic Partnership (RCEP) consider the following statements:

- RCEP is the largest free trade agreement in the world.
- India decided to opt out of RCEP because it was concerned that the RCEP would open the "floodgates for Chinese goods" to enter India, further raise India's trade deficits, and weaken its anti-dumping duties that it has imposed on Chinese items from the chemicals, iron, and steel industries.
- India's withdrawal from RCEP means that it is losing its status as a major player in the Asia-Pacific region.

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

ANSWERS: 2) D, 3) A, 4) D, 5) A, 6) A

## 3. ECONOMY

### 3.1 IMPACT OF EXPORT RESTRICTION OF RICE

#### Context

- In July 2023, India banned the export of non-basmati white rice due to concerns about depleting public stock, elevated cereal prices, and potential issues with the monsoon.

#### Details

- The First Advance Estimates for major Kharif crops in 2023-24 showed a **3.7% decrease in rice production compared to the previous year**.
- Following the export ban announced by India, there was an immediate increase in rice prices globally. While prices have come down in subsequent months, they remain higher than the pre-ban period.
- Despite the export ban, there has been no relief from the increase in the prices of rice in the domestic market.
- **India is the largest exporter of rice globally, accounting for about 40% of total rice exports in the world in 2022.** Rice exports from India are categorized into basmati and non-basmati rice.
  - **Basmati Rice:** In the financial year 2022-23, India exported 45.61 lakh metric tonnes of basmati rice to 149 countries. Top destinations included Iran, Saudi Arabia, Iraq, UAE, and Yemen.
  - **Non-Basmati Rice:** In 2022-23, India exported 177.91 lakh metric tonnes of non-basmati rice, including parboiled rice, non-basmati white rice, and broken rice.
- After the ban on non-basmati white rice export, the quantity shipped out declined, and the number of importing countries decreased significantly.
- As of October 1, 2023, the Food Corporation of India reports a stock of 221.87 lakh metric tonnes of rice in the Central Pool, with an additional stock of 138.36 lakh metric tonnes of unmilled paddy.

#### Impact of export restrictions on rice

##### Domestic Prices and Availability

- Export restrictions, such as quotas or bans, are often implemented **to ensure sufficient domestic supply and stabilize prices**. This can lead to increased availability and lower prices for rice within the exporting country.
- Importing countries heavily dependent on rice imports may experience higher prices and potential shortages as a result of reduced supply from the exporting country.

##### Global Prices

- **Export restrictions by a major rice-exporting country can contribute to global price volatility**, affecting international rice prices. If a significant rice-exporting nation implements restrictions, it can disrupt the global supply-demand balance and lead to higher prices in the international market.

##### Food Security

- Export restrictions may be implemented to safeguard domestic food security by ensuring an adequate supply of rice for the country's population. This is particularly important if rice is a staple food.
- **Countries relying heavily on rice imports may face challenges in maintaining food security if a major exporting country imposes restrictions.** This could lead to increased vulnerability to price fluctuations and potential food shortages.

##### Trade Relations

- Export restrictions can strain diplomatic and trade relations between exporting and importing countries. Importing nations may view such measures as protectionist and respond with their trade restrictions.

##### Rural Livelihoods

- In exporting countries, particularly those where rice farming is a significant economic activity, export restrictions may protect the livelihoods of local farmers by ensuring a

stable and sufficient domestic market. However, it could also hinder the income

potential of farmers who rely on export markets.

### Market Dynamics

- **Export restrictions can lead to shifts in global rice trade dynamics.** Other exporting countries may increase their exports to fill the gap left by the restricting nation. This could potentially benefit other exporting nations but may also contribute to market uncertainty.

### Investment and Production

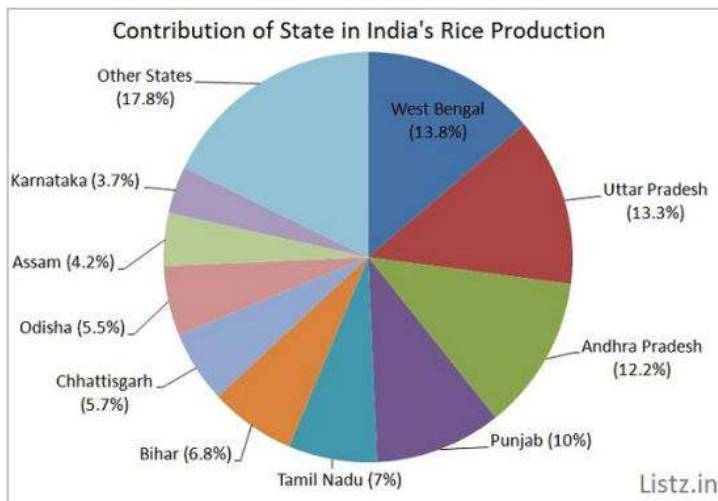
- **Export restrictions may influence investment decisions and production levels in the exporting country.** If farmers and businesses anticipate a more stable and profitable domestic market due to restrictions, they may focus on meeting domestic demand rather than producing for export.

### Long-Term Impact

- Continued or frequent use of export restrictions can undermine confidence in the reliability of the global rice market. It may also encourage importing countries to explore alternative sources or invest in increasing domestic production to reduce dependence on international markets.

### Conclusion

- The impact of export restrictions on rice is multifaceted and depends on various factors, including the magnitude of the exporting country's role in the global rice market, the importance of rice in the domestic economy, and the resilience of importing countries to market disruptions.



### Rice

- Rice is a staple food for a large population, especially in South India and northeastern regions.
- **Predominantly a kharif crop, cultivated during the rainy season.** Requires specific climatic conditions: High temperatures (above 25°C), High humidity levels, **Annual rainfall exceeding 100 cm.**
- **Approximately one-fourth of India's total cropped area is dedicated to rice cultivation.**
- Southern states (Tamil Nadu, Andhra Pradesh, Karnataka, Kerala) and West Bengal support multiple rice crops in a single agricultural year.
- West Bengal cultivates three distinct crops: **Aus Rice, Aman Rice, and Boro Rice.**
- States like Punjab, Tamil Nadu, Haryana, Andhra Pradesh, Telangana, West Bengal, and Kerala are known for high rice yields. Improved cultivation techniques and agricultural technology contribute to high yields.



## 3.2 WORKER PRODUCTIVITY AND ECONOMIC GROWTH

### Context

- India ranks seventh globally in terms of average workweeks, with employed individuals working an average of 47.7 hours per week, according to data from the International Labour Organisation (ILO).

### Worker Productivity

- Worker productivity measures the **efficiency with which workers convert inputs (such as labour, capital, and technology) into output (goods and services)**. It is often quantified as output per hour worked.

### Factors Influencing Productivity

- **Technology:** The integration of advanced technologies, such as automation and artificial intelligence, can significantly enhance worker productivity. Automation of routine tasks allows workers to focus on more complex and creative aspects of their jobs.
- **Education and Training:** A well-educated and trained workforce is essential for higher productivity. Education provides a foundational knowledge base, while ongoing training ensures that workers stay abreast of industry developments and acquire new skills.
- **Infrastructure:** Adequate infrastructure, including transportation, communication, and energy systems, contributes to productivity by reducing the time and resources required to conduct business activities.
- **Management Practices:** Effective management practices, including clear communication, goal-setting, and performance incentives, play a crucial role in boosting worker morale and productivity.

### Economic Growth

- Economic growth is the sustained increase in the value of goods and services produced by an economy over time. It is commonly measured by the growth in Gross Domestic Product (GDP).

### Impacts of Worker Productivity on Economic Growth

- **Output Increase:** When workers become more productive, they can produce more goods and services. This increased output contributes to economic growth without a corresponding increase in the use of inputs.
- **Competitiveness:** Economies with highly productive workforces are often more competitive in the global market. This competitiveness attracts foreign investment, fosters international trade, and contributes to economic expansion.
- **Income Growth:** Higher productivity can lead to increased wages for workers. As workers earn more, they contribute to increased consumer spending, which is a significant driver of economic growth.

### Challenges and Considerations

- While productivity growth is beneficial, it's important to address issues of income inequality. Some segments of the population may benefit more than others, leading to disparities in wealth and opportunities.
- The adoption of new technologies can lead to the displacement of certain jobs. **Efforts must be made to retrain and upskill workers to adapt to changing labour market demands.**

### Policy Implications

- **Governments and businesses can invest in education and training programs** to enhance the skills of the workforce, ensuring they are equipped to contribute to higher productivity.
- Investments in infrastructure projects, such as improving transportation and communication networks, can remove bottlenecks and improve the overall efficiency of the economy.
- **Policies that encourage innovation, research and development**, and the adoption of advanced technologies can stimulate productivity growth.

## Overall Connection

- The relationship between worker productivity and economic growth is symbiotic. Higher worker productivity contributes to economic growth by increasing output and competitiveness. In turn, economic growth can create an environment conducive to further improvements in productivity through investments in education, technology, and infrastructure.

## Conclusion

- The productivity of the workforce is a critical factor influencing the economic health of a nation. Policies that promote productivity growth, coupled with measures to address challenges like inequality, can contribute to sustainable and inclusive economic development.

### 3.3 NATIONAL-LEVEL MONITORS TO OVERSEE LIVESTOCK SCHEMES

#### Context

- The Union Government, through the Department of Animal Husbandry and Dairying, is deploying National Level Monitors (NLMs) to supervise the implementation of key livestock schemes, including the National Livestock Mission and Rashtriya Gokul Mission.

#### Significance of the Livestock Sector

- The livestock sector's contribution to agriculture output has increased significantly, from 24.32% in 2014-2015 to 30.87% in 2020-21.
- The Livestock sector has been growing at a compounded annual growth rate of 7.93% from 2014-15 to 2020-21.

#### National Level Monitors (NLM)

- The Centre has decided to deploy **National Level Monitors (NLM)** to oversee the implementation of its livestock schemes including the National Livestock Mission and Rashtriya Gokul Mission.
  - The livestock schemes aim to enhance the productivity, profitability, and sustainability of the animal husbandry sector in India.
  - The National Livestock Mission covers various sub-missions such as fodder and feed development, conservation of livestock breeds, risk management, and infrastructure development.
- This is a significant step taken by the government to ensure that the livestock

sector, which contributes about 25% of the agricultural GDP, receives adequate attention and support.

- The NLMs will be responsible for monitoring the progress, quality, and impact of the livestock schemes in various states and districts. They will also provide feedback and suggestions to the Centre and the state governments for improving the effectiveness and efficiency of the schemes.
- The Centre has **appointed 22 NLMs from various fields such as animal husbandry, veterinary science, agriculture, rural development, social work, etc.** They have been assigned different states and regions based on their expertise and experience. The NLMs will visit the states and districts at least once in six months and conduct field visits, meetings, workshops, etc. to monitor the livestock schemes.

#### Objectives

- The NLMs will conduct two types of monitoring: regular and special.

#### Objectives of Regular Monitoring

- Ensure that programs are implemented according to the guidelines prescribed by the Ministry.
- Verify if the prescribed implementation processes are being followed.
- Gather villagers' views on the programs and consider their suggestions for improvement.
- Assess whether the selection of beneficiaries under a program has been transparent, unbiased, and fair.

### Objectives of Special Monitoring

- Investigate serious complaints, such as misutilization of funds or irregularities.
- NLMs may be deputed to verify facts or conduct a preliminary inquiry with the approval of the Secretary in case of serious complaints.

### Incentive Distribution and Data Upload Monitoring

- Ensure that incentives to paravets, technicians, and farmers are distributed as envisaged under the scheme.
- Check whether data on vaccination, disease monitoring, and artificial insemination are uploaded on the National Digital Livestock Mission on a real-time basis.

### Selection and Composition of NLMs

- NLMs will be third-party independent monitors, consisting of individuals and institutions deployed by the government.
- Individual NLMs will be selected from retired Civil/Defence Services Officers and academia.

### Rationale for Monitoring

- The focus on monitoring is crucial given the rising contribution of the livestock sector to the economy.
- The NLMs are being deployed to ensure unbiased and objective monitoring of the implementation of schemes in the Animal Husbandry and



Dairying sector.

### Significance

- The deployment of NLMs will help in ensuring that the livestock schemes are implemented in a timely and transparent manner.
- It will help in identifying the best practices, innovations, and challenges faced by the beneficiaries and implementing agencies.
- It will **submit periodic reports to the Centre and the state governments** on the status and outcomes of the livestock schemes.
- It will **interact with the media and the public** to create awareness and generate feedback on the livestock sector.
- It will boost the morale and confidence of the livestock farmers and enhance their income and livelihood opportunities.
- It will **act as a bridge between the Centre and the state governments** and facilitate better coordination and convergence of the livestock schemes with other related programmes.

### Conclusion

- The deployment of NLMs and the detailed monitoring framework reflects the government's commitment to ensuring the efficient and transparent implementation of livestock schemes, recognizing the growing significance of the livestock sector in the country's economy.

## 3.4 THE ECONOMIC CONSEQUENCES OF AIR POLLUTION

### Context

- Air pollution negatively affects economic productivity and growth by reducing worker output due to health issues, leading to increased absenteeism and decreased overall labour efficiency.

### Economic Consequences of Air Pollution

- Air pollution is a serious threat to the health and well-being of millions of Indians. According to a new study, **air pollution in India resulted in 1.67 million deaths in 2019, which was 18% of the total deaths in the country.** This is the largest pollution-related death toll in any country in the world.
  - Air pollution also has a significant impact on the economy of India. The same study estimated that air pollution accounted for \$36.8 billion (US) in economic losses in 2019, which was 1.4% of the GDP.
- The economic losses due to air pollution are mainly driven by lower productivity, higher healthcare costs, lower consumer spending and lower investment.

### Reduced Worker Output

- Air pollution can cause various health issues among the workforce, such as respiratory problems, cardiovascular diseases, and other related illnesses.
- The health issues lead to a decrease in productivity as employees may take sick leave or work less efficiently when affected by air pollution.
- The **overall result is an increase in absenteeism**, as workers may need more time off for health-related reasons.

### Lower Consumer Footfall in Services

- High levels of air pollution can discourage consumers from visiting areas with high pollution levels, impacting businesses in those areas.

### Hampered Asset Productivity

- The productivity of assets, such as solar panels, can be hampered by air pollution. For instance, the decrease in the productivity of rooftop solar panels on high-pollution days impacts the energy output of the solar company.

### Increased Health Expenses

- The health impact of air pollution leads to **increased medical expenses, including costs for treatments, medications, and hospital visits.**
- Lost work hours and decreased productivity contribute to indirect costs, further burdening individuals and the economy.

### Welfare Losses and Premature Mortality

- **Poor air quality contributes to overall welfare losses**, affecting the quality of life for individuals in the affected areas.
- Premature mortality reduces the potential workforce, impacting economic productivity, and can increase the dependency ratio as there are more dependents relative to the working population.

### Impact on GDP Growth Rates

- The Reserve Bank of India's Department of Economic and Policy Research indicates that climate change issues, including air pollution, could result in up to 4.5% of GDP being at risk by 2030 due to lost labour hours.

### Sectoral Impact

- **More than 50% of India's GDP comes from the services sector, making it susceptible to reduced productivity.** Even indoor jobs, such as call centre work, can be affected by air pollution, impacting the overall sector.

### Economic Costs for Businesses

- The report from Dalberg Advisors estimates that air pollution costs Indian businesses approximately \$95 billion annually, constituting around 3% of India's GDP. These costs include factors like healthcare expenses for employees and decreased productivity.

### Way forward to reduce the economic consequences of air pollution

#### Strict Enforcement and Penalties

- **Strengthen the enforcement of existing environmental regulations** and introduce stringent penalties for non-compliance. This can act as a deterrent for industries and individuals contributing to air pollution.
- **Use technology such as remote sensing and satellite imagery for real-time monitoring** of industrial emissions and take swift action against violators.



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### Investment in Green Infrastructure

- **Increase investment in green infrastructure projects**, such as urban green spaces, sustainable urban planning, and eco-friendly transportation systems. Green infrastructure can act as a natural filter for pollutants and contribute to overall air quality improvement.
- **Implement green building standards** and encourage the construction of energy-efficient and environmentally friendly structures.

### Research and Innovation

- Allocate funds for research and development of innovative technologies to **reduce emissions from major sources of pollution**. Encourage collaboration between government, industries, and research institutions to develop and implement cutting-edge solutions.
- **Support startups and initiatives working on air pollution control** technologies by providing financial incentives and a conducive regulatory environment.

### Inclusive Governance and Community Involvement

- **Foster inclusive governance by actively involving local communities**, NGOs, and citizen groups in decision-making processes related to air quality management.
- **Establish local air quality monitoring stations and involve community members** in collecting data. This not only increases transparency but also empowers citizens to actively contribute to pollution control efforts.

### Integration with Sustainable Development Goals (SDGs)

- Align air pollution reduction strategies with the Sustainable Development Goals (SDGs), particularly those related to health, clean energy, sustainable cities, and climate action. This integration can help in **securing**

**additional funding and support from international organizations.**

- Develop and promote integrated policies that **address multiple environmental issues simultaneously**, promoting a holistic and sustainable approach to development.

### Capacity Building

- **Invest in training programs and capacity building for regulators**, enforcement agencies, and industries to ensure effective implementation of pollution control measures.
- Provide technical assistance to industries to adopt cleaner technologies and practices, especially small and medium-sized enterprises that may face resource constraints.

### Monitoring and Evaluation

- Implement a robust monitoring and evaluation framework for the National Clean Air Programme, ensuring regular assessment of progress against set targets. This can help identify challenges and areas that require adjustments in strategy.

### International Collaboration

- Actively participate in global initiatives and agreements related to air quality, such as the Paris Agreement. Collaborate with international organizations and neighbouring countries to address cross-border pollution issues effectively.



### **Conclusion**

- The urgency to address air pollution is emphasized, particularly in countries like India where economic hubs face recurrent annual cycles of high pollution. The impact on GDP growth and per capita income levels underscores the need for effective policy responses to mitigate the economic consequences of air pollution.



### 3.5 DAM SAFETY IN INDIA

#### Context

- Dispute between the State irrigation officials and the National Dam Safety Authority (NDSA) regarding the Medigadda barrage, a part of the Kaleshwaram project in Telangana.

#### Key Highlights

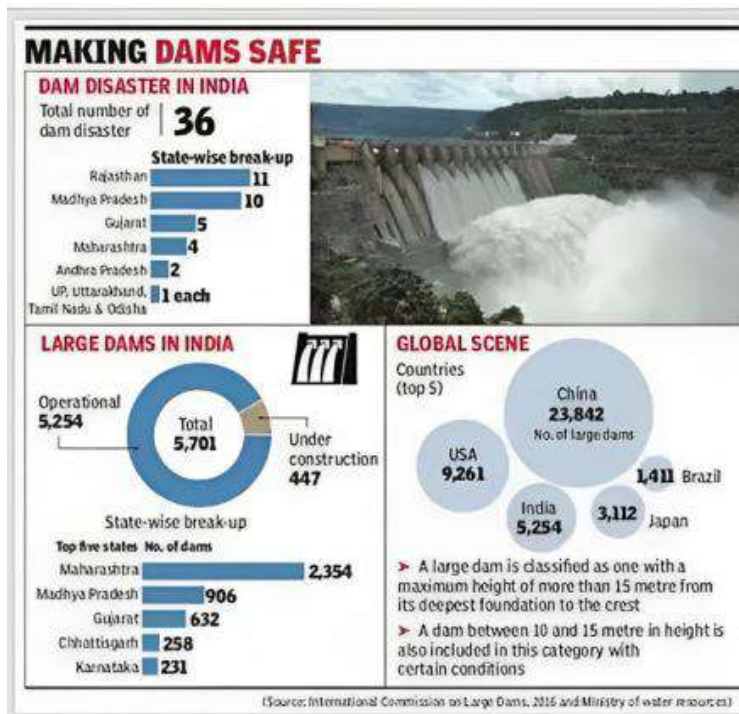
- The Telangana State irrigation officials feel that the comments and suggestions from NDSA on the Medigadda barrage are either unsubstantiated or made without a full appreciation of the facts.
- The State assured that all provisions of the Dam Safety Act 2021 are being scrupulously complied with.

#### Dam Safety in India

- India's extensive dam network is essential for water security, irrigation, power, and flood control. However, the same dams pose substantial risks to downstream communities and the environment, necessitating a delicate balance in managing their benefits and potential hazards.
- Dam safety in India is a joint responsibility involving owners, operators, regulators, and policymakers.** Robust governance, stringent monitoring, and community engagement are imperative to mitigate risks, safeguard lives, and sustainably manage the vital functions of these dams.

#### Current Status of Dam Safety in India

- According to the Central Water Commission (CWC), India has 5,745 dams (5,334 are completed and 411 are under construction) as of January 2021. **India ranks third in the world in terms of building large dams, after China and the United States.**
- The oldest dam in India is the Kallanai Dam in Tamil Nadu**, which is about 2,000 years old. The highest dam in India is the Tehri Dam in Uttarakhand, which is 260.5 metres high. The longest dam in India is the Hirakud Dam in Odisha, which is 25.8 kilometres long.
- Many of the dams are ageing and deteriorating due to various factors** such as inadequate design, poor construction quality, lack of maintenance, sedimentation, seismic activity, climate change, etc.
- According to a CWC report in 2019, about 80% of India's large dams are more than 25 years old and about 15% are more than 50 years old.** Moreover, many dams do not have adequate instrumentation and monitoring systems to detect and diagnose any distress or damage. As a result, these dams pose a serious threat to the safety and security of the people and property downstream in case of any failure or breach.
- According to the National Disaster Management Authority (NDMA), dam failures can cause catastrophic consequences such as loss of lives, displacement of population, damage to infrastructure and property, disruption of economic activities, environmental degradation, etc.



## Dam Safety Act 2021

- To address the challenges of dam safety, the Union Government has enacted the Dam Safety Act 2021. It provides a comprehensive framework for proper surveillance, inspection, operation and maintenance of all the large dams in the country. It also establishes an institutional mechanism for ensuring uniform safety standards and resolving inter-state disputes.

### The institutional mechanism under the Act consists of:

- **National Committee on Dam Safety (NCDS):** It is a high-level committee chaired by the Chairperson of the Central Water Commission. It is responsible for evolving dam safety policies and recommending essential regulations.
- **National Dam Safety Authority (NDSA):** It is a regulatory body headed by an officer, not below the rank of Additional Secretary to the Government of India. It is responsible for implementing policies of the NCDS, providing technical assistance to State Dam Safety Organisations (SDSOs) and resolving inter-state disputes.
- **State Committee on Dam Safety (SCDS):** It is a committee chaired by the Chief Engineer in charge of dams in the state or by an officer of equivalent rank. It is responsible for overseeing dam safety measures within the state and ensuring compliance with the regulations issued by NCDS.
- **State Dam Safety Organisation (SDSO):** It is an organisation headed by an officer, not below the rank of Superintending Engineer. It is responsible for enforcing dam safety standards, issuing directions to dam owners regarding safety protocols and remedial actions, and conducting regular inspections and audits.

### **The main features of the Act are:**

#### International Collaboration

- **Engaging with international organizations and experts in dam safety** can provide valuable insights and support.

- Collaboration with countries that have successfully managed dam safety concerns can offer best practices, technical expertise, and financial assistance.

#### Technology Integration

- Incorporating advanced technologies such as satellite imagery, remote sensing, and Geographic Information System (GIS) **mapping can aid in data collection, monitoring, and risk assessment.** These technologies can enhance the efficiency of dam safety activities.

#### Capacity Building

- In addition to recruiting and training dam safety personnel, emphasis should be placed on continuous learning and skill development.
- Workshops, seminars, and training programs can help keep professionals updated on the latest developments in dam safety practices.

#### Incentives for Compliance

- **Providing incentives for dam owners who adhere to safety standards** and actively participate in maintenance and improvement activities can encourage compliance. Conversely, penalties for non-compliance should be strictly enforced to ensure accountability.

#### Community Engagement

- **Actively involving local communities in dam safety initiatives is crucial.** They can provide valuable insights into the local impact of dam operations and contribute to early warning systems.
- Public participation also fosters a sense of ownership and responsibility.

#### Regular Audits and Reviews

- Implementing a system of regular independent audits and reviews of dam safety measures can help identify shortcomings and areas for improvement. This external scrutiny adds a layer of accountability.

#### Research and Development

- Investing in research and development in the field of dam safety can lead to innovative solutions and improved practices. This can include studying the impact of climate change on dams, exploring new construction

materials, or developing advanced monitoring technologies.

### Transparency and Accountability

- Establishing transparent mechanisms for reporting and disseminating information related to dam safety is essential. This builds trust among stakeholders and allows for collective problem-solving.

### **Challenges in implementing the Act effectively**

- **Lack of adequate data and information on dams:** There is no comprehensive database on all dams in India, their age, condition, design features, hazard potential etc. This hampers proper assessment and monitoring of dam safety.
- **Lack of adequate human and financial resources:** There is a shortage of qualified and trained personnel for carrying out dam safety activities such as inspection, surveillance, maintenance etc. There is also a lack of sufficient funds for undertaking rehabilitation and improvement works on ageing dams.
- **Lack of public awareness and participation:** There is a low level of awareness and involvement among the public regarding dam safety issues. There is a need to educate and sensitise them about their rights and responsibilities as dam beneficiaries or affected parties.
- **Lack of coordination among multiple agencies:** There are multiple agencies involved in planning, designing, constructing, operating and maintaining dams in India. These include central ministries, state departments, public sector undertakings, private entities etc. There is a need to ensure better coordination and cooperation among them to ensure dam safety.



### **Way forward**

- **Developing a national dam inventory and registry:** A comprehensive and updated database on all dams in India should be developed and maintained. This will help in identifying the dams that need urgent attention and prioritizing the interventions accordingly.
- **Strengthening the human and financial resources:** More recruitment and training of dam safety personnel should be done to enhance their skills and competencies. More funds should be allocated for dam safety activities and utilized efficiently and transparently.
- **Enhancing public awareness and participation:** More awareness campaigns and outreach programmes should be conducted to inform and educate the public about dam safety issues. More opportunities should be provided for public consultation and feedback on dam safety plans and actions.
- **Improving coordination among multiple agencies:** A clear delineation of roles and responsibilities of various agencies involved in dam safety management should be done. A mechanism for regular communication and information sharing among them should be established.

### **Conclusion**

- Dam safety in India is a critical concern requiring continuous vigilance and robust maintenance. Adequate investments in technology, monitoring, and emergency preparedness are essential to mitigate potential risks and ensure the long-term stability of dams. Collaborative efforts between government agencies, communities, and experts are imperative for sustaining effective dam safety measures across the country.

## 3.6 INDIAN RAILWAYS' REVENUE PROBLEMS

### Context

- The Indian Railways (IR) is facing a financial crunch due to its rising debt and declining operating ratio.

### Details

- Indian Railways has increased its capital expenditure (capex), but the **operating ratio (the ratio of ordinary working expenses to gross traffic receipts) has not shown improvement.**
- A lower operating ratio implies better profitability, but the lack of surplus has led to increased reliance on Gross Budgetary Support (GBS) and Extra Budgetary Resources (EBS).
- **Rising debt is a concern for Indian Railways**, with a significant portion of revenue going towards the repayment of principal and interest.
- **The freight segment of Indian Railways is profitable**, while the passenger segment incurs significant losses. A Comptroller and Auditor General of India (CAG) report highlighted a loss of ₹68,269 crore in passenger services during 2021-22, with profits from freight traffic used to subsidize passenger services.
- The annual growth in freight volume and revenue is not keeping pace with the overall economic growth. Indian Railways' modal share in India's freight business has declined to approximately 27% from over 80% at the time of independence.
- The Railway Minister outlined key points regarding the substantial capital infusion, ambitious investment plans, and the imperative shift from road to rail transport for reducing logistics costs.

### Capital Expenditure and Track Capacity

- Indian Railways experienced a **14% rise in capital expenditure, reaching ₹2.45 lakh crore in the fiscal year 2022-23**, focusing on a comprehensive overhaul of operations.

- The track laying capacity doubled to 12 km/day, signalling a substantial investment's positive impact on railway infrastructure and efficiency.
- The Railway Minister announced plans for an additional ₹3 lakh crore capital allocation in the upcoming fiscal years, emphasizing the investment's significance in meeting national aspirations and reducing logistics costs.

### Shift from Road to Rail

- The Railway Minister highlights the strategic imperative of transitioning from road to rail transport to achieve affordable logistics.
- The vision aims to **boost the railways' role in goods transportation**, reducing reliance on roads—a move considered economically prudent and crucial for significant nationwide reductions in logistics costs.

### Revenue Challenges

- Indian Railways faces significant revenue challenges, marked by low passenger fares, high freight charges, inefficient asset utilization, and inadequate non-fare revenue.
- These multifaceted challenges pose a threat to the financial viability and operational efficiency of the railway system, hindering its ability to sustain and improve services.

### Low Passenger Fares

- One of the longstanding challenges is **the subsidization of passenger services at the expense of freight services.** This practice has resulted in passenger fares that fall significantly short of covering operational costs.

### High Freight Charges

- To offset the losses incurred in passenger services, Indian Railways has resorted to imposing high freight rates for goods transportation. This, however, has made rail transport less competitive compared to alternative modes such as roads and waterways.

### Inefficient Asset Utilization

- **Inefficiencies in asset utilization further compound the revenue challenges.** The extensive railway infrastructure includes underutilized assets, such as land, rolling stock, stations, and workshops, which do not generate adequate returns on investment.

#### Inadequate Non-Fare Revenue

- Indian Railways has not fully capitalized on non-fare revenue sources, such as advertising, catering, parking, tourism, and station redevelopment. The reliance on fare and freight revenue remains high, with non-fare revenue accounting for only a fraction of the total income.

### **Way forward to enhance revenue and operational efficiency**

#### Rationalizing Fares and Charges

- A crucial strategy for Indian Railways **involves aligning passenger fares with actual operating costs**, reducing the burden on finances and ensuring passengers contribute a fair share to travel expenses.
- Lowering freight charges concurrently makes rail transportation more appealing to businesses, stimulating demand for freight services, and ultimately enhancing overall revenue for the railway system.

#### Optimizing Asset Utilization

- **Strategic modernization of infrastructure through electrification**, track upgrades, and advanced signalling, combined with technology integration like data analytics and artificial intelligence, enhances safety and operational efficiency in Indian Railways.

- Rationalizing the number and locations of stations and workshops further contributes to cost savings and efficient resource allocation, forming a crucial aspect of optimizing overall asset utilization.

#### Diversifying Non-Fare Revenue

- Actively seeking new avenues for non-fare revenue is crucial. This involves expanding the railways' advertising presence across digital and physical platforms, offering value-added services such as catering, Wi-Fi, entertainment, and e-commerce.
- Developing unique tourism products, like luxury trains and heritage circuits, can attract travellers and boost income.
- Transforming stations into world-class hubs with retail, hospitality, office spaces, and other commercial activities can create substantial non-fare revenue.

### **Conclusion**

- Indian Railways faces a pressing revenue challenge, necessitating a transformative and comprehensive approach involving fare rationalization, asset optimization through technology, diversification of non-fare revenue sources, and innovative initiatives such as station redevelopment. These strategies are not only vital for addressing immediate financial challenges but also for ensuring the sustainability and modernization of India's extensive rail network in the long run.



## 3.7 STATE OF FOOD AND AGRICULTURE 2023

### Context

- Unhealthy diets, rich in ultra-processed foods, fats, and sugars, impose a colossal hidden cost estimated at over \$7 trillion annually, impacting both human health and the environment significantly.

### Details

- The State of Food and Agriculture (SOFA) is an **annual report released by the Food and Agriculture Organization (FAO) of the United Nations**.
- The report provides an **overview of the global food system**, including trends in agricultural productivity, food security, and rural development.
- This year's SOFA report highlights issues such as the impact of climate change on agriculture, the need to promote small-scale farming, and the need to ensure access to food for vulnerable populations.

### Key Highlighted of the report

#### Hidden Costs of Ultra-Processed Foods

- The \$7 trillion in hidden costs annually is a comprehensive estimate covering health, environmental, and productivity impacts associated with diets high in ultra-processed foods, fats, and sugars.
- **Ultra-processed foods have been linked to obesity and non-communicable diseases**, imposing a burden on healthcare systems globally.
- Lowered labor productivity is another factor, potentially impacting economic output due to health-related issues associated with poor diets.

#### Global Impact and Economic Significance

- The report emphasizes that the **hidden costs of current agrifood systems are equivalent to nearly 10% of the global GDP**.
- High- and upper-middle-income countries bear a significant portion of these costs, reflecting the broader economic implications of unhealthy diets.

#### Urbanization and Lifestyle Changes

- The rise in consumption of highly processed foods in peri-urban and rural areas is linked to urbanization, lifestyle changes, and shifts in employment patterns.
- Changing demographics and increased commuting times contribute to altered dietary habits.

#### Rural-Urban Continuum

- The report challenges the notion that rural and urban areas have vastly different patterns of food consumption.
- The **diffusion of processed foods across the rural-urban continuum indicates a more uniform shift in dietary habits regardless of location**.

#### Global Food Insecurity

- The prevalence of moderate or severe food insecurity remains high, affecting almost 30% of the global population.
- Despite stabilization in food insecurity rates, the levels are still elevated compared to pre-COVID-19 pandemic times.

#### Undernourishment Projection

- The report projects a **significant increase in chronic undernourishment by 2030, with almost 600 million people affected**.
- The projections highlight the potential long-term impacts of events like the global pandemic and conflicts such as the war in Ukraine on global food security.

#### Regional Variation

- **Among South Asian countries, India is highlighted with a substantial number of undernourished individuals**, although there has been a decrease in the share of undernourished people over time.

#### True Cost Accounting

- The report strongly advocates for true cost accounting to assess the hidden costs of agrifood systems comprehensively.
- This approach involves a detailed analysis by governments and the private sector to

understand and mitigate the negative impacts on health, environment, and productivity.

### Impact on Low-Income Countries

- Low-income countries bear a disproportionately high burden, with hidden costs representing more than a quarter of their GDP. This highlights the potential for these costs to exacerbate existing economic challenges.

### Call for Action

- The FAO Director-General stresses the importance of acknowledging these true costs and taking collective action.
- Transformation of agrifood systems is presented as crucial in addressing not only health-related concerns but also broader

global challenges like the climate crisis, poverty, and inequality.

### **Conclusion**

- The report underscores the interconnectedness of various global challenges and the need for a comprehensive and collaborative approach to address the true costs associated with current agrifood systems.



## 3.8 TRANSFORMING CROP RESIDUE INTO SUSTAINABLE SOLUTIONS

### **Context**

- Crop residue burning poses a significant challenge in India's agricultural landscape.

### **Key Highlights**

#### Current Agricultural Practices

- Indian agriculture has historically prioritized maximizing crop output, neglecting post-harvest management, especially regarding crop residue.
- With intensified pressure on land to increase crop yields, **farmers tend to treat crop residue as waste and resort to burning it for quick disposal.**

#### Environmental Impact

- Crop residue burning **contributes significantly to greenhouse gas emissions and pollution**, posing environmental hazards.
- In 2020, crop residue burning in India alone accounted for around 23 million tonnes of CO<sub>2</sub> equivalent emissions, highlighting its environmental impact.

#### Utilizing Crop Residues for Clean Energy

- A viable solution involves utilizing agricultural residue for clean energy production, particularly in generating compressed bio-gas (CBG).
- Reports suggest that 10 kg of agricultural residue can yield 1 kg of compressed bio-gas,

emphasizing its potential as a renewable energy source.

#### Promoting Circular Agriculture

- Circular agriculture involves both on-farm and off-farm management of crop residues.
- Traditional practices included on-farm residue management for soil restoration and off-farm management for various purposes like fodder, thatches, mulches, and organic manure.

#### Challenges and Solutions

- Increasingly intensive crop production practices have made on-farm residue management less economically viable for farmers, leading to increased burning.
- **The proposed solution involves incentivizing farmers for on-farm residue management** through schemes like the Green Credit Programme (GCP).
- Off-farm management can be promoted through cooperatives or by establishing a value chain for crop residues as feedstock for biogas production.

#### Government Initiatives

- Despite previous initiatives to promote biogas production, progress has been limited.
- Recent budget allocation for the installation of bio-CNG plants under the GOBARdhan scheme signifies a step towards establishing a viable value chain for crop residue utilization.

### Implementation and Awareness

- The success of such initiatives requires effective implementation, widespread awareness campaigns, and the availability of adequate financial resources.

### Socio-economic Impact

- Beyond environmental benefits, **promoting circular agriculture and clean energy production from crop residues can provide additional income for farmers.**
- Furthermore, establishing biogas plants in rural areas can generate significant non-farm employment opportunities, contributing to rural development.

### **Crop residue holds immense potential for various sustainable applications:**

#### Bioenergy Production

- Crop residues, such as corn stover, wheat straw, or sugarcane bagasse, contain organic materials that can be **converted into various forms of biofuels.** Ethanol, for instance, is produced by fermenting sugars present in these residues. Biodiesel is extracted from oil-rich crops, while bio-oils are obtained through processes like pyrolysis or gasification.
- **Biofuels derived from crop residue provide renewable energy sources,** reducing reliance on fossil fuels. They also contribute to lowering carbon emissions and mitigating climate change.

#### Soil Health Improvement

- **Leaving crop residues on fields or tilling them into the soil rather than removing them entirely helps protect the soil.** This practice prevents erosion, enhances soil structure, increases water retention, and fosters microbial activity, thereby improving overall soil health.
- Conservation tillage methods maintain soil fertility, reduce soil degradation, and promote sustainable agricultural practices.

#### Livestock Feed

- Certain crop residues, like corn stalks, wheat straw, or rice husks, can be processed to create livestock feed. By utilizing these residues as forage, farmers can supplement their animals' diets sustainably.

- Using crop residues as animal feed reduces waste and supports the agricultural sector by providing additional nutrition to livestock without relying solely on dedicated crops.

#### Biodegradable Materials

- **Crop residues, particularly cellulose-rich materials, can be utilized to produce biodegradable plastics.** These materials are environmentally friendly and break down more easily compared to traditional plastics made from non-renewable resources like petroleum.
- Creating biodegradable materials from crop residues reduces plastic pollution and decreases dependency on fossil fuels for plastic production.

#### Carbon Sequestration

- **Incorporating crop residues into the soil helps sequester carbon dioxide.** This process involves capturing atmospheric carbon and storing it in the soil, reducing its concentration in the atmosphere and contributing to climate change mitigation.
- Enhancing carbon sequestration in soils aids in climate change adaptation and mitigation efforts.

#### Research and Innovation

- **Ongoing research focuses on developing and improving technologies for efficiently utilizing crop residues.** Innovations in biofuel production processes, advancements in creating new biodegradable materials, and finding effective ways to manage agricultural waste contribute to maximizing the potential of crop residues.
- Continuous innovation enhances the feasibility and effectiveness of using crop residues sustainably, ensuring their integration into various industries and practices.

### **Conclusion**

- There is a need for urgent action to shift from burning crop residue to more sustainable practices. It stresses the importance of policy measures, incentives for farmers, and effective implementation of initiatives to promote circular agriculture and generate



clean energy from agricultural residues while addressing environmental concerns and

boosting rural economies.

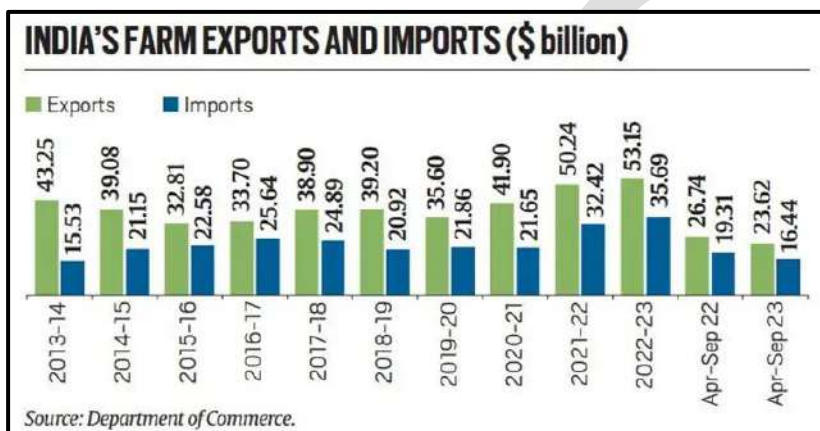
### 3.9 INDIA'S FALLING FARM EXPORTS

#### Context

- India's agricultural exports have seen an 11.6% year-on-year decline in April-September.

#### Details

- In the current fiscal year, India's agricultural exports have decreased by 11.6% compared to the same period last year, falling from \$26.7 billion from April to September 2022 and 2023 respectively.



- This decline follows the government's imposition of bans or restrictions on the export of various commodities,

including wheat, rice, and sugar. Additionally, global prices have eased from their post-Russia-Ukraine invasion peaks, contributing to this decrease.

- Imports have also seen a reduction from \$19.3 billion to \$16.2 billion during the same period, resulting in a slight decrease in the agricultural trade surplus from \$7.4 billion in April-September 2022 to \$7.2 billion in April-September 2023.

#### Global Price Trends

- FAO Food Price Index (FPI):** Increased from 96.5 points in 2019-20 to 139.5 points in 2022-23. Currently averaging 123.2 points in the fiscal year 2023.
- Impact on Indian Agricultural Exports:** Strong correlation between India's farm exports and movements in the FPI. Exports fell from \$43.3 billion in 2013-14 to \$35.6 billion in 2019-20 with a decrease in FPI. Rose thereafter with the index reaching unprecedented levels in 2022-23.

#### Government-Imposed Export Restrictions

- Bans and Restrictions Timeline:** Bans on wheat, broken rice, and certain categories of non-basmati rice, will lead to limitations on exports. Shifting sugar exports from "free" to the "restricted" category and capping the total quantity exported. Introduction of duties and minimum export prices on various grains and rice.

	2021-22	2022-23	Apr-Sep 22	Apr-Sep 23
Marine products	7772.36	8077.98	4119.63	3803.88
Non-basmati rice	6133.63	6356.71	3199.18	2706.58
Sugar	4602.65	5770.83	2636.25	1302.06
Basmati rice	3537.49	4787.65	2278.35	2589.98
Spices	3896.03	3785.36	1926.90	1949.78
Buffalo meat	3303.78	3193.69	1636.10	1734.40
Raw cotton	2816.24	781.43	435.87	393.82
TOTAL*	50240.21	53153.55	26736.48	23621.71

- Effect on Exports:** Noticeable decline in exports of wheat, non-basmati rice, and sugar after these restrictions were imposed.

### Impact on Specific Agricultural Commodities

- **Wheat and Rice Exports:** Record-high exports of wheat in 2021-22 and rice (non-basmati plus basmati) in 2022-23. Subsequent declines in wheat and non-basmati rice exports in the current fiscal year (April-September).
- **Sugar Exports:** Marked reduction in sugar exports from \$4.6 billion in 2021-22 to significantly lower figures after restrictions were imposed.

### Shifts in Trade Dynamics

- **Cotton Trade:** Declining cotton prices led to reduced cotton exports and a surge in imports. India transformed from a net exporter to a net importer of cotton.
- **Edible Oil Imports:** Sharp rise in imports of edible oils due to soaring global prices post-Ukraine conflict. Continuation of imports at a low 5.5% duty despite price decreases.

	2021-22	2022-23	Apr-Sep 22	Apr-Sep 23
Vegetable oils	18991.62	20837.70	11097.64	8508.76
Fresh fruits	2460.33	2483.95	1236.66	1131.58
Pulses	2228.95	1943.89	595.78	1265.23
Spices	1299.38	1336.65	755.20	774.55
Cashew	1255.46	1805.67	1412.52	968.79
Raw cotton	559.55	1438.69	1081.43	401.20
Natural rubber	1032.71	937.60	542.18	380.37
TOTAL*	32422.30	35686.20	19311.21	16444.83

\*Includes other items. Source: Department of Commerce.

### Impact on Farmers

- Declining export opportunities due to global price shifts. Increased vulnerability to imports affects the income and stability of farmers.

### What Can Be Done?

- The decline in farm exports is a serious challenge for India's economy and agriculture sector, as it **affects millions of farmers and rural workers who depend on them**. It also undermines India's potential to become a global leader in food security and sustainability. Therefore, the government and other stakeholders must take urgent steps to reverse this trend and boost India's farm exports.

### Measures that can be taken are:

- Reviewing and revising the export bans or restrictions on certain commodities, and adopting a more flexible and responsive approach to export policy that balances domestic and international interests.
- **Enhancing the quality and standards of India's farm products, and investing in research and development, innovation,** and technology adoption to improve productivity and efficiency.
- **Diversifying India's export basket and markets,** and exploring new opportunities in emerging regions like Africa, Latin America, and Southeast Asia.
- **Strengthening India's trade diplomacy and negotiations,** and resolving trade disputes or barriers with key partners like China, the US, and the EU.
- **Providing adequate support and incentives to farmers and exporters,** such as credit facilities, insurance schemes, subsidies, infrastructure development, and market information.

### Conclusion

- India has a huge potential to become a major player in the global food system, given its vast resources, diverse agro-climatic zones, and rich cultural heritage. However, it also faces many challenges that need to be overcome with vision, strategy, and action. By addressing these challenges effectively, India can not only revive its farm exports but also contribute to its food security and global food stability.



## 3.10 FINANCE COMMISSION

### Context

- Ritvik Ranjanam Pandey has been appointed as the Officer on Special Duty for the Advance Cell of the Sixteenth Finance Commission.

### Details

- The 16th Finance Commission, responsible for deciding the tax-sharing formula between the Centre (central government) and states, is scheduled to be formed before the end of the year.
  - The Fifteenth Finance Commission, chaired by NK Singh.
- The commission will cover five years beginning in 2026-27, and the report is expected to be taken up by the government during the presentation of the Budget for the financial year 2026-27.

### Finance Commission of India

- It is a constitutional body that plays a vital role in the fiscal federalism of the country. It is **established by the President of India under Article 280 of the Indian Constitution every five years or earlier, as required.**
- The main function of the Finance Commission is to recommend how the tax revenues collected by the central government should be distributed among the states and the union territories.
  - It also determines the principles that govern the grants-in-aid given by the central government to the states for various purposes.
- **The Finance Commission consists of a chairman and four other members, who are appointed by the President.** The qualifications, conditions of service and tenure of the members are determined by the Parliament through a law.
- The chairman of the Finance Commission is usually a person who has had experience in public affairs, while the other members are selected from among persons who have

expertise in finance, economics, law or administration.

- **The Finance Commission is required to submit its report to the President** within two years from the date of its constitution. The report contains its recommendations on various matters related to the financial relations between the centre and the states, such as:
  - The distribution of net proceeds of taxes between the centre and the states, and among the states themselves.
  - The principles that should govern the grants-in-aid given by the centre to the states.
  - The measures needed to augment the consolidated fund of a state to supplement its resources.
  - Any other matter referred to it by the President in the interest of sound finance.
- **The recommendations of the Finance Commission are advisory in nature and not binding on the government.** However, they are usually given due weightage by the government while formulating its budget and policies.
- **The government is required to lay the report of the Finance Commission before both houses of Parliament** along with an explanatory memorandum on its action taken on its recommendations.

### Conclusion

- The Finance Commission is an important institution that ensures fiscal balance and equity among different levels of government in India. It also promotes cooperative federalism and accountability in public finance. By providing a fair and transparent mechanism for the sharing of resources, it fosters harmony and trust among various stakeholders in the Indian polity.



## 3.11 ARTIFICIAL INTELLIGENCE AND THE WORLD WITHOUT WORK

### Context

- AI progress could replace various types of work, even thinking tasks, potentially making traditional jobs unnecessary and shifting the focus of work towards personal fulfilment rather than survival.

### Details

- The intersection of artificial intelligence (AI) and the changing landscape of work is a topic that has garnered significant attention and discussion. The rise of AI technologies has the potential to reshape various aspects of the workforce, and it brings both opportunities and challenges.

### Opportunities

- **Automation of Routine Tasks:** AI can automate repetitive and routine tasks, allowing humans to focus on more creative, complex, and value-added work.
- **Increased Productivity:** AI technologies can enhance productivity by handling tasks more efficiently, leading to economic growth and potentially creating new job opportunities in emerging industries.
- **Innovation and Industry Transformation:** AI can drive innovation and lead to the emergence of new industries and job categories, especially in areas like machine learning, data science, and AI development.
- **Augmentation of Human Abilities:** AI can augment human capabilities, providing tools and systems that enhance decision-making, problem-solving, and overall job performance.

### Challenges

- **Job Displacement:** The automation of certain tasks may lead to job displacement for individuals whose roles are easily replaceable by AI systems. This could be particularly challenging for those in jobs involving routine and repetitive tasks.
- **Skill Shift:** The rise of AI may require a shift in the skills demanded by the job market. Individuals may need to acquire new skills, particularly those related to technology and digital literacy, to remain competitive in the job market.

- **Income Inequality:** The benefits of AI may not be evenly distributed, leading to increased income inequality. Certain industries and skill sets may see significant gains, while others may face challenges.
- **Ethical and Social Concerns:** The widespread use of AI raises ethical questions, such as bias in algorithms, job surveillance, and the impact on privacy. These concerns need to be addressed to ensure responsible and fair deployment of AI technologies.

### Potential Solutions

- **Investment in Education and Training:** Governments, businesses, and educational institutions can invest in programs that facilitate the acquisition of new skills, ensuring that the workforce remains adaptable to technological changes.
- **Social Safety Nets:** Implementing social safety nets, such as unemployment benefits and job retraining programs, can help mitigate the negative impact of job displacement.
- **Ethical AI Development:** There is a need for ethical guidelines and regulations to govern the development and deployment of AI to ensure that it benefits society as a whole and doesn't disproportionately harm certain groups.
- **Promoting Inclusive Growth:** Efforts should be made to ensure that the benefits of AI are distributed more equitably, preventing the exacerbation of existing social and economic inequalities.

### Conclusion

- The relationship between AI and work is complex and multifaceted. While there are concerns about job displacement and other challenges, there are also significant opportunities for positive change and growth. The key lies in proactive measures to address the challenges and ensure that the benefits of AI are shared across society.



## 3.12 INDIA TO EMERGE AS 3rd LARGEST ECONOMY BY 2027

### Context

- The Union Finance Minister addressed the Indo-Pacific Regional Dialogue, focusing on the theme of 'Geopolitical Impacts upon Indo-Pacific Maritime Trade and Connectivity.'

### Key Highlights of the Speech

#### Economic Growth and Global Standing

- The Union Finance Minister notes that **India is expected to become the third-largest economy in the world by 2027, surpassing Japan and Germany.**
- Despite global challenges, India's economic growth is estimated to be just under 7% during the year, the highest among major economies.

#### Blue Economy and Maritime Opportunities

- The minister highlights **India's 'Blue economy,' accounting for about 4% of the GDP, with significant opportunities.**
- **India has a vast coastal area with nine states and four union territories, 12 major ports, over 200 non-major ports, and an extensive network of navigable waterways for international and domestic trade.**
- According to UNCTAD, **India was the second-largest exporter of ocean-based goods and services among developing countries in 2020.**
- India is focused on transitioning from a 'brown' economic model to a 'blue' one, emphasizing sustainable practices and opportunities in the maritime sector.

#### Indo-Pacific Region

- The minister emphasizes the economic dynamism of the **Indo-Pacific region, constituting 60% of global GDP and almost 50% of global merchandise trade.**
- Acknowledges the geopolitical challenges in the region due to great power competition.
- India asserts its commitment to an internationally accepted and consensually derived rules-based order, positioning itself as a proponent of such a system.

#### Maritime Sector Development

- India aims to grow the maritime sector and position itself as a hub in new and diversified supply chains and value chains across the Indo-Pacific and globally.
- The turn-around time of Indian ports is highlighted as lower than that of established maritime centres like Singapore, the UAE, Germany, the USA, Australia, Russia, and South Africa.
- **Policies related to shipping insurance, including the creation of a 'Marine Cargo Pool,' are mentioned.**
- India is working on strengthening its position in shipping arbitration to reduce vulnerability to international sanctions.

#### Infrastructure and Connectivity Projects

- The minister discusses the National Monetisation Pipeline (NMP) for the monetization of projects in major ports.
- Highlights the India-Middle East-Europe Connectivity Corridor (IMEC) as a promising project for enhancing transportation efficiency and economic integration.
- Acknowledges geopolitical challenges in initiatives like the IMEC, citing the ongoing conflict in Israel and Gaza as a manifestation of these challenges.
- **India's projected rise to become the world's third-largest economy by 2027 is grounded in several key factors that drive its economic growth and potential.**

#### **Factors Contributing to India's Growth**

- **Demographic Dividend:** India boasts a large and young population, offering a significant advantage in terms of a robust labour force. With a median age of 28, compared to older populations in countries like China and Japan, India has a substantial working-age population that can contribute to economic productivity and consumption.
- **Digitization and Innovation:** India's focus on digital infrastructure, exemplified by initiatives like Aadhaar and UPI, has facilitated

financial inclusion and innovation. These advancements have leapfrogged traditional developmental stages, creating new opportunities for businesses and consumers alike.

- **Policy Shifts and Investments:** The country's approach toward boosting investment, coupled with policy changes, is driving economic growth. This includes reforms in areas like taxation (GST), renewable energy targets, and welfare schemes for poverty alleviation.
- **Resilience and Adaptability:** Despite challenges like the COVID-19 pandemic, India has showcased resilience and adaptability, experiencing a strong rebound and positioning itself as one of the fastest-growing major economies.

### Challenges and Considerations

- India needs to invest in physical infrastructure to support its economic growth. Improvements in transportation, energy, and communication networks are crucial.

## 3.13 POPPY CULTIVATION

### Context

- The opening of opium production and processing to private players is a contentious issue in India, with many farmers expressing concern about the potential impact on their livelihoods.

### Details

- Farmers are already facing challenges due to stagnant procurement rates and rising input prices, and they fear that privatization could further erode their bargaining power and lead to exploitation.
- The government has argued that privatization will bring much-needed efficiency and investment to the opium sector. However, farmers remain sceptical, pointing to the lack of transparency and consultation in the decision-making process. They are also concerned about the potential for job losses

- **Enhancing the quality of education and skill development** is vital to harness the potential of its young workforce fully.
- Reforms in labour and land markets, as well as improvements in institutional quality, are necessary to sustain growth.
- Addressing issues like climate change, pollution, inequality, and poverty is crucial for sustainable development.
- Geopolitical tensions and the ongoing effects of the global pandemic pose uncertainties for India's economic trajectory.

### Conclusion

- While the trajectory towards becoming the world's third-largest economy is promising, it's contingent on addressing challenges, implementing reforms, and navigating global uncertainties. India's potential lies not just in its projected growth but also in its ability to manage these complexities while balancing economic development with social and environmental responsibilities.

and the erosion of traditional knowledge and practices.

### Poppy Cultivation

- **The opium poppy plant is native to Asia and the Mediterranean region.** It is cultivated in a variety of climates and environments, but it thrives in warm, sunny conditions with well-drained soil.
- The ideal growing season for poppies is **between 18 and 25 degrees Celsius.**
- **The opium poppy is a relatively drought-tolerant plant,** but it requires a moderate amount of water during the growing season.
- The opium poppy is a valuable crop, as it is the source of opium, which is used to make a variety of narcotic drugs, including morphine, heroin, and codeine. The plant is also a source of poppy seeds, which are used in cooking and baking.

- **Poppy cultivation in India is legal and is regulated by the government.** The cultivation of poppy is restricted to certain areas of the country, and farmers must obtain a license from the government to grow the crop.
- **Poppy is typically grown in the states of Madhya Pradesh, Rajasthan, and Uttar Pradesh.** These states have a warm and dry climate that is ideal for poppy cultivation.

#### Challenges Faced by Opium Farmers:

- **Government Regulations:** The Controlled Substance status of opium subjects its cultivation and trade to strict regulations by the Central Bureau of Narcotics (CBN). Farmers must sell their produce to the CBN at fixed procurement prices and quotas, which have remained stagnant for years despite rising input costs.
- **Economic Pressures:** Escalating costs of inputs like seeds, fertilizers, and labour have shrunk profit margins for farmers. The disparity between procurement prices and production costs undermines their livelihoods.
- **Quality Standards:** The CBN imposes stringent quality standards on opium, rejecting batches that don't meet morphine content and moisture level criteria. Meeting these standards amidst unpredictable weather, pests, and thefts poses significant challenges.
- **Policy Change and Private Entry:** The recent government policy allowing private players into opium production raises concerns among farmers. They fear exploitation through lower prices, stricter conditions, and potential lobbying to reduce or eliminate the CBN's role, leaving farmers vulnerable to market forces.

#### Potential way forward

- **Fair Pricing and Quotas Revision:** The government could reassess procurement prices and quotas to align with increased production costs. Regular reviews or

adjustments based on market trends could ensure fair compensation for farmers.

- **Regulatory Safeguards:** While allowing private players, the government should implement robust regulations to protect farmers from exploitation. Ensuring fair trade practices, maintaining quality standards, and setting up oversight mechanisms are crucial.
- **Dialogue and Collaboration:** Facilitating discussions between stakeholders (government, farmers, private players) could yield solutions balancing the interests of all parties. Establishing platforms for ongoing dialogue can address concerns and build consensus.
- **Diversification and Support:** Encouraging crop diversification or offering support for alternative income sources could reduce dependency on opium cultivation. Financial assistance or training in alternative farming methods might help in transitioning.
- **Sustainable Practices:** Providing assistance and education on sustainable farming practices could mitigate risks from weather-related issues, pests, and diseases. Investment in technology and resources for better crop management could improve yield and quality.
- **Policy Stability and Long-term Vision:** Ensuring stability in policies concerning opium cultivation is crucial. Predictability allows farmers to plan effectively and invest in their farming practices for the long term.

#### **Conclusion**

- The future of opium farming in India is uncertain. While privatization may bring some benefits, it is also likely to exacerbate existing challenges for farmers. The government needs to do more to address the concerns of farmers and ensure that they have a fair and equitable share of the benefits from opium production.



## 3.14 RIGHT TO REPAIR FRAMEWORK

### Context

- The government aims to replace the 'use-and-throw' culture with a 'right to repair' policy, disrupting conventional business models by prioritizing sustainability and empowering consumers.

### Right To Repair

- The right to repair is the **idea that consumers should have the ability to fix their own devices or choose who repairs them, without facing legal or technical barriers from manufacturers.** It is a movement that advocates for fair and accessible repair options for electronics, appliances, vehicles, and other products.
- The "Right to Repair" framework refers to a **set of policies and regulations that aim to give consumers and independent repair shops the legal ability to repair and modify the devices they own.**
- Many manufacturers design their products with proprietary components and employ measures like adhesives and non-standard screws, making it challenging for consumers and third-party repair professionals to fix devices. Some manufacturers restrict access to repair manuals, diagnostic tools, and spare parts, creating a reliance on official repair services.
- The Ministry of Consumer Affairs in India unveiled the idea in July 2022 and established a committee to prepare the framework. A **right-to-repair portal was introduced for the voluntary registration of manufacturers.**

### Why is the right to repair important?

- **Saving money and time:** Repairing a device can be cheaper and faster than buying a new one, especially if the problem is minor or common. Consumers can also avoid paying high fees to authorized service providers or shipping costs to send their devices to distant locations.
- **Reducing waste and pollution:** Repairing a device can extend its lifespan and prevent it from ending up in landfills or incinerators, where it can release toxic substances and greenhouse gases.
- **Supporting local businesses and jobs:** Repairing a device can create opportunities for independent repair shops, technicians, and entrepreneurs, who can offer more competitive prices and personalized services than big corporations.
- **Fostering innovation and education:** Repairing a device can encourage consumers to learn more about how their devices work, how to troubleshoot problems, and how to upgrade or customize them. It can also inspire makers, hackers, and tinkerers to create new solutions and products using recycled or repurposed materials.

### Key Components of the Right to Repair Framework

- **Access to Information:** The framework often advocates for manufacturers to provide repair manuals, schematics, and diagnostic tools to the public or authorized repair professionals. This includes making available information on how to disassemble and troubleshoot devices.
- **Availability of Spare Parts:** Manufacturers may be required to sell spare parts to consumers and third-party repair shops at fair prices. This ensures that individuals and independent repair businesses can access the components needed for repairs.
- **Fair and Open Competition:** Advocates for the Right to Repair argue for an open market that allows independent repair shops to compete on a level playing field with authorized repair providers.
- **Removal of Digital Locks and Restrictions:** The framework often addresses the issue of digital rights management (DRM) or software locks that prevent unauthorized repairs. Removing these restrictions allows for greater flexibility in fixing devices.
- **Warranty Protection:** Right to Repair policies may protect consumers' warranties even if they choose to repair their devices through third-party providers.



### What are the challenges to the right to repair?

- **Proprietary designs and parts:** Manufacturers often design their products in ways that make them hard or impossible to open, disassemble, or modify, such as using glue, solder, or special screws. They also use proprietary parts that are not compatible with standard tools or components, or that require special software or codes to function.
- **Software locks and updates:** Manufacturers often use software locks or updates to restrict the functionality of their products, such as disabling features, blocking third-party accessories, or slowing down performance. They also use software updates to force consumers to upgrade to newer models or to invalidate warranties if they attempt to repair their devices themselves or with unauthorized parties.
- **Legal threats and lobbying:** Manufacturers often use legal threats or lobbying to prevent consumers from accessing repair information, manuals, schematics, or spare parts. They also use legal threats or lobbying to oppose legislation that would protect the right to repair.

- **Consumer Choice:** Right to Repair advocates argue that consumers have the right to choose where and how to repair their devices, promoting a competitive and open market.
- **Environmental Impact:** Repairing and refurbishing devices can contribute to a reduction in electronic waste, as opposed to discarding and replacing entire devices.
- **Cost Savings:** Access to affordable repair options can save consumers money, as official repair services are often more expensive than independent repair shops.
- **Job Creation:** Supporting independent repair businesses can contribute to job creation in local communities.

### **Conclusion**

- The Right to Repair framework is a response to the challenges consumers face in repairing their own devices or seeking third-party repairs. It seeks to balance the interests of consumers, independent repair businesses, and manufacturers while promoting sustainability and consumer choice.



### Arguments in Favor of Right to Repair

## 3.15 NEED FOR CLIMATE-SMART AGRICULTURE IN INDIA

### **Context**

- India's agricultural sector faces numerous challenges due to climate change, population growth, and evolving dietary demands.

### **Details**

- India is one of the most vulnerable countries to the impacts of climate change, such as rising temperatures, erratic rainfall, droughts, floods, and cyclones. These impacts pose serious threats to the food security, livelihoods, and well-being of millions of farmers and consumers in India. Therefore, there is an urgent need for climate-smart agriculture (CSA) in India.

### Climate Change Effects on Agriculture

- **Extreme Weather Events:** Climate change leads to an increase in extreme weather phenomena like heat waves, floods, droughts, and cyclones, impacting crop production, soil health, and water availability.
- **Decline in Crop Yields:** Predictions indicate a potential decline in crop yields due to changing climatic conditions, posing a threat to food production and security.
- **Land Degradation and Soil Health:** Traditional farming practices are less effective in the face of climate change, leading to land degradation, soil erosion, and reduced soil fertility.

## Why CSA in India?

- **Holistic Approach:** CSA integrates three main objectives - increasing productivity sustainably, adapting to climate change, and reducing greenhouse gas emissions. This holistic framework aligns with India's need for sustainable agriculture.
- **Addressing Yield Decline:** Predictions show a potential crop yield decline of up to 9% in India between 2010 and 2039 due to climate change. CSA offers strategies to combat this decline by introducing resilient agricultural practices.
- **Aligned with Sustainable Development Goals (SDGs):** CSA aligns with the UN's SDGs, particularly in ending hunger and promoting sustainable environmental management.
- **National Policy Emphasis:** India's National Action Plan on Climate Change emphasizes climate-resilient agriculture. Government initiatives like the Soil Health Card Scheme, Precision Farming, and various Yojanas (schemes) focus on climate-smart agricultural practices.
- **Economic Empowerment:** CSA adoption empowers farmers economically by introducing resilient methods and providing access to information and resources.

## **Importance of Climate-Smart Agriculture**

### Adaptation and Resilience

- It aims to increase agricultural productivity sustainably by introducing innovative practices that adapt to changing climate conditions.
- It focuses on building resilience in agricultural systems helping farmers mitigate risks associated with climate-related hazards.

### Mitigation of Climate Change

- Implementing CSA practices aims to reduce greenhouse gas emissions produced by the agricultural sector, contributing to global climate change mitigation efforts.

### Food Security and Economic Empowerment

- With a growing population and changing dietary patterns, CSA becomes crucial in meeting the increasing demand for food sustainably.

- Small and marginal farmers, who form a significant portion of India's agricultural workforce, can benefit economically by adopting climate-smart techniques.

### Environmental Conservation and Biodiversity

- CSA encourages practices like crop diversification, sustainable water management, and agroforestry, aiding in biodiversity conservation and reducing habitat degradation.

### Policy and Global Commitments

- India has various government initiatives focusing on climate-resilient agriculture, highlighting the policy emphasis on adopting CSA practices.
- Aligning with global commitments such as those outlined in the Paris Agreement, the CSA aims to reduce emissions and contribute to global climate goals.

## **Implementation Challenges and Way Forward**

- Investing in knowledge dissemination and providing practical tools and resources is crucial to enable the widespread adoption of CSA.
- Encouraging precision farming and providing technological support can enhance agricultural efficiency and resilience.
- Encouraging community engagement and support for environmentally friendly agricultural practices can drive the adoption of CSA.

## **Conclusion**

- CSA offers a holistic approach to tackling the challenges posed by climate change in agriculture. By integrating innovation, resilience, and sustainability, CSA stands as a crucial pathway to ensure food security, farmer empowerment, and environmental sustainability in India and globally. The multifaceted benefits of CSA underscore its significance in transforming agricultural practices to meet the needs of a changing climate.



## 3.16 INTERNATIONAL SUGAR ORGANISATION

### Context

- India assuming the chairmanship of the International Sugar Organisation (ISO) for 2024.

### Details

- India's upcoming chairmanship of the ISO, represents a significant milestone in the global sugar sector, underscoring India's pivotal role as a major producer, consumer, and influencer in the industry.

#### India's Global Standing in Sugar

- Production and Consumption:** India holds a prominent position as the world's second-largest producer and the largest consumer of sugar. Contributing 20% to global sugar production and consuming 15% of the world's sugar, India's role in the market is substantial.
- Leadership Recognition:** Being selected to chair the ISO for 2024 highlights India's increasing influence and recognition within the global sugar community. It showcases India's capability to steer discussions, initiatives, and policies on a global platform.
- Farmer-Centric Approach:** India's distinction in paying the highest cane prices to farmers while maintaining operational efficiency and self-sufficiency without heavy reliance on government subsidies is commendable. This commitment to fair compensation reflects a dedication to the well-being of its agricultural workforce.
- Price Stability:** Despite a significant 40% surge in global sugar prices, India has managed to maintain domestic sugar retail prices at a stable level, demonstrating a consumer-centric approach amid market fluctuations.

### International Sugar Organisation (ISO)

#### Role and Functions

- Established in 1968, the ISO serves as an intergovernmental organization based in London, UK.

- Its core activities involve **collecting and disseminating comprehensive statistics** about the world sugar market, researching new uses for sugar and its products, facilitating intergovernmental discussions on sugar-related matters, and promoting the trade and consumption of sugar globally.

#### No Regulatory Authority

- While the ISO doesn't possess direct regulatory powers like setting prices or enforcing export quotas, its efforts contribute significantly to market transparency.
- This transparency aids in fostering a deeper understanding of the sugar market dynamics, potentially leading to more stable prices and improved conditions for producers and workers.

#### Membership and Impact

- The ISO's membership includes over 90% of the world's sugar production and consumption.
- The Council, comprising representatives from member countries, convenes biannually to deliberate on market trends and set the ISO's agenda.

### India's Leadership and Impact

- India's assumption of the ISO chairmanship signifies its commitment to sustainability, innovation, and the welfare of farmers and consumers within the sugar industry. This leadership role presents India with a platform to influence discussions, policies, and initiatives that can shape the direction of the global sugar market.
- By chairing the ISO, India gains an influential position to steer conversations towards more sustainable practices, fair trade policies, and agricultural welfare within the sugar industry. This elevation reinforces India's significant role in the international sugar market, enabling collaborative efforts to create a fairer, transparent, and sustainable industry for all stakeholders involved.

## Conclusion

- India's leadership role in the ISO signifies its commitment to sustainability, innovation, and the welfare of farmers and consumers within the sugar industry. This appointment

highlights not only India's economic significance but also its dedication to fostering a fair and transparent global sugar market.



## 3.17 SHORT ARTICLES

### World Food India 2023

#### Context

- The Prime Minister inaugurated the second edition of the 'World Food India 2023' mega food event in New Delhi.

#### Details

- World Food India 2023 is a global event that showcases the opportunities and innovations in the food processing sector of India. The event aims to attract investments, facilitate partnerships, and foster collaborations among stakeholders in the food value chain.
- The Prime Minister provided Seed Capital Assistance to over one lakh Self Help Group (SHG) members during the inauguration. The event showcases India as the 'food basket of the world' and commemorates **2023 as the International Year of Millets**.

#### Key Highlights of the Prime Minister's Speech

##### Technology and Food Security:

- Prime Minister Modi praised the technology and startup pavilion as well as the food street at the event.
- He highlighted the **fusion of technology and culinary excellence as a key factor shaping the future economy**.
- The Prime Minister emphasized the challenge of food security in the changing world and the significance of World Food India 2023 in addressing this challenge.

##### Recognition of the Food Processing Sector

- India's food processing sector, known as the 'sunrise sector,' received significant recognition.
- The sector attracted foreign direct investments exceeding Rs 50,000 crores in the past nine years due to government policies.
- Progress under the Production-Linked Incentive (PLI) scheme and ongoing projects under the Agri-Infra Fund were highlighted.

##### Women-led Development and Cultural Heritage

- Prime Minister Modi stressed the importance of **women-led development and acknowledged women's contributions to the food processing industry**.
- The promotion of cottage industries and self-help groups for women was mentioned.
- India's rich food diversity, cultural heritage, and unique agricultural products were highlighted.

##### Sustainable Agriculture and Global Food Security

- Emphasis on sustainable agriculture, food security, and nutrition security** was aligned with the G-20 Delhi declaration.
- The Prime Minister urged all partners in the food processing industry to reduce post-harvest losses through technology.
- Confidence expressed that the event's conclusions will contribute to a sustainable and food-secure future globally.

##### Conclusion

- This event serves as a platform to showcase India's achievements in the food processing sector, promote investment, and address global challenges related to food security.



## Status of Cement Sector in India

### Context

- The Competition Commission of India (CCI) launched a nationwide study to comprehensively understand and evaluate the competitive landscape of the cement sector across India.

### Key objectives of the study include:

- Evaluate the evolving market structure in the cement sector, considering factors such as market concentration, entry/exit of players, and consolidation within the industry.
- Analyze trends and movements in various aspects** of the cement market, including price, cost, production, capacity, capacity utilization, and profitability.
- Investigate cement pricing in both trade and non-trade segments. Conduct an in-depth analysis of the determinants influencing movements in cement prices.
- Reach out to relevant stakeholders in the cement sector to gather qualitative and quantitative information.** The goal is to achieve a holistic understanding of the industry and identify any impediments to competition.
- Ascertain enforcement and advocacy priorities for the CCI in the cement sector are based on the findings of the study.

### Current State of the Indian Cement Industry

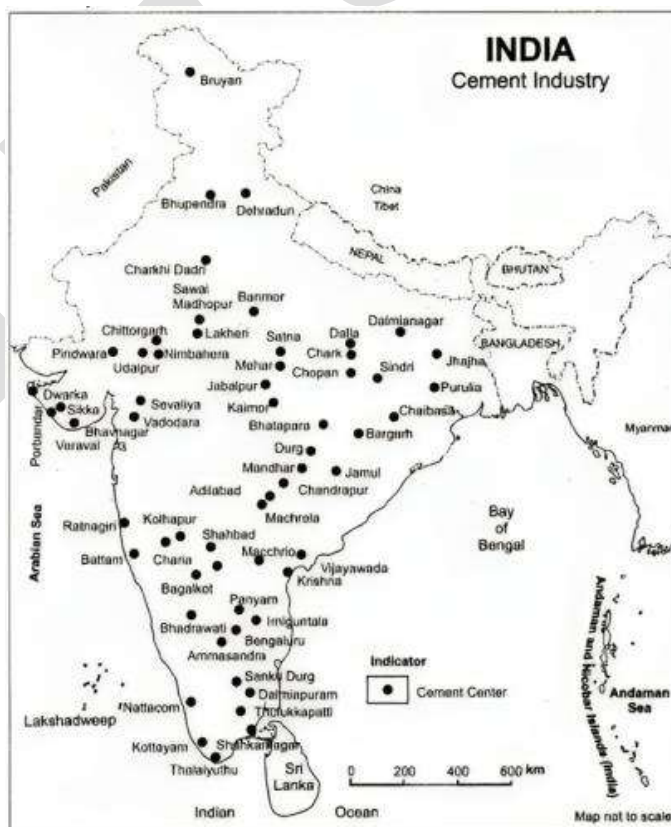
- India has the second-largest cement sector globally, with an installed capacity of over 550 MTPA. Cement production in FY22 was 359.9 million tonnes, expected to reach 550 million tonnes by FY27, with a projected Compound Annual Growth Rate (CAGR) of 7-8%.
- The industry is characterized by fragmentation, with over 100 cement companies, but the top 10 producers hold around 55% of the total installed capacity.
- Southern and western regions contribute over 60% of the total installed capacity.

### Challenges Faced by the Industry

- Rising Input Costs:** The prices of key input materials such as coal, limestone, and power have been increasing in recent years, putting pressure on margins.
- Excess Capacity:** The Indian cement industry has an installed capacity of over 550 MTPA, but demand is currently around 350 MTPA. This excess capacity is putting pressure on prices.
- Environmental Regulations:** The Indian government has been tightening environmental regulations in recent years, which has increased the cost of production.
- Competition from Imports:** The Indian cement industry is facing increasing competition from imports, particularly from China.

### Trends Shaping the Industry

- The Indian cement industry is expected to see **consolidation in the coming years**, as companies look to achieve economies of scale and improve efficiency.



Map : Location of major centers of cement industry in India

- Cement companies are increasingly adopting new technologies, such as waste heat recovery systems and energy-efficient kilns, **to reduce their environmental impact and improve their cost competitiveness.**
- Cement companies are increasingly focusing on value-added products, such as cement with special properties, to differentiate themselves from competitors.
- Cement companies are expanding into new markets, such as Africa and the Middle East, to tap into growing demand.

### Conclusion

- Despite challenges, the Indian cement industry is poised for growth due to strong demand, government support, and strategic adaptation to market dynamics. The trends indicate a shift towards sustainability, efficiency, and market diversification, ensuring long-term viability in a competitive global environment.

## **National Mineral Development Corporation**

### Context

- The National Mineral Development Corporation (NMDC) Ltd.'s venture into gold mining in Western Australia to diversify its minerals portfolio and expand beyond its core focus on iron ore.

### Detail

#### Diversification Strategy

- NMDC's decision to enter the gold sector reflects a strategic diversification strategy. Gold mining can provide the company with exposure to a different commodity, potentially mitigating risks associated with relying solely on iron ore.

#### Project Details

- **NMDC's gold mining operations will be centred around the Mount Celia project in Western Australia.** This project choice might have been influenced by the region's known gold reserves and favourable mining conditions.
- The initiation of gold ore processing at the Paddington gold mine in the first quarter of 2024 indicates the timeline for the commencement of NMDC's gold mining operations.

### National Mineral Development Corporation (NMDC)

- **As a Navratna Public Sector Enterprise under the Ministry of Steel,** NMDC operates under government control, contributing to the country's mining and steel sectors.

- NMDC's primary focus has traditionally been iron ore, where it holds the position of the single largest producer in India. Diversification into gold showcases the company's adaptability and willingness to explore new opportunities.
- Apart from iron ore, NMDC has diversified into other raw materials essential for the steel industry, such as limestone, magnesite, and silica sand. The company's involvement in diamond mining and international iron ore exports highlights its diverse mining activities.

#### Operational Excellence

- **The 5-star rating by the Indian Bureau of Mines underscores NMDC's commitment to adopting scientific and sustainable mining practices.** This commitment is crucial for maintaining environmental standards and ensuring long-term operational viability.
- The presence of an R&D centre in Hyderabad signifies NMDC's dedication to innovation and continuous improvement in the mining industry. This focus on research and development is essential for staying competitive and addressing evolving industry challenges.

#### Multi-Sectoral Presence

- NMDC's involvement in steel plant development, power generation, railway transportation, and infrastructure development demonstrates its multi-sectoral presence in the Indian economy. This diversification helps the company navigate fluctuations in specific commodity markets.

## Conclusion

- NMDC's entry into gold mining in Western Australia is a significant strategic move, showcasing its adaptability and commitment to diversification. It also reflects the

company's broader role in contributing to India's mining, steel, and international trade sectors.



## Payment Aggregator-Cross Border

### Context

- The Reserve Bank of India (RBI) has introduced new regulations categorizing entities facilitating cross-border payments for import and export of goods and services as Payment Aggregator-Cross Border (PA-CB).

### Details

- The RBI has issued a circular titled 'Regulation of PA - Cross Border' outlining the guidelines for payment system providers and participants.

#### Payment Aggregator

- A payment aggregator is a service provider that allows merchants to process payments from multiple channels and methods, such as credit cards, debit cards, e-wallets, bank transfers, etc.
- A cross-border payment aggregator is a payment aggregator that operates across different countries or regions, enabling merchants to accept payments from customers in different currencies and jurisdictions.
- Cross-border payment aggregators can offer benefits such as lower fees, faster settlement, wider reach, and compliance with local regulations. However, they also face challenges such as currency fluctuations, fraud risks, tax issues, and legal complexities. Therefore, cross-border payment aggregators need to have a robust and flexible platform that can handle the diverse and dynamic needs of their clients and partners.

#### Key points from the circular include:

- All entities engaged in cross-border payment facilitation for the import and export of goods and services will be directly regulated by the RBI.
- Non-bank entities providing PA-CB services are required to meet specific net worth criteria. They must have a minimum net worth of ₹15 crore at the time of application for authorization and a minimum net worth of ₹25 crore by March 31, 2026.
- Authorization for PA-CB activity can be sought under three categories - export-only PA-CB, import-only PA-CB, and export and import PA-CB.
- Non-bank PA-CBs existing as of the circular date must register with the Financial Intelligence Unit-India (FIU-IND) as a prerequisite for seeking RBI authorization.

**tech**

### Major takeaways from RBI's cross-border guidelines

- Applicants shall** have a minimum net worth of Rs 15 crore at the time of submission, and Rs 25 crore by March 31, 2026.
- Companies awaiting** Payment Aggregator licence need to inform RBI within 60 days about existing PA-CB activity. Explicit approval from the regulator needed to continue the service.
- All PA-CBs shall** register themselves with the Financial Intelligence Unit-India (FIU-IND).
- Maximum value per unit of goods and services sold or purchased shall be Rs 25 lakh.**
- PA shall** be responsible for undertaking customer due diligence of merchants.

- Non-bank PA-CBs existing as of the circular date must apply to the RBI for authorization by April 30, 2024. They are allowed to continue their services until the RBI decides on their application.
- **If the value of goods or services imported exceeds ₹2.5 lakh per unit**, the PA-CB must conduct due diligence on the buyer.
- Customer due diligence should be undertaken by the merchant, such as directly onboard Indian merchants, e-commerce marketplaces, or entities providing PA services. Proceeds from the Export Collection Account (ECA) shall be settled only in the account of such merchants.
- **Existing non-bank PA-CBs unable to comply with the net worth requirement** or fail to apply for authorization within the stipulated time frame shall wind up PA-CB activity by July 31, 2024.
- The circular notes that Authorized Dealer (AD) Category-I banks do not require separate approval for PA-CB activity.

### Conclusion

- These regulations aim to streamline and regulate cross-border payment activities, ensuring compliance with due diligence and financial criteria for entities involved in facilitating such transactions.



## **GST Amnesty Scheme**

### Context

- The Finance Ministry introduced the GST Amnesty Scheme to address the concerns of taxpayers who missed the appeal deadline for Goods and Services Tax (GST) demand orders.

### Key Highlights of the GST Amnesty Scheme

#### Provisions for Eligible Taxpayers

- The scheme is open until January 31, 2024, **allowing eligible taxpayers a specific timeframe to file appeals beyond the original deadline.**
- Taxpayers can submit appeals even if they missed the original deadline of March 31, 2023, providing them with a more flexible timeline for resolving tax disputes.
- Entities are **now required to pre-deposit 12.5% of the tax demand, up from the previous 10%**, possibly indicating an effort to ensure a more substantial commitment from taxpayers seeking benefits.
- The scheme offers specific benefits, including exemptions for female employees earning less than Rs. 25,000, a provision for one late payment of Rs. 1,000 for each return, and a one-time opportunity for non-filers to catch up on their GST filings.

#### Positive Impact and Expert Views

- Taxation experts and professionals view the scheme positively, considering it a crucial lifeline for individuals who missed the appeal

deadline due to administrative errors or unforeseen circumstances.

- The initiative is expected to encourage improved compliance among taxpayers, fostering better cooperation with tax authorities.
- The scheme aims to provide a more efficient mechanism for dispute resolution, streamlining the appeal process.
- The streamlined appeal process is anticipated to reduce the burden on the legal system, leading to fewer prolonged litigations, benefiting both taxpayers and the tax administration.

### Conclusion

- The GST Amnesty Scheme appears to be a well-thought-out measure to address the specific challenges faced by taxpayers in meeting appeal deadlines. It reflects a collaborative effort between the government and taxpayers, with the potential to streamline dispute resolution processes and improve overall compliance in the GST system.



## **Vadhvan Port**

### Context

- The Vadhavan Port project holds significant potential for India's maritime trade and economic growth.



### About the VadHAVAN Port project

- **Located in Maharashtra's Palghar district**, the port's proximity to Mumbai and its ability to handle large container vessels will bolster trade efficiency.
- With a projected capacity of 254 million tonnes annually, it's poised to become **one of the world's largest container ports**. This allows for economies of scale and reduced logistics costs.
- **Dedicated rail and road links to the hinterland and integration** with the Western Dedicated Freight Corridor ensure seamless movement of goods, enhancing trade efficiency.
- **Beyond commerce, it enhances India's maritime security and geopolitical standing in the Indian Ocean Region**, fostering stronger trade relations with Asian and African countries.
- Expected to generate local employment opportunities and contribute significantly to the socio-economic development of the region.
- **Embracing green practices through the use of renewable energy sources**, provision of green fuel to ships, and measures to prevent pollution and preserve biodiversity.
- Projected to be completed by 2027, signalling a transformative phase in India's maritime trade and economic landscape.

### Conclusion

- The VadHAVAN Port project symbolizes India's vision for a modern, efficient, and environmentally conscious maritime infrastructure, poised to catalyze economic growth while prioritizing sustainability.

## **Baler Machine**

### Context

- Baler machines play a crucial role in managing stubble and crop residue, particularly in regions like Punjab, where the practice of stubble burning has been a significant environmental concern.

### Key Highlights

#### Role of Baler Machines

- **Stubble Compression:** Balers are designed to compress crop residue, particularly stubble, into compact and manageable bales. This compression facilitates easy handling, transportation, and subsequent utilization or disposal of the stubble.
- **Reduction of Burning:** One of the primary objectives of using baler machines is to reduce the practice of stubble burning. By collecting and compressing the residue, farmers can avoid the environmental hazards associated with burning, such as air pollution and the release of harmful particulate matter.
- **Efficient Field Preparation:** Baler machines contribute to efficient field preparation for the next crop cycle. Once the stubble is compressed into bales, farmers can quickly plough the fields, making it easier to sow the next crop without the need to contend with residual stubble.

### Challenges and Limitations

- **Cost Barrier:** The cost of baler machines, inclusive of associated equipment like rakes and cutters, poses a significant financial barrier for many farmers. Despite subsidies, the upfront investment can be challenging, particularly for small-scale or economically constrained farmers.
- **Limited Availability:** The current number of operating balers in Punjab is insufficient to cover a substantial portion of the rice fields. As a result, only a fraction (15-18%) of the total rice field area can be managed using available baler machines.
- **Operational Constraints:** Baler machines are weather-dependent, and their operational efficiency is influenced by climatic conditions. Operating for about 45 days, these machines are constrained by weather patterns, potentially limiting their impact during specific times of the year.

### Impact and Future Prospects

- **Environmental Impact:** The adoption of baler machines contributes to a significant reduction in air pollution, especially during the stubble-burning season. This shift towards more sustainable residue management

practices aligns with environmental conservation efforts.

- **Increased Adoption:** Over the years, there has been a gradual increase in the adoption of baler machines, especially with the support of subsidies provided under the Centre's Crop Residue Management scheme. This indicates a positive trend towards recognizing the benefits of these machines in addressing stubble management issues.
- **Need for Expansion:** To make a more substantial impact on the reduction of stubble burning, there is a pressing need to expand the availability of baler machines. Government initiatives and policies supporting the widespread adoption of these machines, coupled with increased awareness among farmers, are crucial for achieving this expansion.

#### Conclusion

- While baler machines offer an effective alternative to stubble burning, addressing the challenges of cost, limited availability, and operational constraints is crucial to maximizing their impact in managing stubble in Punjab.

## Insurance Surety Bond

#### Context

- The National Highways Authority of India (NHAI) introducing Insurance Surety Bonds as a financial assurance method for bidders in the road infrastructure sector.

#### Key Highlights

- The **shift from traditional Bank Guarantees to Insurance Surety Bonds** showcases a willingness to explore new financial instruments, potentially reducing costs and improving liquidity for bidders.
- Collaboration among NHAI, insurance companies like SBI General Insurance and AON India Insurance, and industry associations like the Highway Operators Association of India (HOAI) is crucial. Such partnerships foster innovation and pave the way for smoother implementation.

- **Issuing Insurance Surety Bonds at a significantly lower rate of 0.25% without requiring margin money from Concessionaires can lead to substantial cost savings**, making the bidding process more attractive for the entities involved.
- By providing an alternative to Bank Guarantees, this initiative can **stimulate greater private sector participation in infrastructure projects**, potentially diversifying the sources of investment in the road sector.
- The recognition by the Ministry of Finance reinforces the credibility of Insurance Surety Bonds, aligning them with Bank Guarantees for all government procurements. This recognition can streamline processes and boost investor confidence.
- **Strengthening the national highway infrastructure and encouraging economic development** through innovative financial strategies is commendable. It can create a ripple effect, potentially benefiting various sectors and contributing to overall economic growth.

#### Conclusion

- NHAI's acceptance of Insurance Surety Bonds is a strategic move with far-reaching positive effects on both the industry and the broader Indian economy. It addresses key financial challenges, encourages private participation, and sets a benchmark for innovative financing in the road infrastructure sector.



## Pusa-2090

#### Context

- Pusa-2090 holds promise in addressing stubble burning challenges posed by Pusa-44, offering a potential solution to environmental concerns in rice cultivation.

#### Details

- **Pusa-2090, developed by the Indian Agricultural Research Institute**, has obtained official approval for cultivation in Delhi and Odisha.

- The rice variety is increasingly favoured by farmers in Punjab, indicating growing popularity and adoption in the region.

#### **Key Features of Pusa-2090**

- **Pusa-2090 has a shorter duration of 125-130 days but boasts a higher yield of 38-40 quintals per acre compared to Pusa-44.**
- It has a stronger stem, providing better resistance to lodging, which is the bending or breaking of plant stalks due to wind or rain.
- **Pusa-2090 exhibits a higher milling recovery and head rice ratio than Pusa-44, resulting in more edible rice grains from the harvested paddy.**

#### **Benefits for Farmers and the Environment**

- **The shorter duration of Pusa-2090 reduces water requirements for irrigation** by approximately 25%, contributing to water conservation and potentially lowering cultivation costs.
- **The shorter duration allows more time for field preparation and sowing of the subsequent wheat crop**, potentially improving wheat yield and quality.
- **Pusa-2090 minimizes the need for stubble burning**, a significant source of air pollution and greenhouse gas emissions in northern India. This also helps maintain soil quality and fertility, promoting the long-term sustainability of rice-wheat cropping systems.

#### **Environmental Impact**

- **By reducing stubble burning, Pusa-2090 contributes to decreased air pollution and greenhouse gas emissions**, addressing environmental concerns in northern India.
- The avoidance of stubble burning helps prevent soil degradation, preserving soil quality and fertility for sustainable agricultural practices.

#### **Conclusion**

- Pusa-2090 is positioned as a promising and eco-friendly alternative to Pusa-44, offering a range of benefits such as shorter duration, higher yield, improved milling quality, lodging resistance, and positive environmental impact. The expectation is that Pusa-2090 will become widely adopted, contributing to both

food security and environmental health in India.



## **National Coal Index**

### **Context**

- India is witnessing a rise in coal prices after months of decline, as the demand for coal increases in the country.

### **Details**

- The National Coal Index (NCI), which reflects the changes in coal prices across various sources, increased by 3.83 points in September 2021, marking the first rise since April 2021.

### **Factors Driving Coal Price Increase**

- **Global Market Dynamics:** Global coal prices surged due to disruptions in major coal-producing countries and increased demand from countries like China. Supply chain disruptions and environmental regulations impacted production and availability, influencing import prices.
- **Seasonal Demand:** The rise in coal prices also reflects heightened demand within India due to the upcoming festive season and winter. This increased demand correlates directly with higher energy consumption, particularly in the power sector.
- **Supply Chain Challenges:** The disruptions in global supply chains, coupled with domestic factors, might have led to increased reliance on imports, further impacting coal prices.

### **Implications for the Coal Sector**

- **Revenue Boost:** The price hike benefits domestic coal producers, particularly those engaged in commercial mining. This might incentivize more private players to invest in coal exploration and development, potentially enhancing production capacity.
- **Cost Burden:** However, higher coal prices pose challenges for industries reliant on coal as a primary raw material or energy source. Increased production costs can affect their profitability, potentially leading to higher consumer prices for goods and services.

### **Impact on the Economy**

- **Power Sector Challenges:** The escalating coal prices affect the power sector, which is crucial for sustaining economic activities. The directive to maintain coal stock aims to avert disruptions in power supply, but increased costs could eventually translate into higher electricity prices for consumers.
- **Environmental Concerns:** Rising coal prices may hinder efforts to transition towards cleaner energy sources like renewables. India's commitment to reducing carbon emissions necessitates a shift away from fossil fuels. Higher coal prices might impede progress towards this goal.

#### Future Considerations

- India needs to balance its energy needs with environmental commitments. It requires strategies to mitigate coal dependency while accelerating the adoption of renewable energy sources.
- Government policies focusing on diversifying the energy mix, incentivizing renewable energy investments, and addressing infrastructure challenges could mitigate the impact of rising coal prices.

#### Conclusion

- The implications of escalating coal prices in India are multifaceted, impacting various sectors and the broader economy. Navigating this scenario requires a delicate balance between energy security, economic sustainability, and environmental responsibility.



## **Sustainable Urban Development And Service Delivery Programme**

#### Context

- The Government of India has entered into a significant agreement with the Asian Development Bank (ADB) to facilitate its urban reform agenda.

#### Key Highlights of the Agreement

- The Government of India has signed a policy-based loan agreement with the Asian

Development Bank (ADB) amounting to 400 million dollars.

- The loan is intended to **support India's urban reform agenda** under the Sustainable Urban Development and Service Delivery Programme.
- The **primary objectives of the programme are:**
  - Creating high-quality urban infrastructure.
  - Improving service delivery in urban areas.
  - Promoting efficient governance systems.
- **The programme is aligned with the Government of India's urban sector strategy**, with a specific focus on urban reforms to enhance the livability of cities and contribute to economic growth.
- The programme emphasizes planned urbanization by addressing legal, regulatory, and institutional aspects. It aims to create a conducive environment for sustainable urban development.
- **The initiative includes capacity-building efforts directed at Urban Local Bodies.** This implies that there will be training and development activities to enhance the capabilities of local urban governance entities.
- The programme also includes a component focused on raising awareness within the community. This suggests an emphasis on involving and informing the public about the urban reforms and their benefits.

#### Conclusion

- The collaboration between the Government of India and the Asian Development Bank is geared towards comprehensive urban reforms, with a focus on improving infrastructure, service delivery, and governance in urban areas. The planned approach involves legal and institutional changes, capacity building, and community engagement to achieve sustainable urban development.

## Pamban Bridge

### Context

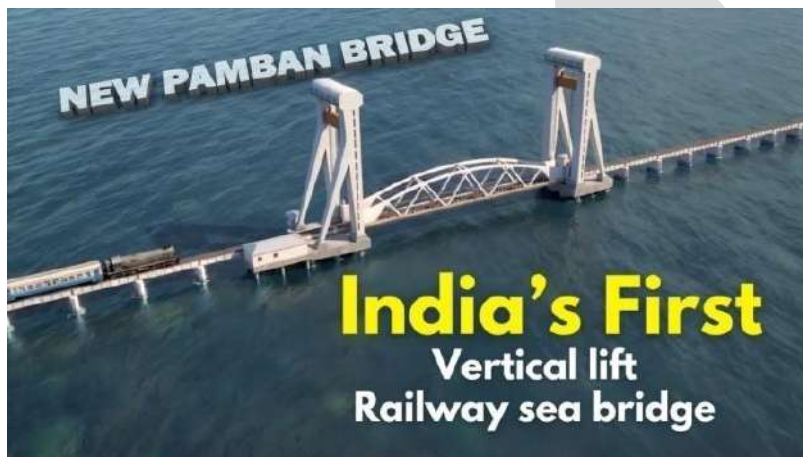
- The Pamban Bridge, India's first vertical-lift railway sea bridge, stands as a marvel of engineering connecting Rameswaram on Pamban Island to Mandapam on the mainland in Tamil Nadu.

### Key points about Pamban Bridge

- The total length of the bridge is 2.078 kilometres.
- The new Pamban Bridge is being constructed parallel to the old Pamban Bridge, which was India's first sea bridge, opened in 1914.
- The construction is carried out by Rail Vikas Nigam Limited.

### Features

- **Vertical Lift Facility:** The most distinctive feature is its vertical lift facility, a departure from the horizontal lift technology of the old bridge. The vertical lift span can be raised to allow boats to pass underneath. Sensors at each end control the vertical lift, ensuring precision.
- **Operational Mechanism:** The vertical lift span is electromechanically controlled and interlocked with the train control system. To accommodate shipping traffic, rail traffic is temporarily stopped while the navigational span is lifted.
- **Dimensions and Clearances:** The Bridge is designed to provide a full horizontal length of 72.5 meters for navigation. It is 3 meters higher than the old bridge. The navigational air clearance is 22 meters above mean sea level, ensuring sufficient height for boats to pass.
- **Design and Future-Proofing:** The Bridge is designed for a double railway line and future electrification, ensuring adaptability to evolving transportation needs.



### About Pamban Island

- Pamban Island is situated between India and Sri Lanka in the Gulf of Mannar. It is in the Ramanathapuram district of Tamil Nadu.
- It is the largest island in Tamil Nadu by area.
- The chain formed by Pamban Island, Adam's Bridge shoals, and Mannar Island of Sri Lanka separates Palk Bay and the Palk Strait in the northeast from the Gulf of Mannar in the southwest.

### Conclusion

- The new Pamban Bridge, with its innovative vertical lift technology, not only enhances connectivity but also stands as a modern engineering marvel in India.



## Coconut Development Board

### Context

- The Coconut Development Board (CDB) has launched a new call centre called "Hello Naariyal" to help farmers with coconut harvesting and plant management operations.

### Details

- The call centre is based in Kochi, Kerala. The service will also be extended to other major coconut-growing States of Tamil Nadu, Andhra Pradesh and Karnataka through the respective unit offices of the Board.

- The farmers get access to quality and timely services for their coconut trees; the call centre also helps in creating employment opportunities for rural youth.

### Coconut Development Board (CDB)

- It is a **statutory body established under the Union Ministry of Agriculture and Farmers Welfare**, for the integrated development of coconut cultivation and industry in the country.
- The CDB is responsible for implementing various programmes for increasing the production and productivity of coconut, promoting the processing and marketing of coconut and its products, providing technical and financial assistance to coconut farmers and entrepreneurs, conducting research and development activities on coconut, and disseminating information and technology on coconut.
- **The CDB has its headquarters at Kochi in Kerala** and regional offices at Bangalore in Karnataka, Chennai in Tamil Nadu and Guwahati in Assam.

### Functions of the Board

- **The board oversees comprehensive development initiatives for the coconut industry**, including financial support and the adoption of modern technologies for cultivation and processing.
- It recommends and enforces standards, grades, and measures to secure incentive prices, while also regulating imports and exports of coconut and its products.
- **The board provides financial assistance and implements schemes to encourage expansion**, increase production, and improve the quality and yield of coconut.
- It supports and finances research on coconut and its products, collects statistical data, and engages in publicity activities, including publishing materials to disseminate information and promote the industry.

### Conclusion

- The Coconut Development Board (CDB) launched "Hello Naariyal," a call centre in Kochi, aiding farmers in coconut harvesting and plant management. Operating nationally,

it promotes rural employment, aligning with CDB's commitment to advancing coconut cultivation, implementing quality standards, providing financial aid, fostering research, and disseminating industry insights.

## **Investor Risk Reduction Access Platform**

### Context

- The Investor Risk Reduction Access (IRRA) platform is a new initiative by the Indian stock exchanges to reduce risks faced by investors due to technical glitches.

### Details

- The Investor Risk Reduction Access (IRRA) platform is a collaborative effort by major Indian stock exchanges like the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) **to address the challenges posed by technical glitches in the stock market's trading systems.**
- The platform will provide investors with an opportunity to close open positions and cancel pending orders in case of disruption at the stock brokers' end.

### Purpose and Need

- **Technology Dependency:** The stock market heavily relies on technology for trading and transactions. With this dependence comes an increased risk of technical glitches that can disrupt trading activities.
- **Risk to Investors:** These disruptions pose risks to investors, particularly when they have open positions or pending orders in the market, especially during volatile market conditions.

### Functionality

- **Invocation and Operation:** The IRRA platform can be invoked by trading members or stock exchanges when they encounter technical glitches impacting their ability to serve clients.
- **Monitoring and Activation:** Stock exchanges continuously monitor their systems and can initiate IRRA without specific requests, ensuring rapid response during disruptions.
- **Investor Access:** Investors can securely access the IRRA platform using their Unique

Client Code (UCC) or PAN number. Authorization is granted via one-time passwords sent to their registered mobile numbers and email IDs.

#### **Benefits for Investors**

- **Order Management during Disruptions:** The IRRA platform allows investors to view and cancel pending orders, close open positions across various segments and exchanges when technical disruptions occur.
- **Alternative Access:** It provides a dedicated web URL and mobile application, offering an alternative platform for managing investments during unforeseen contingencies.
- **Migration and Return:** Trading members can request migration to the IRRA platform during market hours in case of technical issues. However, there are limitations on the number of allowed reverse migrations within a trading day.

#### **Conclusion**

- The IRRA platform serves as a safety net for investors during technical disruptions in trading systems. It empowers them to manage their positions and orders, ensuring certain limitations and operational guidelines are in place to maintain market integrity and stability.



## **Global Digital Public Infrastructure**

#### **Context**

- The Prime Minister unveiled two new initiatives led by India at the Virtual G20 Leaders' Summit on 22nd November 2023. These are the Global Digital Public Infrastructure Repository and a Social Impact Fund to support the growth of Digital Public Infrastructure (DPI) in the Global South.

#### **Global Digital Public Infrastructure Repository (GDPIR)**

##### **Purpose and Creation**

- The GDPIR is a project initiated by the Ministry of Electronics and Information Technology (MeitY).
- Its primary purpose is to serve as a comprehensive resource hub, gathering

essential lessons and expertise from G20 member countries and guest nations.

#### **Objectives**

- **Bridge the knowledge gap** in the design, construction, deployment, and governance of Digital Public Infrastructures (DPIs). Showcase information in a standardized format from countries and organizations that have successfully developed DPIs at scale.

#### **Contents and Features**

- The repository features 54 DPIs from 16 countries, including those from India.
- It includes elements such as maturity scales, source codes (where available), and governance frameworks.
- **Notable DPIs from India included in GDPIR:** Aadhaar, Unified Payments Interface (UPI), DigiLocker, Umang, eSanjeevani, API Setu, Co-WIN, Government e-marketplace, Diksha, E-Hospital, Poshan Tracker, and Ayushman Bharat Digital Mission (ABDM).

#### **Definition of Digital Public Infrastructure (DPI)**

- DPI encompasses foundational elements or frameworks such as digital identification, payment infrastructure, and data exchange solutions. These components are crucial for countries to provide essential services to their citizens, promote digital inclusion, and enhance lives.

#### **Social Impact Fund (SIF)**

##### **Nature and Purpose**

- The Social Impact Fund (SIF) is conceptualized as a **government-led multistakeholder initiative**.
- Its primary goal is to expedite the implementation of DPIs in the global south.

##### **Financial Support and Assistance**

- The fund provides financial support to offer **both technical and non-technical assistance to countries** in the development of DPI systems.
- This assistance is aimed at supporting countries in overcoming challenges and hurdles in the establishment of robust DPIs.

##### **Multistakeholder Participation**

- SIF serves as a platform for various stakeholders, including governments,

international organizations, and philanthropic entities.

- These stakeholders can contribute to the fund, fostering collaboration to accelerate the achievement of Sustainable Development Goals (SDGs) in Low- and Middle-Income Countries (LMICs) through the implementation of DPIs.

#### India's Commitment

- India has pledged an initial commitment of \$25 million to the Social Impact Fund.
- This financial contribution demonstrates India's dedication to supporting the

development of DPIs globally and advancing the SDGs.

#### Conclusion

- The GDPIR and SIF initiatives reflect India's commitment to sharing knowledge and resources to foster the development and implementation of Digital Public Infrastructures on a global scale, with a focus on promoting inclusivity and achieving sustainable development goals.



## Rapid Innovation and Startup Expansion

### Context

- The Atal Innovation Mission (AIM) has launched a new accelerator program called Rapid Innovation and Startup Expansion (RISE) to support startups and small to mid-sized enterprises (SMEs) working on circular economy technologies and solutions in India and Australia.

### Details

- The Rapid Innovation and Startup Expansion (RISE) Accelerator program, launched by AIM (Atal Innovation Mission), NITI Aayog, in collaboration with the Government of India and Australia's national science agency CSIRO, is aimed at supporting circular economy startups and small to mid-sized enterprises (SMEs) from both countries.

### Key points from the announcement:

- **Program Duration and Focus:** The RISE Accelerator program spans nine months. It focuses on circular economy technologies and solutions, emphasizing environmental sustainability and addressing shared challenges in India and Australia.
- **Strategic Partnership:** Reinforces the strategic partnership between India and Australia. Strengthens diplomatic ties and promotes collaborative efforts in various domains.
- **Bilateral Collaboration:** A multi-year bilateral effort between India and Australia. Emphasizes shared challenges in both economies, particularly in environmental and climate technology. Provides a platform for startups to innovate solutions on a global scale.
- **Supporting Circular Economy:** Aligns with CSIRO's Circular Economy for Missions initiative. Focuses on creating a sustainable future by encouraging waste innovation and designing materials and products with a zero-waste mindset.
- **Financial Support:** Participating startups may be eligible for up to INR 40,00,000 in non-equity grants. Provides financial support to aid validation and adaptation of technology and research overseas.

### Program Details

- Assists startups in navigating early steps in a new region.
- Supports fast-tracking connections to partners, customers, and talent.
- Aims to build credibility for international market success.

### Circular Economy

- An economic system aiming to eliminate waste and keep resources in use for as long as possible.
- **Based on three principles:** designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.
- Benefits include reducing greenhouse gas emissions, saving natural resources, creating new jobs, and enhancing innovation.



### Target Participants

- Targets startups and SMEs with mature technologies.
- Focuses on those with a desire to expand between India and Australia.
- Calls for innovative business models, technologies, and resource ingenuity supporting the transition to a circular economy.

### Conclusion

- By bringing together startups from both countries and providing them with resources, mentorship, and grants, the RISE Accelerator program aims to foster innovation, encourage collaboration, and contribute to the advancement of sustainable solutions in the circular economy domain.



## **International Container Transshipment Port**

### Context

- India to Develop International Container Transshipment Port (ICTP) at Galathea Bay, Great Nicobar Island.

### Details

- The Union Minister for Ports, Shipping and Waterways visited the site of the proposed **International Container Transshipment Port (ICTP) at Galathea Bay, Great Nicobar Island**.
- The ICTP is a transformative project with a total estimated cost of about ₹44,000 Crores. It is strategically important for the country and crucial for the economic and infrastructural development of the entire region.
- **"In-Principle" approval granted by the Department of Expenditure, Ministry of Finance**, for holistic development on the island and the ICTP project.

### Benefits of the ICTP Project

- The project will make India a self-assured and self-reliant Nation.
- It will support the economic development of the country.
- It will attract more transshipment cargo to Indian ports.
- It will accrue significant benefits such as forex savings, foreign direct investment, increased economic activity at other Indian Ports, enhanced logistics infrastructure, employment generation, and increased revenue share.
- Positioned within 40 nautical miles from international shipping trade routes.
- **Offers a natural depth of over 20 meters**, ideal for larger vessels.
- Aimed at handling transshipment cargo from various ports in proximity, including Indian ports.

### Project Timeline

- The proposed facility is envisaged to be developed in four phases.
- Phase 1 is proposed to be commissioned in the year 2028.
- The ultimate stage of development is expected to be completed by 2058.

### Visionary Approach

- **Aligned with Maritime India Vision 2030 and Amrit Kaal Vision 2047**, emphasizing capacity augmentation, port development, and infrastructure modernization.
- Aimed at modernizing and enhancing capacity at existing ports to bolster economic activities and improve efficiency.

### Tourism and Infrastructure Development

- Considering the development of the Indira Point area on Great Nicobar Island as a tourism destination.
- Extension of the jetty to accommodate larger vessels, fostering increased passenger and cargo movement between Great Nicobar and other islands.

### Conclusion

- The initiatives reflect a comprehensive approach to port development, infrastructure enhancement, and economic growth in the region, aligning with the government's broader vision for maritime and economic development.



## Millets Festival

### Context

- The ASEAN-India Millet Festival 2023, held in Indonesia from November 22nd to 26th, 2023, aimed to raise awareness about millet and create a market for these nutritious and sustainable grains in the ASEAN region.

### Key Highlights of the festival

- **Collaboration between ASEAN and India:** The festival brought together representatives from ASEAN countries and India to discuss collaboration in various areas related to millets, including knowledge transfer, seed exchange, market expansion, and training.
- **Millet-centric exhibition:** The exhibition featured participation from Indian Farmer Producer Organizations (FPOs), start-ups, and chefs who showcased unique millet-based products such as cookies, namkeen, khakhra, cakes, and more.
- **Live cooking workshops:** Celebrity chefs from India and Indonesia presented delicious millet-based dishes, demonstrating the culinary potential of these grains.
- **Panel discussions:** Experts from diverse ASEAN nations discussed initiatives aimed at mainstreaming millets as part of the International Year of Millets (IYM) 2023.
- **Promoting millets for a healthier future:** The festival highlighted the nutritional benefits of millets and their potential to address global hunger and nutrient deficiencies.

### Key takeaways from the festival

- Millets are a sustainable and climate-resilient crop that can play a significant role in addressing food security challenges.
- Collaboration between ASEAN and India is crucial for promoting the adoption and cultivation of millets in the region.
- There is a growing market for millet-based products, offering opportunities for farmers and entrepreneurs.

### Conclusion

- The ASEAN-India Millet Festival 2023 was a successful event that helped raise awareness about the potential of these ancient grains. By working together, ASEAN and India can make millet a staple crop in the region, contributing to food security, sustainable agriculture, and healthier diets.\*\*



### Millets

- Millets are a **group of small-seeded grasses** that are widely grown around the world as cereal crops or grains for fodder and human food.
- They are **resilient crops that can be grown in harsh environments**, making them an important food source for people in many parts of the world.
- **They are a good source of protein, fibre, vitamins and minerals.** They are also a gluten-free grain, which makes them a good option for people with celiac disease or gluten intolerance.

### Different types of millets:

- **Pearl millet:** This is the most widely grown millet in the world. It is a tall, slender grain with a pearly white colour. Pearl millet is a good source of protein, iron, and vitamin B1.
- **Finger millet:** This is a small, round grain with a purple or brown colour. Finger millet is a good source of calcium, iron, and vitamin B6.
- **Foxtail millet:** This is a small, yellow grain with a slightly sweet flavour. Foxtail millet is a good source of protein, fibre, and iron.
- **Proso millet:** This is a small, red grain with a slightly nutty flavour. Proso millet is a good source of protein, fibre, and vitamin B2.
- **Barnyard millet:** This is a small, white grain with a slightly chewy texture. Barnyard millet is a good source of protein, fibre, and iron.

3.18 SNIPPETS



### Equity Funds

- Equity funds are a type of mutual fund that primarily invests in stocks of companies. They are also known as stock funds or growth funds.
- There are many different types of equity funds, but they can be broadly classified into two categories:
- Actively managed funds: These funds are managed by a fund manager who tries to outperform the market by picking stocks that they believe will outperform the overall market.
- Passively managed funds: These funds track a specific market index, such as the S&P 500. Passive funds are designed to replicate the performance of the index, rather than trying to beat it.
- Equity funds offer higher return potential, diversification, and liquidity to investors' portfolios.
- Investing in equity funds also involves market and company risk, with the potential for value fluctuations, and fees can diminish overall returns.

APTI PLUS



### Onattukara Sesame

- Onattukara sesame is a variety of sesame seeds native to the Onattukara region of Kerala.
- It has a higher oil content than other varieties of sesame, making it ideal for oil production.
- It is known for its high quality and unique aroma and is used in a variety of Ayurvedic medicines and culinary dishes.
- It is also a good source of vitamins and minerals, including vitamin E, calcium, and magnesium.
- The GI tag for Onattukara sesame has helped to increase the demand for the product and its price.

APTI PLUS



### Krishi 24/7

- Krishi 24/7 utilizes AI to automatically scan and analyze agricultural news articles across multiple languages.
- This AI-powered solution enables near real-time monitoring of agricultural news, ensuring prompt identification of relevant events and developments.
- Krishi 24/7 creates alerts based on the extracted information, facilitating timely notifications to relevant authorities and supporting swift actions by the Department of Agriculture and Farmers Welfare for farmers' protection and sustainable agricultural practices.

APTI PLUS



### Dekho Apna Desh Initiative

- The Union Minister of Ports, Shipping and Waterways has launched the domestic sailing of the first International Cruise Liner, 'COSTA SERENA,' in Mumbai, as part of the 'Dekho Apna Desh' initiatives.
- Dekho Apna Desh is a scheme launched by the Ministry of Tourism in 2020 to boost domestic tourism in India.
- Under this scheme, the government aims to develop and promote 50 tourist destinations across India, covering various themes such as culture, heritage, wildlife, adventure, wellness, etc.

APTI PLUS

### 3.19 1 MAINS & 5 MCQs

**Q1. How can crop residue be repurposed into sustainable solutions for agriculture and the environment? What innovative methods exist for transforming crop waste into valuable resources? How can we maximize the benefits of crop residue utilization while minimizing environmental impact?**

#### Answer

- Crop residue, often seen as waste, holds immense potential as a valuable resource for both agriculture and the environment. Instead of burning it, contributing to air pollution and greenhouse gas emissions, we can embrace innovative methods to transform this biomass into sustainable solutions.

#### Innovative Methods for Crop Residue Utilization

- **Composting:** Converting residue into nutrient-rich compost improves soil health, reduces reliance on chemical fertilizers, and promotes water retention. Techniques like vermicomposting and windrow composting offer efficient options.
- **Biochar:** Heating residue in a low-oxygen environment creates biochar, a carbon-rich material. It enhances soil fertility, reduces greenhouse gas emissions, and improves water filtration.
- **Biogas:** Anaerobic digestion of residue breaks it down into biogas, a clean and renewable energy source. This can power farms, rural communities, and even generate electricity for the grid.
- **Building materials:** Residue can be processed into bricks, panels, and insulation for eco-friendly construction. This reduces dependence on conventional materials and promotes sustainable housing.
- **Animal feed:** Pretreated residue can be used as nutritious fodder for livestock. This reduces reliance on imported feed, supports local production systems, and promotes animal welfare.

#### Maximizing Benefits, Minimizing Impact

- **Field-based solutions:** Techniques like mulching and direct seeding minimize residue burning and promote soil health. These

methods also suppress weeds and retain moisture, improving crop yields.

- **Decentralized processing:** Setting up local biodigester plants and composting facilities empowers farmers and reduces transportation costs. This creates rural jobs and fosters a circular bioeconomy.
- **Policy and incentives:** Governments can promote residue utilization through subsidies, tax breaks, and research grants. Additionally, regulations against burning and awareness campaigns can encourage responsible waste management.
- **Technological advancements:** Research in residue pretreatment, fermentation processes, and biomaterial development can further enhance efficiency and unlock new possibilities for residue valorization.

#### Environmental Impact Minimization

- **Nutrient cycling:** Prioritizing residue composting and biodigestion ensures nutrient retention within the farm ecosystem, reducing reliance on external inputs and minimizing environmental pollution.
- **Biodiversity:** Integrating crop residue management with habitat restoration promotes beneficial insects, pollinators, and soil microbes. This strengthens the ecological balance and supports a thriving farm ecosystem.
- **Carbon sequestration:** Biochar production and residue incorporation into soil increase carbon storage, mitigating climate change impacts. This approach can help farms transition towards carbon neutrality.
- By embracing innovative methods, fostering collaboration, and prioritizing environmental responsibility, we can turn crop residue from a challenge into a key driver for sustainable agriculture and a healthier planet. Let's move

beyond burning and embrace the potential of this abundant resource to create a future

where food production and environmental well-being go hand-in-hand.

**Q2. Consider the following statements in the context of the Onattukara sesame:**

1. Onattukara sesame is a variety of sesame seeds native to the Onattukara region of Kerala.
2. It has a higher oil content than other varieties of sesame, making it ideal for oil production.
3. It is known for its high quality and unique aroma and is used in a variety of Ayurvedic medicines and culinary dishes.
4. It is also a good source of vitamins and minerals, including vitamin E, calcium, and magnesium.

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

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

**Q3. Why “Baler Machines” are frequently featured in recent news articles and discussions?**

- A. Due to their role in urban waste management
- B. Addressing water scarcity in agricultural regions
- C. Mitigating soil erosion in highland farming areas
- D. Managing stubble burning and crop residue

**Q4. Which organization releases The State of Food and Agriculture (SOFA) report annually?**

- A) World Health Organization (WHO)
- B) Food and Agriculture Organization (FAO)
- C) International Monetary Fund (IMF)
- D) United Nations Educational, Scientific and Cultural Organization (UNESCO)

**Q5. Case Study**

XYZ Payment Aggregator is a leading platform offering cross-border payment solutions to global merchants. They recently expanded their services to Southeast Asia, aiming to provide seamless payment processing across multiple currencies and channels. They faced a surge in transaction volumes from merchants in Southeast Asia. However, they encountered an issue with the processing of transactions in certain local currencies, leading to delayed settlements and inconveniences for their clients.

**Q5. What action did XYZ Payment Aggregator take to mitigate the issue they encountered in processing transactions in Southeast Asia?**

- A) Implemented stricter transaction limits
- B) Enhanced integration of local payment methods
- C) Restricted cross-border transactions
- D) Lowered merchant fees

**Q6. Consider the following statements in the context of the Indian Cement Industry:**

1. India has the fourth-largest cement sector globally.
2. Southern and Eastern regions contribute over 70% of the total installed capacity.
3. The top 10 producers hold around 85% of the total installed capacity.

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

- A) Only one
- B) Only two
- C) All three
- D) None

**ANSWERS: 2) D, 3) D, 4) B, 5) B, 6) D**

## 4. DEFENSE & SECURITY

### 4.1 NATIONAL SECURITY STRATEGY

#### Context

- India is in the process of creating its first National Security Strategy (NSS).

#### Details

- The **National Security Council Secretariat (NSCS) is leading the initiative**, collaborating with various Central ministries and departments. The final step involves seeking Cabinet approval for the strategy.
- Multiple ministries have contributed inputs **covering a wide range of challenges, including traditional and non-traditional security concerns**. Ministers from relevant ministries are actively involved in the collaborative process.
- The goal is to **consolidate and address challenges unique to India**, developing strategies for immediate and near-future implementation. Resource allocation will be considered based on prevailing internal and global conditions.
- The strategy, once finalized, will be regularly updated to reflect emerging situations and new threat assessments.
- The document will be made public, although the timeline for completion remains undisclosed due to the sensitive nature of certain aspects.

**India's National Security Strategy typically focuses on the following key elements**

#### Non-Alignment and Strategic Autonomy

- India has historically followed a policy of non-alignment, which means it does not align itself with any major power blocs or military alliances. This approach allows India to maintain **flexibility in its foreign policy and pursue its national interests independently**.
- Strategic autonomy refers to India's commitment to **making decisions based on its national interests rather than being influenced by external pressures**. This

includes economic, political, and security decisions that are driven by the objective of safeguarding and promoting India's sovereignty.

#### Deterrence and Defense

- India maintains a robust conventional military capability to deter potential adversaries. This involves a well-equipped and trained army, navy, and air force capable of responding to a range of security threats.
- India's nuclear doctrine is based on a credible minimum deterrence posture**. It emphasizes a no-first-use policy, meaning that nuclear weapons will only be used in response to a nuclear attack on Indian Territory. The nuclear capabilities act as a deterrent against nuclear and conventional threats.

#### Counterterrorism

- India employs a combination of law enforcement, intelligence, and military measures to counter domestic terrorism**. This includes measures to prevent radicalization, improve intelligence gathering, and enhance the capacity to respond to terrorist incidents.
- Given the transnational nature of terrorism, **India collaborates with other countries and international organizations to counter-terrorism**. This involves sharing intelligence, participating in joint exercises, and advocating for international cooperation in forums like the United Nations.

#### Border Security

- Managing and securing borders with Pakistan (especially the Line of Control in Jammu and Kashmir) and China (primarily the Line of Actual Control) is a significant aspect of India's security strategy. This involves a **combination of diplomatic efforts, confidence-building measures, and a strong military presence in border regions**.
- India invests in improving border infrastructure to enhance surveillance,

mobility, and the overall capability to defend its borders effectively.

### Maritime Security

- India emphasizes **developing and maintaining a strong naval force to secure its maritime interests**. This includes protecting sea lanes, ensuring the security of offshore assets, and having the capability to respond to maritime threats.
- Given the vulnerability of coastal areas, India focuses on **enhancing coastal security measures** to prevent illegal activities such as smuggling and piracy.

### Economic Security

- **A strong and growing economy is seen as a key component of national security**. Policies are designed to promote economic growth, infrastructure development, and job creation.
- Ensuring a stable and secure energy supply is crucial. India works to diversify its sources of energy, invest in renewable energy, and secure access to strategic resources.

### Diplomacy

- **India actively engages in diplomatic efforts to build partnerships and alliances that align with its strategic interests**. This involves participating in regional and global forums, contributing to peacekeeping missions, and fostering bilateral relations.
- Managing relationships with neighbouring countries is a priority. Diplomatic efforts are aimed at resolving disputes, promoting

economic cooperation, and ensuring stability in the region.

### Cybersecurity

- India recognizes the importance of **securing critical infrastructure, including information technology systems, against cyber threats**. This involves implementing robust cybersecurity measures to protect government networks, financial systems, and other essential services.
- Given the global nature of cyber threats, India engages in international cooperation on cybersecurity. This includes sharing information, participating in joint exercises, and advocating for international norms and regulations in cyberspace.

### **Conclusion**

- India's development of a National Security Strategy is a multifaceted and comprehensive effort that involves input from various ministries and stakeholders. The focus is on addressing a wide range of security challenges, both traditional and non-traditional, and ensuring a dynamic and regularly updated strategy for the country's security objectives.



## 4.2 SHORT ARTICLES

### **Project Kusha**

#### Context

- India plans to deploy its indigenous long-range air defence system by 2028-2029 to enhance its defence capabilities.

#### About Project Kusha

- The long-range air defence system developed under Project Kusha by the Defense Research and Development Organisation (DRDO), aims to detect and destroy various threats, including stealth fighters, aircraft, drones,

cruise missiles, and precision-guided munitions, at ranges up to 350 km.

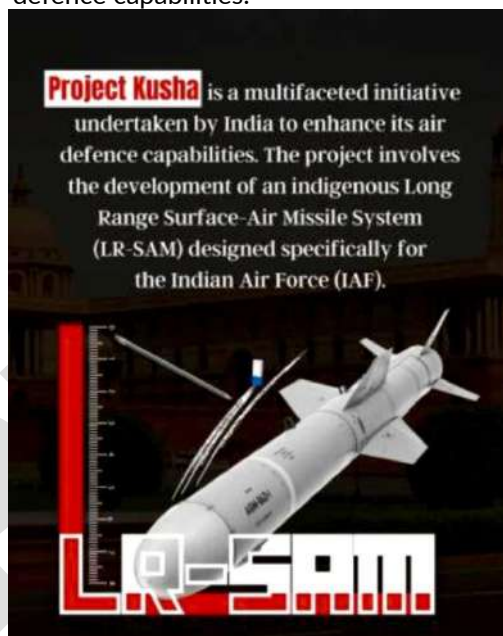
#### Technical Features and Capabilities

- Project Kusha's LR-SAM incorporates advanced long-range surveillance and fire control radars for detecting and tracking a variety of aerial threats. These radars play a crucial role in providing the necessary situational awareness to the missile system.

- It is equipped with different types of interceptor missiles, each designed for specific ranges – 150 km, 250 km, and 350 km. This capability allows it to engage threats at varying distances, providing a layered defence against different types of airborne threats.
- The LR-SAM's interception capabilities have been **compared to the Russian S-400 Triumph air defence system**, suggesting that it is on par with one of the most advanced and widely recognized air defence systems globally.
- It aims to provide reliable "area air defence," indicating its ability to cover substantial airspace and protect against multiple incoming threats simultaneously. This is crucial for defending against diverse threats such as aircraft, drones, cruise missiles, and precision-guided munitions.
- The allocated budget of Rs 21,700 crore for the procurement of the LR-SAM system indicates a substantial investment in developing and acquiring advanced defence technology. This investment reflects the government's commitment to bolstering national security through cutting-edge air defence capabilities.

#### Strategic and Operational Aspects

- Being designated as a "mission-mode" project underscores the **strategic importance attached to the development of the LR-SAM system**. This designation typically implies high-priority and accelerated development with a focus on meeting critical defence needs.
- The defence ministry's approval for the procurement of five squadrons of the LR-SAM system for the Indian Air Force at a significant cost emphasizes the government's commitment to enhancing the country's air defence capabilities.
- The **LR-SAM's integration with the Integrated Air Command and Control System (IACCS)** of the Indian Air Force highlights its role in contributing to a seamless and fully automated air defence network. This integration enhances the overall effectiveness of the country's air defence infrastructure.



#### Conclusion

- The LR-SAM system under Project Kusha is a comprehensive and technologically advanced solution that enhances India's air defence capabilities by integrating seamlessly with existing defence networks and demonstrating the ability to engage a diverse array of aerial threats, marking a crucial component of India's defence strategy.





## 15th India-Singapore Defence Policy Dialogue

### Context

- The 15th India-Singapore Defence Policy Dialogue, held in New Delhi on November 1, 2023, marked a significant milestone in the defence cooperation between the two countries.

### Key Agreements and Focus Areas

- **Both countries pledged to intensify service-to-service interactions**, encompassing joint exercises, training programs, and personnel exchanges. This initiative aims to enhance interoperability and strengthen military-to-military ties.
- An agreement was reached to augment the frequency and complexity of bilateral exercises, fostering joint operational capabilities and responsiveness.
- **Recognizing the growing importance of cybersecurity, India and Singapore are committed** to bolstering cooperation in this domain. This includes sharing critical information, conducting joint training, and enhancing capacity-building efforts.
- The dialogue emphasized collaboration in maritime security, encompassing counter-terrorism, anti-piracy measures, and disaster relief operations. This reflects a shared commitment to ensuring stability and safety in the maritime domain.
- **The two nations affirmed their intention to enhance collaboration in multilateral forums such as the ASEAN Regional Forum (ARF) and the Shangri-La Dialogue.** This underlines their commitment to addressing regional security challenges through collective efforts.

### Additional Discussions

- The participants exchanged views on the regional security landscape, with a particular focus on challenges posed by China and the evolving dynamics of the Indo-Pacific region.
- **Both sides reiterated their commitment to upholding a rules-based international order**, grounded in principles such as sovereignty, territorial integrity, political independence, and non-interference.

- The dialogue identified several areas for potential collaboration, including defence technology, logistics, humanitarian assistance and disaster relief. These areas represent avenues for further deepening the strategic partnership between India and Singapore.

### Conclusion

- The 15th India-Singapore Defence Policy Dialogue reflects the commitment of both countries to deepen their defence cooperation across various dimensions, adapt to emerging challenges, and contribute to regional stability and security.



## Arrow-3 Missile

### Context

- Israel and the United States jointly funded, developed, and produced the Arrow 3 missile.

### Details

- The missile was **developed by Israel Aerospace Industries (IAI) and Boeing.** Oversight is managed by the Israeli Ministry of Defense's "Homa" administration and the U.S. Missile Defense Agency.
- The primary objective is to serve as an anti-ballistic missile defense system, specifically designed to intercept long-range missiles.

### Technical Specifications

- Arrow 3 has a **range of over 1,500 kilometres**, providing a robust defence shield against threats originating from distant locations.
- **It engages targets at high altitudes**, well above the Earth's atmosphere, enhancing its interception capabilities.
- **The missile travels at incredible speeds, estimated at Mach 9 or faster**, enabling swift response to incoming threats.
- Equipped with advanced sensors and tracking systems for accurate target acquisition and interception.

### Interception Capabilities

- Arrow 3 can engage multiple incoming threats simultaneously, increasing its operational effectiveness during complex scenarios.

- It is highly effective against various types of ballistic missiles, including intermediate-range and intercontinental ballistic missiles (ICBMs), due to its advanced interception technology.

#### Operational Aspects

- Arrow 3 is an **integral part of Israel's multilayered missile defence system**, working alongside systems like the Iron Dome and David's Sling to create a comprehensive shield against missile threats.
- It operates in conjunction with other missile defence systems to provide a layered and robust defence mechanism against a wide array of potential threats.
- Deployed strategically to counter potential missile threats from adversaries, significantly enhancing Israel's national security posture.
- The Arrow 3 system contributes to regional stability by serving as a deterrent against potential missile attacks, thereby deterring conflict escalation.



#### Significance and Challenges

- Its existence acts as a **deterrent against adversaries equipped with long-range missile capabilities**, potentially preventing conflicts.
- Vital in safeguarding Israel against potential missile attacks, thereby enhancing overall national security and defence capabilities.
- The development and maintenance of such cutting-edge missile defence technology pose significant technical challenges and require continuous advancements.
- The creation, deployment, and ongoing operation of advanced defence systems like Arrow 3 necessitate substantial financial investment and sustained expenditure.

#### Conclusion

- The Arrow 3 missile system stands as a crucial pillar in Israel's comprehensive missile

defence strategy. Its deployment underscores Israel's commitment to securing its territories against long-range ballistic missile threats, despite the considerable technological complexities and financial investments associated with such advanced defense systems.



## **Hermes 900 Starliner**

#### Context

- India is set to acquire additional Hermes 900 StarLiner unmanned aerial vehicles from Elbit Systems, an Israeli defence technology company.

#### Key Highlights

- The acquisition aims to enhance the surveillance capabilities of the Indian Army along the northern borders.
- The Hermes 900 StarLiner is known for its



advanced defence technology.

#### Design and Build

- Robust and aerodynamic design with a **15-meter wingspan and a maximum takeoff weight of 1,200 kilograms**.
- Equipped with advanced avionics and sensor suites for enhanced operational capabilities.

#### Endurance and Range

- Long endurance capabilities, with the ability to remain airborne for more than 30 hours.
- **Operational range exceeding 1,000 kilometres**, suitable for extended surveillance and reconnaissance missions.

#### Payload and Sensor Integration

- Capable of carrying various payloads, including **electro-optical and infrared sensors**,

maritime radar, communication systems, and electronic intelligence systems.

- Enables the drone to perform missions with high precision and efficiency.

#### **Autonomous Flight Capabilities**

- Equipped with advanced autonomous flight systems, allowing automatic takeoff and landing.
- Capable of following pre-programmed flight paths and adapting to changing mission requirements.

#### **Applications**

- Intelligence, Surveillance, and Reconnaissance (ISR) missions.
- Border and maritime security, facilitating monitoring of coastal areas and maritime zones.
- **Environmental monitoring** for wildlife protection, forest fire detection, and conservation efforts.
- **Disaster management operations**, including damage assessment, search and rescue

missions, and situational awareness during crises.

#### **Other Notable Features**

- Redundant avionics and communication systems for enhanced reliability and safety.
- **Advanced data link systems for real-time data transmission.**
- Modular payload integration for adaptability to different mission requirements.
- Sophisticated flight control system, including automatic takeoff and landing capabilities and the ability to operate in challenging weather conditions.

#### **Conclusion**

- The Hermes 900 StarLiner drone represents a significant advancement in UAV technology. It offers enhanced capabilities for both civilian and military applications, contributing to operational efficiency and mission success across various sectors.



### 4.3 SNIPPETS



#### ***Light Combat Helicopter Prachand***

- The Indian Air Force (IAF) plans to procure 156 'Made-in-India' Prachand attack helicopters.
- Prachand, also known as the Light Combat Helicopter (LCH), is designed for deployment on both the China and Pakistan fronts by the IAF and the Indian Army.
- It is powered by HAL's new-generation Shakti engine co-developed with Safran, stands as the sole helicopter globally capable of operating at altitudes exceeding 5,000 to 6,000 meters while carrying a significant offensive payload.
- It is equipped with potent 20mm nose-mounted cannon with a rapid-fire rate of 1,000 rounds per minute, ideal for piercing light armour.
- It carries 70mm rockets on side pods and is armed with advanced Dhruvastra air-to-ground missiles, specifically designed for targeting hardened enemy shelters in high-altitude and diverse terrains.



### **Bulava Ballistic Missile**

- Russia's new nuclear-powered submarine, Emperor Alexander III, conducted a successful test launch of the Bulava ballistic missile, designed to carry nuclear warheads.
- The Emperor Alexander III belongs to the Borei class of strategic-missile cruisers. It is equipped with 16 Bulava missiles and modern torpedo weapons.
- The intercontinental Bulava missile was launched from an underwater position in the White Sea, located off Russia's northern coast. The target, located thousands of kilometres away, was on the Kamchatka peninsula in the Russian Far East.
- The Bulava missile is approximately 12 meters (40 feet) long, with an estimated range of around 8,000 km (5,000 miles).
- It can carry up to six nuclear warheads, making it a crucial component of Russia's naval nuclear triad.

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### **Ohio-Class Submarine**

- A US nuclear-powered Ohio-class submarine has been deployed to the Middle East to deter any escalation of the Israel-Hamas conflict.
- The submarines are equipped with advanced technology to support various missions, including strategic deterrence, surveillance, and special operations.
- They are approximately 560 feet long and have a submerged displacement of around 18,750 tons.
- Originally designed as ballistic missile submarines (SSBNs), the Ohio class was later modified to carry conventional cruise missiles.
- They contribute to maintaining a credible nuclear deterrent and provide the United States with a significant strategic advantage in ensuring the security and stability of international waters.

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### **Exercise CORPAT and BONGOSAGAR**

- The 4th edition of the Bilateral Exercise BONGOSAGAR-23 and the 5th edition of Coordinated Patrol (CORPAT) between the Indian Navy and the Bangladesh Navy were conducted in the Bay of Bengal.
- The exercise aimed at enhancing cooperation, interoperability, and mutual understanding between the two naval forces.
- These engagements build a foundation of trust, understanding, and cooperation between the navies, strengthening relationships and facilitating effective collaboration in addressing common maritime challenges.

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### Indian Navy Sailing Championship

- Indian Navy Sailing Championship (INSC) 2023 was held in Mumbai from November 5th to November 9th, 2023.
- The event is organized annually by the Indian Naval Sailing Association (INSA), located at Naval Headquarters, to promote the involvement of naval personnel in competitive sailing.
- Indian Naval Watermanship Training Centre (INWTC) founded in 1947 shortly after India's independence, is one of the oldest and most prestigious sailing schools in the country.

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### Nirbhay Cruise Missile

- Nirbhay is a long-range, all-weather, subsonic cruise missile developed by India's Defence Research and Development Organisation (DRDO).
- It is designed to be launched from a variety of platforms, including land, sea, and air, and can carry conventional or nuclear warheads.
- The Nirbhay has a length of 6 metres, a diameter of 0.52 metres, and a wingspan of 2.7 metres.
- It weighs about 1,500 kg and has a range of up to 1,500 kilometres. The missile is powered by a turbofan engine and can fly at a speed of up to 0.7 Mach.
- The Nirbhay is equipped with a variety of guidance systems, including inertial navigation, GPS, and terrain following radar. This allows the missile to accurately hit targets in a variety of weather conditions and terrain.

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### Exercise Mitra Shakti

- The ninth edition of Exercise MITRA SHAKTI-2023 held in Pune, Maharashtra from November 16th to 29th, 2023, fostering cooperation between the Indian and Sri Lankan armies.
- Objectives focus on Sub Conventional Operations under the UN Charter, specifically counter-terrorist operations. The exercise involves raids, search and destroy missions, heliborne operations, etc.
- Training elements cover various areas like Army Martial Arts Routine (AMAR), combat reflex shooting, yoga, drone utilization, and Counter Unmanned Aerial Systems (CUAS).
- Interoperability and coordination between troops during peacekeeping operations are essential objectives. The aim is to enhance mutual learning and share best practices.

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### Exercise Austrahind-23

- The Indian Armed Forces took part in the second edition of Joint Military Exercise AUSTRAHIND-23. The exercise was conducted in Perth, Australia from 22nd November to 06th December 2023.
- Exercise AUSTRAHIND was instituted in 2022 and the first edition was conducted in Mahajan, Rajasthan. It is planned to be an annual training event to be conducted alternatively in India and Australia.
- The exercise aims to foster collaborative partnerships and share best practices between the two sides.
- The exercise promotes inter-operability while undertaking multi-domain operations in Urban and Semi-Urban terrain under Chapter VII of the United Nations on peacekeeping operations.

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### Exercise Vajra Prahar

- It was a joint military exercise between the Indian and US armies.
- The exercise was held at Umroi Cantonment in Meghalaya, India, from November 21 to December 11, 2023. It was the 14th edition of the exercise.
- Throughout the exercise, soldiers from both armies conducted joint special operations in various scenarios, working together seamlessly. The exercise significantly improved interoperability and coordination between the two armies.
- The exercise is a critical component of the growing defence cooperation between India and the US. It helps foster mutual understanding and trust between the two armies and enables them to work together effectively to address common security challenges.

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### Exercise Surya Kiran

- Exercise Surya Kiran-XVII was the 17th edition of the annual joint military training exercise between India and Nepal.
- It was conducted from November 24 to December 6, 2023, in Pithoragarh, Uttarakhand.
- The exercise served as a platform to further strengthen the close and friendly relations between India and Nepal.
- It helped in enhancing interoperability between the two armies, enabling them to work together effectively in addressing common security challenges in the region.
- The Surya Kiran series of exercises began in 2011 and is held alternatively in India and Nepal. It typically focuses on counter-insurgency operations, jungle warfare, and disaster management in mountainous regions.

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### Naval Anti-Ship Missile Short Range (NASM-SR)

- The Naval Anti-Ship Missile Short Range (NASM-SR) is the first indigenous air-launched anti-ship cruise missile developed for the Indian Navy by the Defence Research and Development Organisation (DRDO).
- It is designed to be launched from attack helicopters and will replace the Sea Eagle missiles currently in use.
- This cutting-edge missile system combines advanced navigation, avionics, and targeting for precise flight control, enabling the engagement of targets up to 60 kilometres away.
- With a speed of Mach 0.8 and a sea-skimming ability at just 5 meters above the sea, this missile's 100 kg warhead is capable of sinking patrol boats and causing damage to larger warships, offering a potent defence capability.

## 4.4 1 MAINS & 5 MCQs

**Q1. How does India's National Security Strategy balance the preservation of strategic autonomy with the need for collaborative partnerships in addressing diverse security challenges, encompassing traditional and emerging threats?**

### Answer

- India's National Security Strategy (NSS) walks a tightrope between preserving strategic autonomy and fostering collaborative partnerships to tackle diverse security challenges. Balancing these seemingly opposing forces is crucial for navigating an increasingly complex and interconnected world.

### Preserving Strategic Autonomy

- **Independent decision-making:** The NSS should emphasize India's right to choose its allies, security partners, and defence strategies, without succumbing to external pressure or entanglements.
- **Diversification of partnerships:** Avoiding over-reliance on any single partner, India can cultivate relationships with diverse nations, balancing strategic interests and minimizing vulnerability.
- **Domestic capacity building:** Investing in indigenous technology, research, and development strengthens India's self-reliance

in critical security domains, reducing dependence on imports or expertise.

- **Defence modernization:** Upgrading military capabilities through domestic production and strategic partnerships allows India to deter and respond effectively to threats without relying solely on foreign intervention.
- **Nuclear deterrence:** Maintaining a credible nuclear deterrent posture ensures India's security against potential aggression without compromising its commitment to disarmament efforts.

### Collaborative Partnerships

- **Issue-based coalitions:** Partnering with other nations on specific security challenges, like maritime security, counter-terrorism, or cyber threats, allows for collective action and resource pooling without compromising broader strategic priorities.
- **Multilateral forums:** Participating actively in international organizations like the UN, SCO, and ASEAN fosters global cooperation on shared threats like climate change or pandemics, leveraging collective legitimacy and diplomatic influence.
- **Technology and knowledge exchange:** Collaborating with other nations on research and development in areas like space, artificial intelligence, and advanced weaponry can

accelerate innovation and address emerging threats more effectively.

- **Joint exercises and training:** Engaging in joint military exercises, training programs, and information sharing strengthens interoperability and builds trust with potential allies, facilitating coordinated responses to future crises.
- **Economic partnerships:** Integrating India's economy with other nations through trade agreements and investments can create interdependence and mutual interest, fostering regional stability and deterring conflict.

### Finding the equilibrium

- Striking the right balance between autonomy and collaboration requires a nuanced approach. The NSS should clearly articulate India's national interests and priorities while recognizing the value of strategic partnerships in addressing complex security challenges.

- **Conditional cooperation:** Partnering with others on specific issues where interests coincide, without compromising core strategic autonomy in other areas.
- **Issue-based partnerships:** Collaborating with different countries on different threats, drawing on their specific strengths and expertise. For instance, partnering with the US on counter-terrorism while working with China on climate change.
- **Transparency and communication:** Being clear about India's red lines and interests with partners, fostering trust and preventing misunderstandings that could undermine cooperation.
- Ultimately, India's NSS must navigate a dynamic global landscape, constantly reassessing its strategic autonomy needs in the face of evolving threats and opportunities. Finding the right mix of self-reliance and collaborative engagement will be key to ensuring India's long-term security and prosperity in a multipolar world.

**Q2. Recently, "Project Kusha" gained attention due to its significant contribution to:**

- Solar energy research
- Cybersecurity initiatives
- Long-range air defence system
- Agricultural modernization

**Q3. The term "Prachand" recently made headlines due to:**

- Breakthroughs in artificial intelligence
- Procurement of indigenous attack helicopters
- Advancements in renewable energy
- Innovations in transportation systems

**Q4. Consider the following statements in the context of the Nirbhay Cruise Missile:**

1. It is a subsonic cruise missile developed by India's Defence Research and Development Organisation (DRDO).
2. It can carry conventional or nuclear warheads.
3. It weighs about 1,500 kg and has a range of up to 1,500 kilometres.

4. It has a length of 6 metres.

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

- Only one
- Only two
- Only three
- All four

**Q5. The term "Bulava" recently appeared in news headlines due to its association with:**

- Cybersecurity breaches
- Successful test launch of a ballistic missile
- Renewable energy initiatives
- Space exploration missions

**Q6. The term "Hermes 900 StarLiner" recently appeared in news headlines due to:**

- Groundbreaking space exploration missions
- An agreement for the acquisition of unmanned aerial vehicles by India
- Advancements in renewable energy technologies
- Developments in quantum computing

**ANSWERS: 2) C, 3) B, 4) D, 5) B, 6) B**



## 5. ENVIRONMENT & ECOLOGY

### 5.1 ADAPTATION GAP REPORT 2023

#### Context

- In 2023, temperature records topped, while storms, floods, droughts, and heatwaves caused devastation.

#### Key details

- UNEP's Adaptation Gap Report 2023: Underfinanced. Underprepared - Inadequate investment and planning on climate adaptation leaves the world exposed and finds that progress on climate adaptation is slowing when it should be accelerating to catch up with these rising climate change impacts.

#### Findings of the report

##### Adaptation Finance Disparities

- Financial Needs:** Developing countries require 10-18 times more adaptation finance than the current international public finance flows.
- Increased Estimate:** The new estimate is over 50% higher than previous assessments, highlighting the growing gap between financial needs and available resources.

##### Estimated Costs of Adaptation

- Decade Projection:** Modelled costs for adaptation in developing countries are projected to be around US\$215 billion per year in this decade.
- Domestic Priorities:** To implement domestic adaptation priorities, the estimated adaptation finance needed reaches US\$387 billion per year.

##### Decline in Public Finance Flows

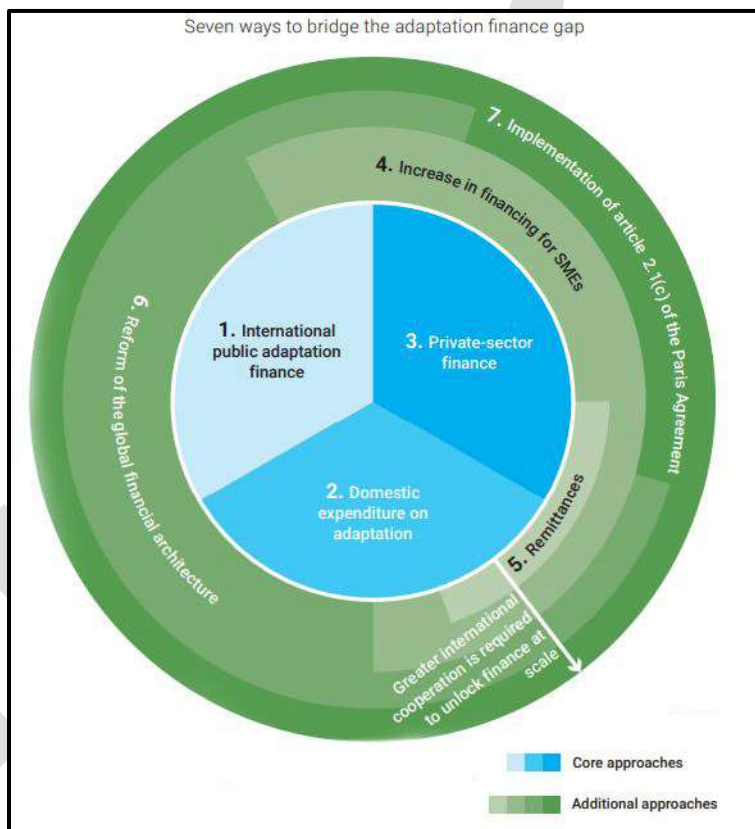
- Finance Flow Decrease:** Despite escalating adaptation finance needs, public multilateral and bilateral flows to developing countries decreased by 15% to US\$21 billion in 2021.

##### Widening Adaptation Finance Gap

- Current Gap:** Due to the increasing needs and diminishing financial flows, the current adaptation finance gap is estimated to be in the range of US\$194-366 billion per year.
- Implications:** This widening gap poses significant challenges for implementing effective adaptation measures, potentially leading to severe losses and damages.

##### Plateauing Adaptation Planning

- Stagnation in Implementation:** Despite the escalating need for adaptation, there seems to be a plateau in both planning and implementation efforts.



- **Concerns:** The stagnation raises concerns about the ability to address the evolving challenges posed by climate change.

#### Implications for Vulnerable Populations

- **Massive Consequences:** The failure to adapt has massive implications, particularly for the most vulnerable populations.
- **Losses and Damages:** The lack of adequate adaptation measures could result in substantial losses and damages, exacerbating the vulnerability of those least equipped to cope with the impacts of climate change.

### Way forward

#### Domestic Expenditure:

- **Enhanced Domestic Funding:** Increasing financing through domestic expenditure involves mobilizing resources within the country to support adaptation measures.
- **Self-Reliance:** Encourages countries to rely on their financial capabilities to address climate-related challenges.

#### International Finance:

- **Boosting International Support:** Leveraging international funding mechanisms to bridge the adaptation finance gap.
- **Global Cooperation:** Encourages collaboration and financial contributions from developed nations to assist developing countries in their adaptation efforts.

#### Private Sector Finance:

- **Private Investment:** Attracting private sector involvement by creating an environment conducive to climate-resilient investments.
- **Innovation:** Encouraging innovative financial instruments and partnerships to mobilize private capital for adaptation projects.

#### Remittances:

- **Utilizing Remittances:** Exploring the potential of remittances as a source of adaptation finance.
- **Community Support:** Recognizing the role of migrant workers in supporting climate-resilient initiatives in their home countries.

#### SME Financing:

- **Tailored Support for SMEs:** Providing targeted financing solutions for Small and Medium Enterprises (SMEs) to enhance their capacity for climate adaptation.
- **Economic Inclusivity:** Acknowledges the role of SMEs in fostering economic growth and employment.

#### Global Financial Architecture Reform:

- **Restructuring Financial Systems:** Advocating for reforms in the global financial architecture to better address the needs of developing countries.
- **Equitable Distribution:** Aims to create a system that ensures fair and equal distribution of financial resources for climate adaptation.

#### Innovative Financing for Loss and Damage:

- **Loss and Damage Fund Innovation:** The new Loss and Damage fund is urged to explore innovative financing mechanisms.
- **Scale of Investment:** Recognizes the need for creative and scalable financial

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solutions to meet the required level of investment in addressing loss and damage.

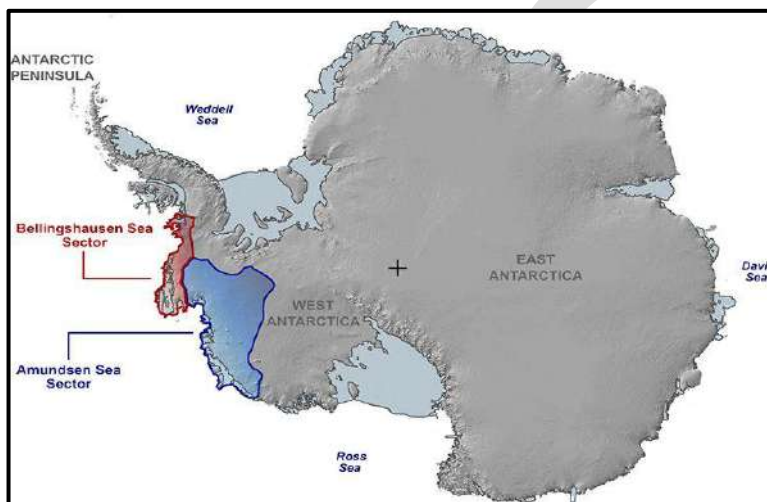
## 5.2 MELTING OF WEST ANTARCTICA'S ICE SHEET

### Context

- According to a new study, no matter how much carbon emissions are reduced, the rapid melting of West Antarctica's ice sheet owing to the warm waters surrounding it is now unavoidable.

### Details

- The study, titled 'Unavoidable future increase in West Antarctic ice-shelf melting over the twenty-first century,' was published last week in Nature.
- If the ice sheet melted completely, it would raise global mean sea level by 5.3 meters (17.4 feet).
- If this occurs, it could have disastrous consequences for millions of people living in vulnerable coastal cities around the world, including India.



### About an Ice sheet

- An ice sheet is a massive expanse of glacial ice covering an area larger than 50,000 square kilometers, roughly equivalent to the size of Uttarakhand.

#### Existing Ice Sheets:

- **Greenland Ice Sheet:** One of the two major ice sheets on the planet, covering Greenland and containing a vast amount of glacial ice.
- **Antarctic Ice Sheet:** The other significant ice sheet, located on the continent of Antarctica, comprising an extensive mass of glacial ice.

#### Freshwater Reservoir:

- **Water Content:** Together, the Greenland and Antarctic ice sheets hold nearly two-thirds of the Earth's freshwater resources.
- **Importance:** This immense freshwater reservoir has critical implications for global water systems.

#### Impact on Sea Level:

- **Mass and Sea Level:** The mass of ice sheets directly influences global mean sea levels.
- **Mass Gain vs. Mass Loss:** When ice sheets gain mass, they contribute to a decrease in global mean sea level. Conversely, when they lose mass, it leads to a rise in global mean sea level.

#### Environmental Significance:

- **Climate Indicator:** Changes in the mass of ice sheets serve as indicators of climate variations and environmental shifts.
- **Monitoring:** Scientists closely monitor ice sheets to understand climate trends and predict potential impacts on sea levels.

## What is the melting rate of the West Antarctic ice sheet?

- Ice sheets melt through a variety of methods. One of these is when warm ocean waters melt ice shelves, which are the borders of floating ice sheets.
- Ice shelves help to stabilize the land-based glaciers behind them.
- When an ice shelf thins or disappears, glaciers accelerate, dumping more ice into the ocean and raising sea levels.
- Sea ice, the free-floating ice that surrounds the polar regions, is distinct from both ice shelves and ice sheets.
- Sea ice forms when seawater freezes. The same thing is happening in West Antarctica.
- For decades, the region's ice shelves have been dwindling, glaciers have been melting faster, and the ice sheet has shrunk.

**Findings of the Study:**

**West Antarctica Sea Warming:**  
Study Prediction: The study anticipates severe and extensive future warming of the West Antarctica Sea.  
Consequences: This warming is likely to intensify the melting of ice shelves in the region.

**Increased Ice Shelf Melting:**  
Resulting Impact: The study suggests that the warming of the West Antarctica Sea will lead to greater melting of ice shelves.  
Sea-Level Rise: This, in turn, contributes to an increased risk of sea-level rise.

**Global Sea-Level Rise:**  
Global Implications: The predicted sea-level rise has global repercussions, affecting coastal towns worldwide.  
Concern for India: India, with its vast coastline and dense population, is particularly vulnerable to the adverse effects of rising sea levels.

**Vulnerability of India:**  
Coastal Exposure: India's extensive coastline exposes numerous coastal communities to the impacts of rising sea levels.  
Dense Population: The high population density in coastal areas exacerbates the potential risks and challenges associated with sea-level rise.

**Implications for Coastal Towns:**  
Immediate Threat: The increased sea levels pose an immediate threat to coastal towns globally, including those in India.  
Infrastructure and Livelihoods: Coastal infrastructure, as well as the livelihoods of those living in these areas, are at risk.

**Adaptation Challenges:**  
Financial Constraints: If coastal communities cannot afford adequate defenses, such as the construction of protective walls, they may face significant challenges in adapting to rising sea levels.  
Relocation or Refugees: In the absence of protective measures, residents may be forced to consider options like relocation or, in extreme cases, become climate refugees.

## Closing remarks

- Although the findings are dismal, the report emphasizes that they should not deter attempts to minimize the effects of climate change.
- The melting West Antarctic ice sheet, according to the experts, is just one component of sea level rise, which is just one effect of climate change.

- There are many other impacts that we can still avoid or limit: like the loss of the East Antarctic Ice Sheet, or the severity of heatwaves, droughts, and extreme rainfall.

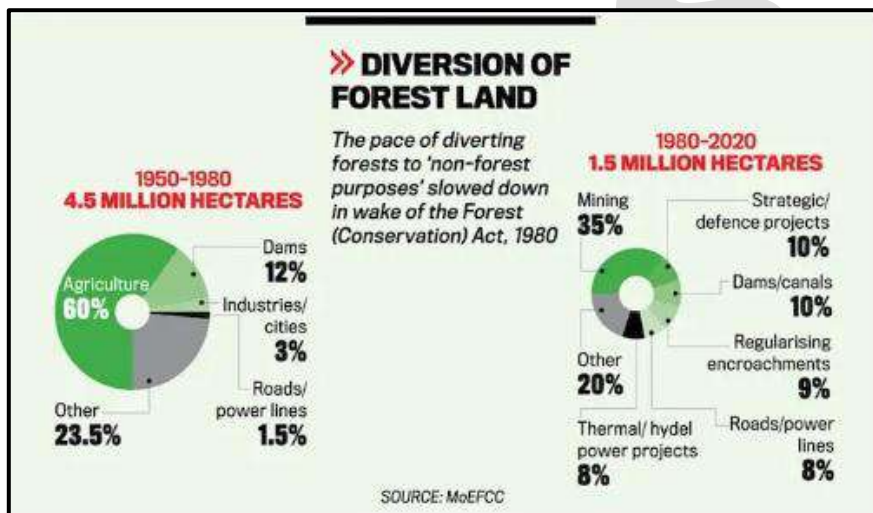
## 5.3 COMMUNITY RIGHTS AND FOREST CONSERVATION

### Context

- The Forest Conservation Amendment Act of 2023 has received limited attention and little discussion about its impact on forests and their inhabitants.

### Key details

- From the colonial forest law in 1865 to the Forest Conservation Amendment Act, of 2023, more than fifteen laws, Acts, and policies have been formulated interlinking forests with legal and policy frameworks.
- However, there is little to no recognition of the rights of indigenous communities in these Acts, who are the rightful inhabitants of forest lands.



### What is the new amendment?

#### Focus on Climate Change and Deforestation

- The amendment primarily addresses the critical issues of climate change and deforestation, emphasizing effective forest management and afforestation as key strategies.

#### Economic Utilization of Forests

- The law aims to determine how forests can be utilized for economic gain, outlining how this objective will be achieved.

#### Removal of Forests from Jurisdiction

- A significant aspect of the amendment involves removing certain forests from the law's jurisdiction. This facilitates various forms of economic exploitation.

#### Applicability of Forest Law

- The forest law will now apply exclusively to areas categorized under the 1927 Forest Act and those designated as such on or after October 25, 1980.

#### Exemptions from Forest Law

- The amended law exempts forests that were converted for non-forest use on or after December 12, 1996.
- Additionally, land within 100 kilometers of the China and Pakistan border is exempt, where the central government can undertake linear projects.

#### Central Government's Authority

- The central government is authorized to construct security measures in areas up to ten hectares to establish security infrastructure and surveillance facilities.
- This provision also applies to areas (up to five hectares) designated as vulnerable.

#### Ecotourism and Environmental Entertainment

- Initiatives such as ecotourism, safari, and environmental entertainment may be implemented in the exempted areas. The objective is to improve the livelihoods of those dependent on forest resources.

### Concerns

- The amendment's focus on economic exploitation and the implementation of initiatives to **benefit livelihoods have drawn criticism from tribal communities and human rights activists**. Concerns are raised about the potential impact on indigenous communities and the environment.

### **Reasons for the Amendment**

#### Godavarman Thirumulkpad Case:

- The amendment was prompted by the legal precedent set by the **Godavarman Thirumulkpad case, which reached the Supreme Court in 1996**. The case led to an interpretation of forest land based on its 'dictionary meaning.'

#### Inclusion of Private Forests:

- **As a result of the Godavarman Thirumulkpad case interpretation**, all private forests were brought under the ambit of the 1980 Forest Conservation Act.
- This inclusion raised concerns and led to debates about the impact on various non-forest uses, including the conversion of land for large-scale industries.

#### Debate on Industrial Progress:

- **The law faced opposition, particularly from private landowners, individuals, and organizations** involved in forest conservation.

- Critics argued that the legislation, aimed at restricting non-forest uses of forest land, was hindering the country's industrial progress.

#### Exclusion of Forest Land:

- **The requirements of the industrial classes in the country primarily drove the perceived need to exclude forest land from the legal framework.**
- There was a desire to facilitate economic exploitation of forest land without the constraints imposed by the existing legal provisions.

#### Concerns and Opposition:

- **The Forest Conservation Act**, in its original form, faced opposition from industrial sectors and proponents of economic development who sought greater flexibility in utilizing forest land.
- **This tension between conservation and economic interests** led to periodic debates and concerns raised by indigenous communities and human rights activists.

#### Introduction of Amendment Bill:

- **Against this backdrop, the Forest (Conservation) Amendment Bill was introduced** in Parliament in March. The introduction triggered extensive discussions and debates, leading to the referral of the Bill to a 31-member Joint Parliamentary Committee (JPC).

## 5.4 LOSS AND DAMAGE FUND

### **Context**

- As the climate crisis intensifies, two terms are in sharp focus: adaptation and 'loss and damage' (L&D).

### **Details**

- As the climate crisis intensifies, two terms are in sharp focus: adaptation and 'loss and damage' (L&D).
- Adaptation is the proactive response to climate change, the art of survival using which communities and countries make deliberate choices to prepare for and cope with climate-related challenges.
- In contrast, L&D represents the irreversible consequences of climate change: impacts that can't be avoided or mitigated through adaptation efforts.
- They encompass the real losses that extend beyond monetary value and cut to the core of human rights and well-being.
- L&D includes economic losses, human casualties, and the degradation of ecosystems and cultural heritage.

## Loss and Damage in the Context of COP27

### Costs Associated with Climate Change:

- The term "loss and damage" revolves around the costs that developed and rich countries, major contributors to industrial emissions, should bear.
- These costs are intended to compensate poorer nations that have made minimal contributions to pollution but are more vulnerable to the adverse effects of climate change.

### What is "loss and damage"?

The phrase refers to costs already being incurred from climate-fuelled weather extremes or impacts, like rising sea levels

- Climate funding so far has focused on cutting CO2 emissions, while a third of it went towards helping communities adapt to future impacts
- Loss and damage funding is expected to cover the cost of damage that countries cannot avoid or adapt to
- A report by 55 vulnerable countries estimated that their combined climate-linked losses in the last two decades totalled



\$525 billion, or 20% of their collective GDP. This could go up to \$580 billion per year by 2030

- Vulnerable countries and campaigners argue that rich countries that caused the bulk of climate change with their historical greenhouse gas emissions should pay

Source: Reuters

### Historical Responsibility and Climate Finance:

- Developed countries, historically responsible for industrial emissions, are urged to provide financial support to developing nations to address the impacts of climate change.
- This financial support is often framed as compensation for the loss and damage experienced by vulnerable countries.

### Resistance and Difficulty in Definition:

- Despite the long-standing appeal from vulnerable countries for climate damage finance, rich nations have resisted committing to clear financial obligations.
- One challenge lies in defining and assessing damage solely attributable to climate change, making it difficult to quantify and allocate responsibility.

### Negative Consequences of Climate Change:

- Loss and damage encompass the adverse consequences arising from the unavoidable risks associated with climate change.

- This includes phenomena like rising sea levels, prolonged heat waves, desertification, acidification of the sea, and extreme events such as bushfires, species extinction, and crop failures.

### Escalating Frequency and Severity:

- The concept acknowledges that, as the climate crisis unfolds, events contributing to loss and damage will occur more frequently.
- Additionally, the consequences of these events will become more severe over time, posing greater challenges for vulnerable nations.

### What are some examples of those innovative tools?

- The UN Secretary-General António Guterres, for example, has called for the use of windfall taxes on fossil fuel companies and diverted the money to people struggling with rising food and energy prices and to countries suffering loss and damage caused by the climate crisis.
- Others have called for debt for loss and damage swaps, international taxes, and a dedicated finance facility for loss and damage under the UN Framework Convention on Climate Change.
- At COP 26 and 27 philanthropies and country governments pledged funds for loss and damage. These efforts could be scaled up considering the mounting challenges of the most vulnerable communities.

## Effectiveness of the Loss and Damage Fund

### Addressing Gaps in Current Climate Finance:

- The effectiveness of the Loss and Damage Fund hinges on its ability to fill gaps that existing climate finance institutions, such as the Green Climate Fund, may not adequately address.
- It should complement and supplement ongoing efforts to support vulnerable nations facing the impacts of climate change.

### The shortfall in Climate Finance:

- The fund's success will depend on its capacity to bridge the financial gap in climate finance.

In 2020, combined adaptation and mitigation finance fell at **least US\$17 billion short of the US\$100 billion** pledged to developing countries.

- The Loss and Damage Fund should work to mobilize additional resources to meet the financial needs of vulnerable nations.

#### Recommendations and Operations:

- The recommendations provided by the Transitional Committee for the setup and operations of the fund will play a crucial role.
- **These recommendations should be comprehensive and address key aspects** such as fund distribution, recipient countries, and contributors.

#### Tackling Root Causes of Climate Change:

- The effectiveness of the fund is inherently linked to addressing the root causes of climate change. While providing financial support for loss and damage is vital, simultaneous efforts to reduce emissions are essential.

- **Mitigating the root causes** will prevent or minimize the occurrence of devastating climate impacts.

#### Decisive Action on Emissions Reduction:

- The success of the Loss and Damage Fund ultimately depends on a global commitment to drastic emissions reduction.
- **Without substantial and urgent efforts** to reduce emissions, the fund may find itself continually addressing the consequences rather than preventing them.

#### Resource Mobilization for Mitigation, Adaptation, and Loss and Damage:

- **Urgent resource mobilization is essential for mitigation, adaptation, and loss and damage.** The fund should advocate for and secure additional resources to address the comprehensive challenges posed by climate change, ensuring that humanity can still achieve the Sustainable Development Goals.

## 5.5 INDIA EXEMPTED FROM CITES RST

### Context

- India has been recently removed from the CITES's Review of Significant Trade (RST) for Red Sanders.

### Key details

- India has been under the Review of Significant Trade (RST) process for Red Sanders since 2004. The CITES RST process enables disciplinary action in the form of trade suspensions directed at countries that do not meet their obligations.
- Union Environment Minister Bhupender Yadav said that based on India's compliance and reporting, India has been removed from the Review of Significant Trade for Red Sanders.
- The decision was taken at the 77th meeting of the Standing Committee of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) held in Geneva from November 6 to 10.



### About Red Sanders (*Pterocarpus santalinus*)

#### About

- **Endemic Tree Species:** *Pterocarpus santalinus* is a tree species native to India, specifically found in the Eastern Ghats with a limited geographical range in Andhra Pradesh.
- **Geographical Range:** The species is exclusive to an isolated forest area in Andhra Pradesh, thriving in rocky, degraded, and barren areas with red soil and hot, dry climates.



### Threat

- **Illegal Logging and Smuggling:** Red Sanders faces threats from illegal logging, often driven by smuggling activities.
- **Anthropogenic Threats:** Other threats include forest fires and cattle grazing, posing risks to the species' survival.
- **Demand and Use:** Renowned for its rich hues and medicinal properties, Red Sanders is highly sought after in Asia, particularly in China and Japan. It is used in cosmetics, medicines, furniture, woodcraft, and musical instruments.

### Conservation Status

- **IUCN Red List:** Classified as Endangered on the IUCN Red List, reflecting the species' vulnerability.
- **CITES Listing:** Included in Appendix II of CITES, acknowledging the need for controlled trade regulations.
- **Wildlife (Protection) Act 1972:** Designated under Schedule II of the Wildlife (Protection) Act, emphasizing legal protection measures.

### **Why was India exempted from CITES RST?**

- **Red Sanders Review of Significant Trade (RST) Process since 2004:** India has implemented the Red Sanders Review of Significant Trade (RST) process since 2004, aiming to regulate and monitor the trade of Red Sanders, a valuable wood species.
- **Exemption through 2022 Amendment to Nature Conservation Act:** In 2022, an amendment to the Nature Conservation Act was enacted, providing an exemption that aligns with the provisions of the CITES National Legislative Program (NLP). This amendment has implications for the legal trade and conservation of Red Sanders.
- **Liberalization for Indian Farmers:** Following the 2022 amendment, India has liberalized its approach, enabling Indian farmers to actively participate in the legal business of Red Sanders. This marks a significant shift in policy, allowing for increased involvement of local farmers in the regulated trade of this valuable resource.

### **About CITES RST**

- The Review of Significant Trade (RST) management system is implemented in cases falling under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- It specifically addresses concerns regarding the potential impact of trade on the survival of a particular species in a given country.

### Operational Framework:

- Within the CITES RST process, a structured approach is employed to assess the trade's impact on the viability of a species. This proactive management system allows for the implementation of disciplinary measures, primarily in the form of trade suspensions.

### Enforcement Mechanism:

- Countries failing to fulfill their obligations under CITES face the risk of disciplinary actions. The RST process empowers the imposition of trade suspensions as a means to encourage compliance and safeguard endangered species.

### **Indian Red Sanders Trade Liberalization**

- **Historical Context:** Since 2004, India has maintained the Red Sanders Review of Significant Trade (RST) process, a mechanism aligned with CITES. This initiative reflects concerns about the potential threat posed by trade to the viability of Red Sanders, a species of economic significance.

### Legislative Amendment:

- In 2022, a pivotal amendment to the Nature Conservation Act marked a significant milestone. This amendment harmonized Indian legislation with the provisions outlined in the CITES National Legislative Program (NLP), enhancing the country's commitment to conservation efforts.

### Liberalization Impact:

- As a result of these legislative changes, India has embraced a more liberal stance. This newfound flexibility allows Indian farmers to actively engage in the legal business of Red Sanders, contributing to a regulated and sustainable trade environment.

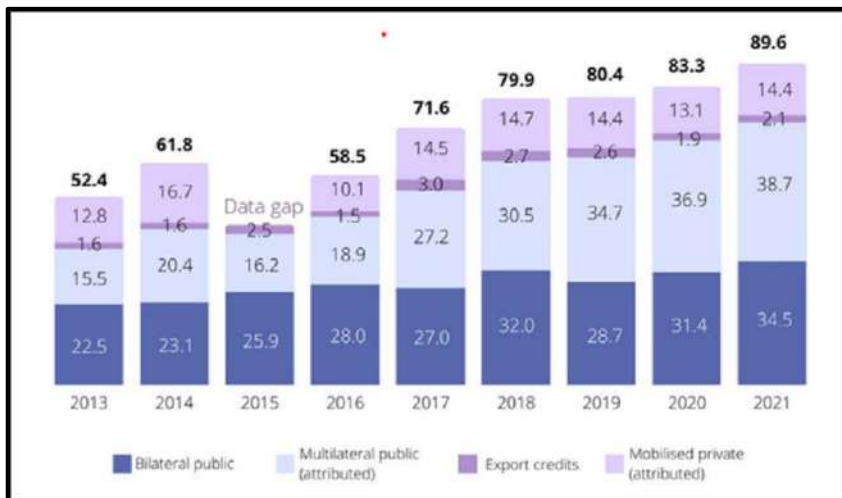
## 5.6 OECD REPORT ON CLIMATE FINANCE

### Context

- A new report was published by the Organisation for Economic Cooperation and Development (OECD).

### Key details

- The report comes against the backdrop of a pledge by developed nations at the COP 26 talks in 2020 to double adaptation finance.
- The recent Organisation for Economic Cooperation and Development (OECD) report



sheds light on a significant gap in the commitment made by economically developed countries to mobilize \$100 billion annually for climate mitigation and adaptation needs in developing countries. This commitment was originally set with a 2020 deadline.

### Findings of the Report

#### Falling Short of the Promise

- The report reveals that economically developed countries failed to meet their commitment, falling short of the promised **\$100 billion in 2021**.
- The collective mobilization reached \$89.6 billion.

#### Adaptation Finance Decline

- There was a concerning decline in finance allocated for adaptation efforts in 2021.
- The report notes a **14% reduction** in adaptation funding compared to the previous year, emphasizing the challenges in supporting developing nations' resilience to climate impacts.

### Implications

- Global Climate Efforts:** The shortfall in climate financing poses a challenge to global climate efforts, particularly as developing countries depend on financial support to enhance their climate resilience and transition to sustainable practices.

- Adaptation Vulnerabilities:** The decline in adaptation funding raises concerns about the ability of vulnerable regions to address the immediate impacts of climate change. Adaptation measures are crucial for communities facing the consequences of a changing climate.
- Trust and Cooperation:** The report highlights the importance of trust and cooperation among nations in meeting climate finance commitments. The discrepancy between promises and actual mobilization raises questions about the accountability and cooperation needed to address the global climate crisis.

### Why is the OECD report notable?

- The OECD is largely a group of rich countries including the **U.S., the U.K., Germany, France, Switzerland, Canada, and others**.
- The report, as such, offers a peek into their **idea of climate finance ahead of the COP 28 climate talks** in the United Arab Emirates next week, where the topic is expected to be an important bone of contention.

- The report also comes against the backdrop of a pledge by the bloc of developed nations at the COP 26 talks in Glasgow, in 2020, to double adaptation finance.
- **Parties to the United Nations Framework Convention on Climate Change (UNFCCC)** had also said at Glasgow, “with deep regret” that the developed nations bloc hadn’t met the \$100 billion climate finance goal in due time in 2020.
- **The failure to mobilize adequate climate finance lowers the capacity** of developing countries to address climate mitigation (like emissions reduction with renewable energy) and adaptation needs (like developing and incentivizing climate-resilient agriculture) and reduces trust among the world’s poorer countries that the developed world is serious about tackling the climate crisis.

#### How is climate finance accounted for?

- **The OECD report showed that of the \$73.1 billion mobilized in 2021** by the public sector via bilateral and multilateral channels, \$49.6 billion was provided as loans.
- **While the report doesn’t classify them in terms of the rates** at which they’re provided, data available elsewhere sheds light on the extent to which rich countries rely on loans at commercial rates to fulfill their climate finance obligations.
- **For example**, an assessment by the American non-profit research group Climate Policy Initiative of global climate finance flows between 2011 and 2020 found that 61% of climate finance was provided as loans, of which only 12% was at concessional interest rates.

#### What is additionality?

- **Another issue in the OECD report pertains to additionality.** The UNFCCC states that developed countries “shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations under the convention”.
- **This means developed countries can’t cut overseas development assistance (ODA)** to finance climate needs because that would effectively rob Peter to pay Paul.
- **In the real world, it could cut off support for healthcare** to reallocate that money to, say, install solar panels.

#### Way Forward

- **Renewed Commitments:** The findings underscore the need for economically developed countries to renew and strengthen their commitments to climate financing. Closing the gap is essential for advancing global climate goals and supporting vulnerable nations.
- **Transparent Reporting:** Improved transparency and accurate reporting of financial contributions can enhance accountability and facilitate effective tracking of progress towards climate finance goals.
- **Collaborative Efforts:** Climate finance is a collective effort requiring collaboration between developed and developing nations. Bridging the financing gap necessitates a shared commitment to addressing climate challenges globally.

## 5.7 SHORT ARTICLES

### Graded Response Action Plan

#### Context

- A ‘very poor’ quality air continued to engulf the Delhi-NCR region.

#### Details

- **The Supreme Court has asked the Delhi government** to ensure that municipal solid waste isn’t burnt in the city.
- **The comments came a day after the Delhi government** decided to implement the odd-

even scheme for cars from November 13-20 to keep vehicular emissions down.

- Such measures might bring down peak pollution levels, but their impact will be limited.
- **To significantly improve air quality in New Delhi**, a host of preventive steps need to be taken in the national capital as well as the adjoining areas, according to a 2016 report, **Comprehensive Study on Air Pollution and Green House Gases (GHGs) in Delhi**, by Indian Institute of Technology Kanpur.
- A successful execution of these measures is expected to bring down **PM 2.5 and PM 10 levels**.

#### About Graded Response Action Plan:

##### About

- **Emergency Measures:** GRAP (Graded Response Action Plan) is a set of emergency measures designed to prevent further deterioration of air quality in the Delhi-NCR region.
- **Approval and Implementation:** Approved by the Supreme Court in 2016 and officially notified in 2017, GRAP was formulated after extensive discussions involving the Environment Pollution (Prevention and Control) Authority (EPCA), state government representatives, and experts.

##### Development Process

- **Collaborative Effort:** The plan emerged from multiple meetings involving stakeholders to address the critical issue of air pollution.
- **Institutionalization:** GRAP institutionalizes specific measures to be taken when air quality deteriorates beyond defined thresholds.

##### Stages of GRAP

- **Stage 1:** Activated when the Air Quality Index (AQI) falls into the 'poor' category (201 to 300).
- **Stage 2:** Triggered when the AQI reaches the 'very poor' category (301-400).
- **Stage 3:** Implemented when the AQI enters the 'severe' category (401-450).
- **Stage 4:** Activated when the AQI rises to the 'severe +' category (above 450).

**READ:** <https://www.iasgyan.in/daily-current-affairs/grap-43>

## Assembly of the International Solar Alliance

### Context

- Recently, the Sixth Assembly of the International Solar Alliance (ISA) was convened at Bharat Mandapam in New Delhi.

### Details:

- Addressing the Assembly, the ISA President and Union Minister said that the International Solar Alliance is steadfast in its commitment to Member Countries to make solar the energy source of choice.
- "Around 80 percent of the global population, totaling a staggering 6 billion people, reside in countries that depend on fossil fuel imports.
- Renewable energy sources have the potential to supply 65 percent of the world's total electricity by 2030 and decarbonize 90 percent of the power sector by 2050.
- The International Solar Alliance is steadfast in its commitment to Member Countries to make solar as the energy source of choice, foster environments conducive to attracting investments, and ensure ample energy availability to meet the surging global demands."

### Major Highlights of the Assembly:

#### ISA's Broader Strategy:

- **Emphasis on Energy Access:** The International Solar Alliance (ISA) assembly discussed the organization's broader strategy, emphasizing the priority of ensuring energy access before transitioning to renewable sources.
- **"Access First and Then Transition":** This philosophy underscores the importance of making energy accessible to all populations before transitioning to cleaner and more sustainable energy sources.

#### Viability Gap Funding (VGF) Increase:

- **Enhanced Support:** The assembly announced an increase in Viability Gap Funding (VGF) for projects supported by the ISA.

- **Raising the Bar:** The VGF was raised from 10% to a range of 10% to 35%, aiming to foster greater investments in solar projects, with a specific focus on African countries.

**Inauguration of Supported Projects:**

- **Diverse Initiatives:** Four projects supported by the ISA were inaugurated during the assembly, showcasing the organization's commitment to diverse solar initiatives across countries.
- **Project Highlights:**
- Solarization of the Malawi Parliament
- Solarization of rural healthcare centers in Fiji

- Installation of a solar-powered cold storage in Seychelles
- Solarization of a school in Kiribati

**India's Solar Commitment:**

- **Primary Energy Source:** India reiterated its commitment to make solar energy the primary source of energy.
- **Global Impact:** India emphasized the potential for renewable energy to supply 65% of the world's total electricity by 2030.
- **Decarbonization Goal:** The commitment also extends to decarbonizing 90% of the power sector by 2050, aligning with global efforts to combat climate change.

## Climate Services Report 2023

**Context**

- Recently, the World Meteorological Organization (WMO) released the State of Climate Services, in 2023.

**Details**

- The health sector is inadequately prepared to safeguard people from the effects of heat and other extreme weather events, as revealed by a report from the World Meteorological Organization (WMO).
- This is even as it is predicted that by 2030, there will be around 560 medium- to large-scale disaster events every year, or 1.5 per day.
- The health of the most vulnerable countries and populations will be impacted by the extreme weather events resulting from climate change, including heatwaves, droughts, floods, and wildfires.

**Key findings of the report:**

Inadequate Preparedness of Health Sector	<ul style="list-style-type: none"> <li>• <b>Recently, the World Meteorological Organization (WMO) released the State of Climate Services, in 2023.</b></li> </ul>
Increasing Frequency of Disaster Events	<ul style="list-style-type: none"> <li>• By 2030, an estimated 560 medium- to large-scale disaster events are anticipated annually, impacting the health of vulnerable populations worldwide.</li> </ul>
Recognition of Climate Change as a Threat	<ul style="list-style-type: none"> <li>• National climate plans (NDCs) increasingly recognize climate change as a threat to human well-being and planetary health.</li> </ul>
Incorporation of Climate Targets	<ul style="list-style-type: none"> <li>• Climate targets are starting to acknowledge the positive impact of mitigation activities, including climate services, on human health.</li> </ul>
Underutilization of Climate Information	<ul style="list-style-type: none"> <li>• Less than 25 percent of health ministries globally utilize climate information and services to monitor health risks related to climate sensitivity.</li> </ul>
Lack of Tailored Data Services for Health	<ul style="list-style-type: none"> <li>• While around 74 percent of National Meteorological and Hydrological Services (NMHS) provide data services for health, these services are not specifically tailored to the sector's needs.</li> </ul>
Insufficient Data Sharing Agreements	<ul style="list-style-type: none"> <li>• At least 85 percent of nations lack a formal agreement between the Ministry of Health and NMHSs to facilitate data sharing and collaboration.</li> </ul>
Limited Cooperation and	<ul style="list-style-type: none"> <li>• Only 23 percent of health ministries have a health surveillance system</li> </ul>

Partnerships	that utilizes meteorological information to monitor climate-sensitive health risks, indicating limited cooperation and partnerships.
Health Threats in Low Human Development Index (HDI) Countries	<ul style="list-style-type: none"> <li>Low HDI countries, particularly in Africa, face significant health threats from climate change, including mortality from floods, heat, undernutrition, and the risk of diseases like malaria.</li> </ul>
Disproportionate Impact on Africa	<ul style="list-style-type: none"> <li>Africa disproportionately suffers from climate change despite being the least responsible for global greenhouse gas emissions. Around 50 percent of excess mortality resulting from climate change by 2050 is expected to occur in Africa.</li> </ul>

**READ:** <https://www.iasgyan.in/daily-current-affairs/world-meteorological-organization-state-of-climate-services>

## Air Quality Index (AQI)

### Context

- Based on the levels, the governments in areas like Delhi announce measures. As the AQI in NCR dipped to the 'severe' category, stage 4 of the Graded Response Action Plan was set in motion.

Air Quality Index - Particulate Matter	
301 – 500	Hazardous
201 – 300	Very Unhealthy
151 – 200	Unhealthy
101 – 150	Unhealthy for Sensitive Groups
51 – 100	Moderate
0 – 50	Good

### About AQI:

- AQI is a number, which is a measure of air quality. The higher the AQI, the worse the air.
- The color-coded AQI index was launched in India in 2014, and it helps the public and the government understand the condition of the air and what subsequent measures are to be taken to combat the situation, based on its severity.
- There are six categories of AQI, namely 'Good' (0-50), 'Satisfactory' (50-100), 'Moderately polluted' (100-200), 'Poor' (200-300), 'Very Poor' (300-400), and 'Severe' (400-500).

### AQI and its Calculation:

- The Air Quality Index (AQI) was launched as part of the Swachh Bharat campaign to simplify the common understanding of pollution levels.

### Transformation of Air Quality Data:

- The AQI, managed by the Central Pollution Control Board under the Ministry of Environment, Forests, and Climate Change, transforms complex air quality data from various pollutants into a single number (index value), nomenclature, and color.

### Measured Pollutants:

- Pollutants measured by AQI include PM 10, PM 2.5, Nitrogen Dioxide, Ozone, Carbon, and others.

### Weighted Calculation:

- The AQI calculates a composite index based on the levels of six or eight pollutants in the air. Each pollutant is given a weight based on its impact on human health.

### Composite Air Quality Index:

- The worst-weighted pollutant determines the composite air quality index. Instead of presenting multiple numbers and colors for each pollutant, the AQI provides a single number and color to denote the overall impact on air quality.

### Monitoring Stations:

- Monitoring stations across the country assess the levels of various pollutants to calculate the AQI.

## Kedarnath Wildlife Sanctuary

### Context

- A case was recently registered against a chopper company by the forest department in Uttarakhand for purportedly landing a helicopter in a restricted zone of Kedarnath Wildlife Sanctuary.

### Details

- A case has been registered against a chopper company under various sections of the Wildlife Protection (Amendment) Act, 2022 by the forest department in Uttarakhand for purportedly landing a helicopter carrying Bollywood star Sara Ali Khan in a restricted zone of Kedarnath Wildlife Sanctuary, reports Shivani Azad.

### About Kedarnath Musk Deer Sanctuary

#### Location

- The Kedarnath Musk Deer Sanctuary (KWS) is situated in the Rudraprayag and Chamoli districts of Uttarakhand, India.
- Named after the renowned Hindu temple of Kedarnath, located just beyond its northern border.
- Its primary purpose is the conservation of the endangered Himalayan musk deer.
- Largest protected area in the western Himalayas.

#### Establishment

- Established in 1972, covering an extensive area of 975.20 km<sup>2</sup>.
- Encompasses the upper catchment areas of the Alaknanda and Mandakini Rivers.

#### Geographical Features

- Altitude ranges from 1,160 to 7,068 meters.
- Bordered by majestic peaks, including Kedarnath (6940 m), Mandani (6193 m), and Chaukhamba (7068 m) in the north.
- Falls under the West Himalayan Zone in the Palearctic realm.

#### Vegetation

- Enriched with temperate forests.
- Higher and upper regions boast sub-alpine and alpine coniferous forests.
- Lush green meadows adorn the high-altitude regions.

#### Flora

- Diverse flora includes oak, rhododendrons, chir pine, and alpine meadows.
- The abundance of Himalayan flowering plants contributes to the sanctuary's rich biodiversity.

### Fauna

- Home to a variety of mammals, including the elusive Musk deer, Himalayan Thar, Himalayan Black bear, Snow Leopard, and more.
- Avian enthusiasts can spot birds like Monal, Koklass, and Himalayan Griffon, showcasing the sanctuary's avifauna diversity.

## **Global Tiger Recovery Program**

### Context

- Countries have submitted population numbers from 2010-2022 to, CITES.

### Details

- The St. Petersburg Declaration set a deadline of 2022 for the countries to achieve the goal of doubling tiger numbers.
- The year 2022 marked a critical milestone for assessing the progress and success of the Global Tiger Recovery Program.
- GTRP and the associated commitments laid the foundation for ongoing efforts and partnerships aimed at securing the future of wild tigers.

### About Graded Response Action Plan

#### Launch and Background

- The Global Tiger Recovery Program (GTRP) was initiated in 2010 under the Global Tiger Initiative (GTI), spearheaded by the World Bank.
- The program aimed to address the alarming decline in the population of wild tigers and implement strategies for their conservation.

#### St. Petersburg Declaration (2010)

- The launch of GTRP was closely tied to the St. Petersburg Declaration in 2010.
- During this declaration, 13 tiger range countries made a solemn commitment to reverse the decline of tiger populations.
- The primary goal was to double the number of wild tigers by the year 2022.

#### Key Objectives

- The overarching objective of GTRP was the conservation and recovery of wild tiger populations globally.
- The program outlined specific strategies and actions to be taken by tiger range countries to

achieve the ambitious target of doubling tiger numbers.

### **Country Commitments**

- The participating countries committed to implementing measures aimed at protecting and restoring tiger habitats, enhancing anti-poaching efforts, and addressing the various threats faced by wild tigers.

### **Significance**

- GTRP represented a concerted international effort to address the conservation challenges faced by tigers.
- The commitment made by the tiger range countries was a crucial step in fostering collaboration and shared responsibility for the survival of this endangered species.

**READ:** <https://www.iasgyan.in/daily-current-affairs/global-tiger-recovery-program#:~:text=Global%20Tiger%20Recovery%20Programme%202.0,with%20collaborators%20like%20the%20WWF.>

## **Red Sanders**

### **Context**

- India has been removed from the Review of Significant Trade process for Red Sanders.



### **About India's Successful Outcome in the CITES Review of Significant Trade for Red Sanders:**

#### **Background**

- India has been under the Review of Significant Trade (RST) process for Red Sanders since 2004.
- The RST process is a mechanism within the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to address trade-related concerns and ensure proper implementation of conservation measures.

### **CITES Standing Committee Meeting (77th)**

- The 77th meeting of the CITES Standing Committee took place in Geneva, Switzerland, from 6th to 10th November 2023.
- India, a Party to CITES since 1976, actively participated in discussions regarding the status of Red Sanders.

### **Red Sanders**

- Red Sanders is a high-market value tree endemic to specific districts in Andhra Pradesh, India.
- The species has faced threats of illegal harvesting and smuggling, leading to its depletion in natural forests.
- Listed as Appendix II under CITES since 1994.

### **Review of Significant Trade (RST) Process**

- The RST process involves heightened scrutiny of the exports of a species from a country to ensure compliance with CITES obligations.
- India has been updating the CITES Secretariat on the status of Red Sanders exports and conducted Non-Detrimental Findings for the species.

### **Positive Outcome**

- The 77th meeting resulted in the removal of Red Sanders from the RST process for India.
- The decision was unconditional, signifying a successful resolution and acknowledgment of India's efforts in implementing conservation measures.

### **Impact and Benefits**

- Removal from the RST process is expected to benefit farmers cultivating Red Sanders by allowing increased income through the cultivation and legal export of Red Sanders from plantations.
- This positive outcome aligns with India's commitment to conservation and sustainable trade practices.

**READ:** <https://www.iasgyan.in/daily-current-affairs/red-sanders-20>



## Sea buckthorn

### Context

- Recently, Ladakh's Sea Buckthorn fruit has got the Geographical Indication (GI) tag.

### Details

- The Geographical Indication Registry, under the Ministry of Commerce & Industry, has officially granted the GI tag to the Department of Industries & Commerce, Ladakh, and approved it as the Registered Proprietor for 'Ladakh Sea Buckthorn' in Class 31. This is the fourth GI Tag for Ladakh.

- Earlier, Ladakh Pashmina, Apricot (Raktse Carpo species), and Ladakhi wood carvings also



received the GI tags.

### About Sea Buckthorn

#### About

- Sea Buckthorn, locally known as 'Leh Berry,' is a remarkable plant native to Ladakh, celebrated for its unique characteristics and diverse applications.

#### Botanical Classification

- Belonging to the family Elaeagnaceae, Sea Buckthorn is a deciduous shrub that thrives in the challenging conditions of the Ladakh region.

#### Natural Distribution and Adaptability

- Spread across 11,500 hectares in Ladakh, Sea Buckthorn is well-adapted to extreme temperatures, ranging from minus 43 degrees Celsius to 40 degrees Celsius, showcasing its resilience and drought-resistant nature.

#### Unique Berries and Nutritional Value

- The plant produces small orange or yellow berries, renowned for their sour taste and exceptional richness in vitamins, particularly Vitamin C. These berries remain intact on the shrub during winter, providing a vital food source for various bird species.

#### Ecological Importance

- Sea Buckthorn plays a crucial role in the cold desert ecosystem by serving as protein-rich fodder for animals like sheep, goats, donkeys, cattle, and double-hump camels. The thorny and bushy structure of the shrub offers protective shelter, contributing to the maintenance of the fragile ecosystem in the cold arid region.

#### Traditional Uses

- Due to its scarcity of resources, Sea Buckthorn has been judiciously utilized by the local population for various purposes. Every part of the plant, including fruit, leaf, twig, root, and thorns, has found traditional applications, earning Sea Buckthorn the monikers of 'Wonder Plant,' 'Ladakh Gold,' 'Golden Bush,' or 'Gold Mine' of cold deserts.

**READ:** <https://iasgyan.in/daily-current-affairs/ladakhs-sea-buckthorn>

## World Energy Employment 2023

### Context

- The World Energy Employment 2023 report sheds light on crucial developments in the global energy sector, particularly in the context of the COVID-19 pandemic.

### Details:

- Amid increased demand to cut CO2 emissions and meet the net-zero emissions target, there has been a significant rise in investment in the clean energy segment. Hence, the sector has surpassed the fossil fuel industry in terms of job creation post-pandemic.



### Key Highlights of the Report:

#### Overview of the Global Energy Sector

- The International Energy Association's (IEA) recent report delves into the shifts and trends

in global energy employment, focusing on the repercussions of the pandemic on various energy industries and the subsequent recovery.

### **Employment Trends in the Global Energy Sector**

- Despite the challenges posed by the pandemic, the global energy sector witnessed a positive trend, exceeding pre-pandemic employment levels by 3.4 million in 2022.
- Clean energy industries played a pivotal role, contributing 4.7 million jobs, while fossil fuel sectors lagged by 1.3 million jobs.

### **Regional Variances in Employment**

- India emerged as a notable exception, experiencing growth in both clean energy and fossil fuel sectors, earning the fourth position globally in new clean energy job creation over the past three years.

### **Resilient Sectors Post-Pandemic**

- The report identifies five sectors that exhibited resilience and dynamism in terms of job creation post-pandemic. Solar PV, wind, electric vehicles (EVs) and battery manufacturing, heat pumps, and critical minerals collectively employ around 9 million workers globally by 2022.
- EVs and battery manufacturing, in particular, displayed the fastest growth, adding 1.8 million jobs.

### **Policy Recommendations**

- In addition to presenting current employment scenarios, the report offers crucial policy recommendations. These suggestions aim to facilitate a fair and inclusive shift to a low-carbon economy, prioritizing the creation of quality jobs and enhancing social welfare.

### **Implications for the Clean Energy Transition**

- The disproportionate growth in clean energy sectors compared to fossil fuels suggests a significant transformation in the global energy landscape.
- The report underscores the ongoing transition towards sustainable and renewable energy sources, with sectors like solar PV, wind, and electric vehicles leading the way.

## **NEST Initiative**

### **Context**

- Recently Indian Green Building Council launched the 'NEST' initiative.



### **Details**

- The annual IGBC Green Building Congress 2023 will provide a platform for the construction industry stakeholders in the country to create a sustainable building environment for achieving net zero carbon emission goals, says the chairman of the IGBC Chennai chapter.

### **About NEST**

#### **About**

- 'IGBC Nest' is a **first-of-its-kind eco-friendly, self-developed framework** and certification.

#### **Objective**

- It aims to bring **awareness and drive individual owners** to build a sustainable home with no or meager additional cost.
- It is aimed at controlling and limiting carbon emissions.
- The move is toward achieving the country's net zero goal by 2070.

#### **Working**

- The initiative encourages the house **owners to adopt green** measures that are simple and have impacts on addressing resource efficiency and occupant's health and well-being.
- The **IGBC Nest framework throws light on water and energy efficiency** besides harnessing solar energy.

#### **Mission**

- The **mission is to ensure every building in India is a green building** that will not only uplift the economic status of every homeowner but also increase life expectancy with better health benefits.

### Significance

- **IGBC provides a platform** that brings industry leaders, policymakers, and technology providers together to exchange insights and visions on sustainable building practices during the conference.

### Development

- **IGBC's Nest framework and certification** have been developed specifically for individual homeowners to help them reduce energy costs by 20-30 percent and reduce water requirements by 30-50 percent.

## Ozone Hole over the Antarctic

### Context

- According to a recent study, published in Nature Communications, stated that the Antarctic Ozone Hole has been massive in the last four years.

### Details

- The ozone hole over the Antarctic has not only grown larger but also thinner throughout most of the spring, according to a new study.
- Despite making a recovery in area and depth since the 2000s, the Antarctic ozone hole has been massive in the last four years.

### Key Highlights of the Study

#### Current Scenario

- **The Antarctic ozone hole, a significant environmental concern,** has displayed unexpected behavior, challenging the anticipated recovery trend observed since the 2000s.
- **Recent years have witnessed consistent large size and thinning** of the ozone hole, indicating a deviation from the expected progress.

#### Ozone Concentration Reduction

- **At the core of the ozone hole,** the concentration of ozone has experienced a notable reduction, showcasing substantial thinning of the ozone layer. The concentration decline has been marked, with a **26% reduction from 2004 to 2022.**
- This decline is noteworthy considering global efforts outlined in the Montreal Protocol to curb human-generated ozone-depleting chemicals.

### Polar Vortex Dynamics

- **The Antarctic ozone hole is intricately linked to the polar vortex,** a circular wind pattern in the stratosphere prevailing during winter until late spring. Within this vortex, Antarctic air descends from the mesosphere into the stratosphere.
- This descent brings natural chemicals, **such as nitrogen dioxide, impacting ozone chemistry in October.**

### Factors Influencing Ozone Depletion

- Several meteorological conditions contribute to the size and behavior of the **Antarctic ozone hole.** These include temperature variations, wind patterns, aerosols from events like wildfires and volcanic eruptions, and fluctuations in the solar cycle.
- Understanding these factors is crucial for comprehending the dynamics of ozone depletion.

### Recommendations for Further Research

- **Air Descent Mechanisms:** Further research is imperative to unravel the intricacies of the descent of air from the mesosphere and its specific impacts on ozone chemistry.
- Understanding these mechanisms holds the key to predicting and addressing future developments in the Antarctic ozone hole.
- **Holistic Investigation:** A holistic approach that considers the interplay of various factors influencing ozone depletion is necessary. This includes exploring the combined effects of **meteorological conditions, natural chemicals, and external influences such as wildfires and volcanic activities.**

## Global Carbon Budget

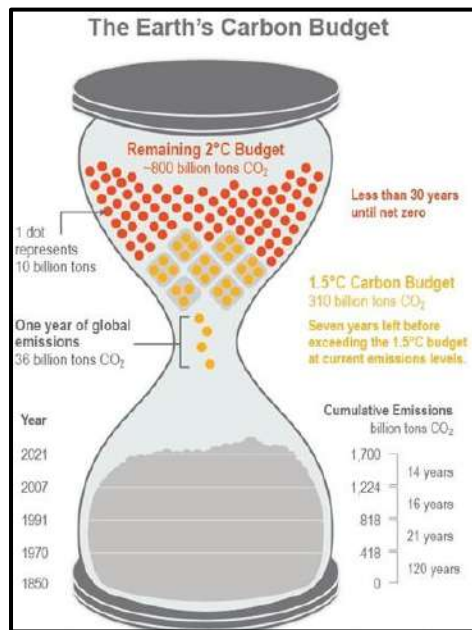
### Context

- India needs to secure a fair and equitable share of the global carbon budget at COP 28, as it is a key factor in limiting global warming.

### About Global Carbon Budget

- **The Global Carbon Budget represents the allowable amount of carbon dioxide (CO<sub>2</sub>) emissions** that humanity can release while still adhering to the goal of containing global warming within 1.5°Celsius, as outlined in the

Paris Agreement. This comprehensive budget encompasses emissions from various sources, including the atmosphere, regional emissions, CO<sub>2</sub> released from land usage, and contributions from man-made projects.



**Contributing Factors:**

- **Atmospheric Carbon Levels:** The budget considers the levels of carbon in the atmosphere, both natural and anthropogenic, to gauge the impact on global temperatures.
- **Land Usage Emissions:** CO<sub>2</sub> emissions stemming from land usage, such as deforestation or changes in land cover, are integral components of the budget.
- **Man-Made Projects:** Emissions resulting from human activities and projects, spanning diverse forms, are factored into the budget calculations.
- **Global Carbon Project (GCP):** The Global Carbon Budget is a product of collaborative efforts under the Global Carbon Project (GCP). This international initiative aims to comprehensively analyze carbon dynamics, providing crucial insights into the Earth's carbon cycle and its implications for climate change.
- **Connection to the Carbon Cycle:** Embedded within the broader carbon cycle, the Global Carbon Budget illuminates the intricate

processes by which Earth's carbon reservoirs are augmented or diminished. This holistic perspective aids in understanding the interconnectedness of natural and human-induced carbon fluxes.

- **Estimated Budget:** The projected Global Carbon Budget is approximately 1 trillion tonnes of carbon. This estimation serves as a critical benchmark for aligning emissions with climate targets and fostering sustainable environmental practices.

**Significance and Need:**

- **Climate Targets:** The Global Carbon Budget serves as a vital tool for assessing and aligning with climate targets, particularly the objective of limiting global warming to 1.5°Celsius. It provides a tangible framework for understanding the permissible limits of CO<sub>2</sub> emissions.
- **Environmental Impact:** Understanding how CO<sub>2</sub> emissions, both natural and anthropogenic, contribute to changes in the Earth's environment is essential. The budget offers insights into the role of human activities in shaping the planet's climate trajectory.

**Indian Green Building Council**

**Context**

- The Andhra Pradesh government has provided a 50 percent reimbursement incentive for capital expenditure related to green measures.

**Details**

- Eco-friendly measures, including rainwater harvesting, wastewater treatment, energy conservation, and use of recycled materials, have been implemented in the plant.
- According to the company, the facility achieved a 40 percent reduction in energy consumption, a 30 percent reduction in water consumption, and treated 100 percent of wastewater at its sewage treatment plant.

**About Indian Green Building Council (IGBC)**

**About**

- IGBC was established in 2001 and operates under the Confederation of Indian Industry (CII).

#### Objective

- It is recognized as India's leading certification body for green buildings.

#### Working

- IGBC provides a range of services, including the development of new green building rating programs, certification services, and green building training programs.

#### Annual Event

- The council hosts the Green Building Congress, its flagship annual event dedicated to green buildings.

#### Global Engagement

- IGBC is one of five countries represented on the board of the World Green Building Council, participating in global discussions on issues like COP (Conference of the Parties) and similar international platforms.

#### Environmental Categories

- IGBC's building rating system is based on six environmental categories: sustainable station facility, health, hygiene, and sanitation, energy efficiency, water efficiency, smart and green initiatives, and innovation and development.

#### Headquarters

- Located in Hyderabad.

## 5.8 SNIPPETS



### Blue Flag Certification

- Eight City beaches have been awarded Blue Flag status by the Wildlife and Environment Society of South Africa (WESSA), while two others were awarded pilot Blue Flag status.
- The beaches that have been successful in their Blue Flag accreditation applications are Bikini Beach, Camps Bay, Clifton 4th Beach, Fish Hoek, Llandudno, Melkbosstrand, Muizenberg, and Silwerstroom. Pilot blue flag status was awarded to Mnandi and Strandfontein.



### Dayapar Wind Project

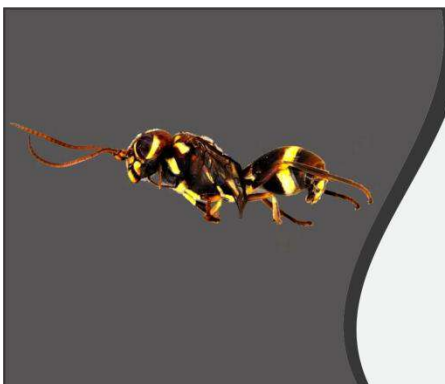
- Dayapar Wind Project is a 575MW onshore wind power project. It is located in Gujarat, India.
- NTPC Renewable Energy Limited (NTPC REL), a wholly owned subsidiary of NTPC, has declared the commercial operation of its first project, the 50 MW wind project at Dayapar in Kachch, Gujarat.
- Dayapar Wind is the first capacity in India to be declared commercial under the new Indian Electricity Grid Code and General Network Access Regime.



### New Gecko species

- The new species has been named 'Cyrtodactylusvairengtensis' after the town in Mizoram where it was found.
- The common name suggested for the new species is 'Vairengte bent-toed gecko'.
- The new species is a moderate-sized gecko, with adults measuring between 57.6mm and 73.6mm.
- "The distinct feature of this new species is the number of femoral pores which distinguishes it from other members of the Cyrtodactylus family.

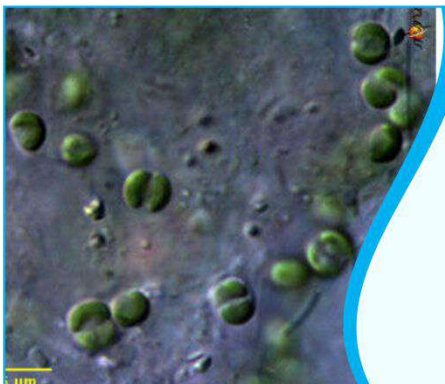
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### Taeniogonals Christian

- Scientists of the Zoological Survey of India have discovered a new species of wasp - Taeniogonalsdhrithiae. Taeniogonalsdhrithiae is a species in the family of Trigonalyidae.
- The new species of wasp is a winged insect. The new species has been discovered in the Ranipuram Hills area of the Western Ghat part of Kerala.
- These insects are hyperparasitoids (parasites of parasites) where females lay eggs on other parasitic wasps.

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### Picocystis Salinarum

- Picocystis is a monotypic genus of green algae.
- The sole species of this genus is Picocystis salinarum.
- It is placed within its class, Picocystophyceae in the division Chlorophyta.
- Picocystis salinarum cells under normal conditions have a spherical or oval shape.
- Their size ranges from 2 to 3µm in diameter.
- Under conditions of nutrient depletion, they appear to form a trilobe shape.

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### Jaguars

- This is the third largest Cat Predator in the World and an important species of the Amazon Rainforest.
- Jaguars (Panthera onca) are often mistaken for leopards but can be differentiated due to the spots within the rosettes on their coats.
- While many cats avoid water, jaguars are great swimmers and have even been known to swim the Panama Canal.
- Jaguar(Panthera Onca)
- Size: 50-110 kg | Status: Near Threatened.

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## Ghol Fish

- The Ghol fish is also known as the black-spotted croaker in many parts of the world.
- The scientific name of the Ghol Fish is *Protonibea dianthus*.
- It is the only species in the monospecific genus *Protonibea*.
- It is a species of marine ray-finned fish belonging to the family *Sciaenidae*, the drums and croakers.

## 5.9 1 MAINS & 5 MCQs

**Q1.** *There should be adequate financial commitments from the Global North towards the South which highlights the need for more grant-based climate finance, to positively impact developing countries. Comment.*

**Answer:**

- The call for adequate financial commitments from the Global North towards the Global South, particularly in the form of more grant-based climate finance, underscores the imperative of addressing climate change on a global scale. This comment explores the significance of such commitments and their potential positive impact on developing countries.

**Need for More Grant-Based Climate Finance**

1. **Addressing Capacity and Affordability:** Grant-based climate finance is particularly important for developing nations with limited financial capacity.
2. **Encouraging Ambitious Climate Actions:** Grants eliminate the repayment obligation, fostering an environment where countries feel encouraged to adopt more ambitious climate actions without the financial constraints associated with loans.
3. **Resilience Building:** Grant-based finance is well-suited for projects aimed at building climate resilience in vulnerable regions. It

allows for the implementation of long-term strategies that enhance adaptive capacity, protect ecosystems, and strengthen communities against the impacts of climate change.

**Positive Impact on Developing Countries**

1. **Technology Transfer and Capacity Building:** Adequate financial commitments, especially in the form of grants, facilitate technology transfer and capacity building.
  2. **Bolstering Sustainable Development:** Grant-based finance supports sustainable development by addressing the interconnected challenges of poverty, environmental degradation, and climate change.
  3. **Fostering Global Cooperation:** Robust financial commitments from the Global North demonstrate a commitment to global cooperation in the face of a shared planetary crisis.
- The need for adequate financial commitments from the Global North, with a focus on more grant-based climate finance, is not only a matter of global justice but also a pragmatic approach to addressing the complex and interlinked challenges posed by climate change. Such commitments have the potential to create a more inclusive, resilient, and sustainable future for all nations.

**Q2. Which organization releases the Adaptation Gap Report?**

- A) United Nations Conference on Environment and Development (UNCED)
- B) Council on Environmental Quality (1981)
- C) United Nations Environment Programme (UNEP)
- D) Conservation International

**Choose the correct code.**

- 1. A
- 2. B
- 3. C
- 4. D

**Q3. Consider the following statements with reference to Black-Spotted Croaker:**

- 1. The bladder of the fish is used in the wine industry.
- 2. Due to heavy pollution, it has been forced to reside in the deep ends of the water rather than on the surface.
- 3. This fish is known locally as Telia in Odisha.

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

- A) 1 and 3 only
- B) 2 only
- C) All
- D) None

**Q4. Consider the following statements:**

- 1. World Trade Organization launched the Review of Significant Trade (RST) Management System.
- 2. India has been removed from the Review of Significant Trade process for Red Sanders.
- 3. Red Sanders is listed as Appendix II under CITES since 1994.

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

- A) Only 1
- B) Only 2
- C) All 3
- D) None

**Q5. Recently, Cnemaspisrashidi was in the news. What is it?**

- A) Gecko
- B) Frog
- C) Snail
- D) Beetle

**Choose the correct code.**

- 1. A
- 2. B
- 3. C
- 4. D

**Q6. Consider the following statements with reference to NEST Initiative.**

- 1. It is an initiative of the Ministry of Environment, Forest and Climate Change of India.
- 2. The mission is to ensure that every building in India is a Green Building.
- 3. It has been developed specifically for individual homeowners to help them reduce energy costs and reduce water requirements by 100 percent.

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

- A) Only 1
- B) Only 2
- C) All 3
- D) None

**ANSWERS: 2) 1, 3) D), 4) B, 5) 1, 6) A**



## 6. SOCIAL ISSUES

### 6.1 PRADHAN MANTRI GARIB KALYAN ANNA YOJANA (PMGKAY)

#### Context

- Prime Minister Narendra Modi has announced an extension of the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) free ration scheme for another five years.

#### About

- Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY) is a scheme as part of Atmanirbhar Bharat to supply free food grains to migrants and poor.

#### Launch

- Introduced in 2020 during the Covid-19 pandemic, the PMGKAY was launched with the aim of providing 5 kg of free foodgrains to eligible ration card holders under the National Food Security Act, 2013.

#### Operation

- The program is operated by the Department of Food and Public Distribution under the Ministry of Consumer Affairs, Food and Public Distribution. But the nodal ministry is Ministry of Finance.

#### Merger

- While the NFSA itself was introduced earlier, the two were merged in January 2023, following extensions to the PMGKAY scheme.

#### Aim and Objective

- The scheme aims to feed the poorest citizens of India by providing grain through the Public Distribution System, to all the priority households (ration card holders and those identified by the Antyodaya Anna Yojana scheme).

#### Benefits

- PMGKAY provides 5 kg of foodgrains to each family holding a ration card free of cost.
- It provides 5 kg of subsidized foodgrain costing ₹ 2-3 per kg that is provided under the National Food Security Act (NFSA).
- It is given to the families that fall under the Public Distribution System (PDS). However, the amount of food grains provided could vary depending on the categories of beneficiaries.

- Wheat has been allocated to 6 States/UTs, - Punjab, Haryana, Rajasthan, Chandigarh, Delhi, and Gujarat, and rice has been provided to the remaining States/UTs.

#### Note:

- Under the NFSA provisions, the beneficiaries under priority households receive 5 kg of food grains per person per month and 35 kg per family per month under Antyodaya Anna Yojana (AAY) at a subsidised price ranging from ₹ 1 to Rs 3 per kilogram for different types of food grains. Under the scheme rice, wheat and coarse cereals are supplied.

#### Eligibility

- Families belonging to Antyodaya Anna Yojana (AAY) and Priority Households (PHH) categories will be eligible for the scheme.
- PHH are to be identified by State Governments/Union Territory Administrations as per criteria evolved by them. AAY families are to be identified by States/UTs as per the criteria prescribed by the Central Government:
- Households headed by widows or terminally ill persons or disabled persons or persons aged 60 years or more with no assured means of subsistence or societal support.
- Widows or terminally ill persons or disabled persons or persons aged 60 years or more or single women or single men with no family or societal support or assured means of subsistence.
- All primitive tribal households.
- Landless agriculture labourers, marginal farmers, rural artisans/craftsmen such as potters, tanners, weavers, blacksmiths, carpenters, slum dwellers, and persons earning their livelihood on daily basis in the informal sector like porters, coolies, rickshaw pullers, hand cart pullers, fruit and flower sellers, snake charmers, rag pickers, cobblers, destitutes and other similar categories in both rural and urban areas.
- All eligible Below Poverty Line families of HIV positive persons.

### Significance

- The scale of this welfare scheme makes it the **largest food security program in the world.**
- As of 2023, there are over 81.35 crore beneficiaries of the PMGKAY scheme, equivalent to over two-thirds of India's population.
- The PMGKAY **mitigated the pandemic's impact on the poorest of Indians.**
- The Public Distribution System and PMGKAY have been **lauded for not only ensuring basic food security but also for functioning as effective income support, allowing the impoverished to afford other essential commodities.**

### Rationale behind the extension of the Scheme

- In the 2023 Global Hunger Index, **India was ranked 111th among 125 countries, with a score of 28.7, indicating a serious level of hunger.**
- India trailed behind neighbouring countries — Pakistan stood at 102, Bangladesh at 81, Nepal at 69, and Sri Lanka at 60. According to the index, India's rate of undernourishment is 16.6%, the under-five mortality rate is 3.1%, and the prevalence of anemia among women aged 15 to 49 years is a staggering 58.1%.

### Addressing the gap

- Economists and food rights activists have pointed out that at least **10 crore deserving individuals could be excluded due to the absence of an updated population census,** with India's population has now surpassed 140 crore.
- However, some states have taken the initiative to expand benefits through the NFSA and other programs, recognizing and addressing the gap.
- Critics argue that **such schemes lack the long-term sustainability of more structural welfare initiatives like free healthcare, education, and the rural job guarantee programme MGNREGA.** Politics aside, these schemes should be evaluated as part of a broader social safety net.
- Historically, they have provided crucial relief during times of distress, enabled the government to better manage food buffer stocks, and reduced the wastage of procured food grains, particularly when Food Corporation of India's procurement figures for rice and wheat are high.
- Rights activists are now **advocating for the universalization of the PDS,** arguing that targeted distribution systems are prone to errors and inefficiencies, leading to misallocation and diversion of food grains.
- They point to the success of universal PDS in states like Tamil Nadu, **where anyone in need can access assistance, bypassing the pitfalls of a flawed targeting mechanism.**

### Closing Remarks and Way Ahead: From food security to nutrition security

- Often, having three meals a day is not tantamount to proper nourishment. The government needs to address that in its present form, the PDS system does not offer wholesome nutrition.
- It has often been emphasized by critics that the **PDS needs to diversify beyond cereals to proteins in the form of pulses and millets apart from edible oils.**

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- The food basket offered under PDS comprises chiefly food grains like rice and wheat, which provide calories to beneficiaries. However, that alone is not enough as protein and micronutrient deficiencies are prevalent in India.
- Indians are troubled by nutritional deficiency and not hunger per say. Some of the nutritional deficiencies could be offset to some extent by more focus on promotion of food nutrient dense food items like millets through PDS. Hence, it is time the policy focus changed to address this. For this, setting up community kitchens that provide balanced, cooked meals to the targeted population at subsidised prices may work even better.

## 6.2 GLOBAL TB REPORT 2023

### Context

- India accounts for 27 per cent of the total TB cases in the world, according to the recently released Global TB Report 2023.

### Global TB Report 2023

- This report published by the World Health Organization (WHO) provides a comprehensive, up-to-date assessment of the tuberculosis (TB) epidemic worldwide.
- Using data from 192 countries, the 2023 edition of the report examines progress in the prevention, diagnosis, and treatment of TB at global, regional, and country levels.
- The report analyzes TB disease trends and updates progress toward meeting global TB targets.

### Findings of Global TB Report 2023

- The 2023 report finds significant global recovery in the number of people diagnosed with TB and receiving treatment in 2022.
- 7.5 million people were newly diagnosed with TB in 2022.
- TB remains the second leading cause of death from an infectious disease worldwide.

### What does the 2023 report say about mortality in India?

- A sudden drop in mortality due to TB was noted in the 2023 report.
- This was owing to the WHO report accepting India's Sample Registration System dataset as the basis for the calculations instead of the Global Burden of Disease report.

- With the change in dataset, India's TB mortality dropped from 4.94 lakhs in 2021 to 3.31 lakhs in 2022.
- This resulted in a reduction in India's contribution towards global mortality from 36 per cent in the previous years to 26 per cent in 2022.

### How many people get TB in India?

- Nearly 28.2 lakh people got TB in India in 2022, meaning one person gets TB every 11 seconds in India.
- India's contribution to the global burden is 27%, which is down one percentage point from the previous year's 28%.
- There has been an increase in reporting of TB cases.
- The Global TB report 2023 shows that reporting of cases has improved in India, going beyond the pre-pandemic levels. This is despite the fact that India, along with Indonesia and the Philippines, accounted for 67 per cent decline in reporting of TB cases globally during the pandemic.
- India reported 24.2 lakh cases in 2022 similar to the 24.04 lakh cases reported during 2019.
- India was the only country to have completed a National TB prevalence survey since 2019.

### What does the report say about coverage of TB treatment in India?

- The report acknowledged an increase in coverage of TB treatment in India, increasing by 19 per cent over the previous year.
- In fact, India was among only four countries among the 30 high-burden countries in the

world that were able to achieve more than 80 per cent treatment coverage.

- Globally, the report notes, **the treatment coverage in 2022 reached the pre-pandemic levels of 70%.**
- India has undertaken **several initiatives towards TB elimination** including active case finding, scaling up of more accurate molecular testing to block level, screening services made

available through the health and wellness centres, and engagement of the private sector as well.

- Ni-kshay Mitra where people provide additional nutritional support to TB patients has also **resulted in the adoption of over 11 lakh TB patients.** This support is in addition to government's R500 nutritional support.

**What is India's TB elimination target?**



- India has set a target of 2025 for eliminating TB in the country. The national strategic plan 2017-2025 sets the target of no more than 44 new TB cases per lakh population by 2025.
- The 2023 report pegs this number at 199 cases per lakh. Achieving this target is a big task as the plan had envisaged an incidence of only 77 cases per lakh population by 2023.
- The programme also aims to reduce the mortality to 3 deaths per lakh population by 2025.
- Even with the WHO accepting the lowered estimates for India, this stands at 23 per lakh population.



### 6.3 PARLIAMENTARY COMMITTEE RECOMMENDATIONS ON ADULTERY

#### Context

- The Parliamentary Committee on Home Affairs has suggested that adultery should be re-instituted as a crime.

#### The concept of adultery under the IPC

- **Section 497 of the Indian Penal Code, 1860,** defines the offence of adultery.
- This offence covers **sexual intercourse by a man with the wife of another man.**

#### Punishment for the offence of adultery

- The punishment given under Section 497 is imprisonment **for a term extending to five years, a fine, or both.**
- However, this Section was **struck down by the Supreme Court of India** in the landmark case **of Joseph Shine v. Union of India (2018)** and is therefore not applicable today.

## Landmark judgements of SC on punishment for adultery in India

### Yusuf Aziz versus State of Bombay case

- Adultery law violated the **fundamental right of equality guaranteed under Articles 14 and 15** of the Constitution.
- Section 497, governing adultery law, **discriminated against men by not making women equally culpable in an adulterous relationship.**

### Sowmithri Vishnu case

- **Women need not be included as an aggrieved party in the name of making the law even handed.**

### V Revathy versus Union of India of 1988

- **Not including women in prosecution of adultery cases promoted "social good".**
- It offered the couple a chance to "make up" and keep the sanctity of marriage intact.

### Two more important legal views in connection with adultery law.

- The **Law Commission of India Report of 1971** (42nd report) and the **Malimath Committee on Criminal Law Reforms of 2003** recommended amendment to the adultery law. Both argued to **make Section 497 of the IPC gender-neutral.**

### FINALLY: Joseph Shine v. Union of India (2018)

- The Supreme Court struck down Section 497 of the IPC on the grounds that it **violated Articles 14, 15 and 21 of the Constitution.**
- The five Judge Bench unanimously, in four concurring judgments, held that the law was **archaic, arbitrary and paternalistic, and infringed upon a woman's autonomy, dignity, and privacy.**

## Decriminalization of Adultery

- Sec. 497 of IPC restricted the freedom of women and was a **gender gender-biased law.**
- It had been a **clear violation of her right to life.**
- With whom a woman should indulge in sexual intercourse will be decided by her husband. This means if her husband approves to his wife's relationship with a third party, it would not be considered as adultery which was a matter of concern that needed to be changed.

## Pros and Cons of Decriminalizing Adultery

### Pros:

- Decriminalizing adultery may be seen as **a step towards gender equality and individual freedom**, as it treats both men and women equally, and criminalizing adult extramarital affairs may be viewed as a violation of personal autonomy and privacy.
- Decriminalization may **reduce the risk of extortion and blackmailing in cases of adultery.**
- Adultery prosecutions and the associated criminal proceedings **can put a significant burden on the judicial system and can be a waste of state resources and time.**
- Decriminalization can have a positive impact on the social stigma associated with adultery and **may encourage couples to look for peaceful ways to resolve their marital problems** instead of resorting to criminal complaints or litigation.

### Cons:

- Criminalizing adultery may be viewed as **an effective deterrent to extramarital affairs** and may discourage individuals from cheating on their partners and destabilizing marriages.
- Adultery can profoundly impact families and children, and criminalizing it may be viewed as **a way to protect the institution of marriage and strengthen family values.**
- Decriminalizing adultery may be perceived as **promoting immoral behaviour and reducing moral standards within society.**
- Adultery can be a significant factor in divorce, and decriminalizing it **may increase the divorce rate.**
- Decriminalization **may lead to other societal problems** resulting from extramarital relationships, such as **illegitimate children, which could negatively impact families and children.**

## Key recommendations of the Parliamentary Committee (RECENTLY)

### On Re-criminalizing adultery

- The **recommendation to re-criminalize adultery** is highly controversial due to its

infringement on personal privacy and individual autonomy.

- The previous law, invalidated by the Supreme Court in 2018, faced widespread criticism for being an intrusion into the private lives of individuals.
- **Critics argue that re-criminalizing adultery, even if made gender-neutral, raises significant privacy concerns.**
- The law's potential to interfere with consensual adult relationships can lead to unwanted surveillance, sparking worries about government intrusion into intimate affairs.
- **Gender-neutral provisions, while aiming for fairness, might open avenues for misuse.**
- Concerns exist about false accusations and unfair targeting of individuals, leading to legal harassment. Striking a balance between moral concerns and individual freedoms is a challenge in this context.

#### Recommendations on Section 377

- **Retaining elements of Section 377 for serious offences like non-consensual acts or those involving minors aims to address sexual crimes.** However, the revised law must align with contemporary notions of justice, consent, and human rights, ensuring a balance between protecting individuals and upholding fundamental rights.
- **The 2018 Supreme Court decision decriminalizing homosexuality marked a milestone for LGBTQ+ rights.** Attempts to reintroduce laws criminalizing same-sex relationships might face strong opposition from LGBTQ+ advocates and allies, emphasizing the principles of equal rights, non-discrimination, and personal freedom.
- Laws addressing sexual offences should reflect evolving societal norms and international human rights standards. Careful consideration is essential to create legislation that not only protects individuals but also respects fundamental rights, fostering a just and inclusive society.

## **Current position of adultery in India**

### Under the civil laws

- The act of adultery is a ground for dissolution of marriage through divorce and can also result in the wife getting less or no maintenance from the husband if she is the guilty party.

### Under Hindu law

- As per Section 13(1) of the Hindu Marriage Act, 1955, adultery is a ground for divorce.

### Under Muslim law

- Under Muslim law, if the husband alleges that his wife committed adultery, he has two options, as per the Dissolution of Muslim Marriage Act, 1939, which allows the husband to withdraw his allegations, but if it is proved in court that the allegations were false, the wife is entitled to get a decree of lian.

### Under Christian law

- The Bombay High Court in the case of Pragati Varghese v. Cyril Georg (1997) allowed adultery to be the independent ground to obtain a divorce for a woman.
- As per Section 27 of the Special Marriage Act, 1954, adultery is an independent ground for obtaining a divorce.

### In the case of military personnel

- According to Section 45 of the **Army Act, 1950**, such a person can be cashiered, i.e., dismissed from service on the charges of misdemeanour, and if he is a junior officer or a warrant officer, he is liable to be dismissed.
- Whereas, **Section 46 of the Army Act makes the officer liable for imprisonment up to 7 years due to disgraceful conduct** of an indecent nature as given under clause (a), which may include committing adultery.

## **Conclusion**

- In conclusion, it can be said that Section 497, which covered adultery, which was a criminal offence earlier, has now been declared unconstitutional by the Supreme Court in the Joseph Shine judgement.
- This position is, however, **not uniform throughout the country because the army**

- still holds the power to criminally punish its officers for committing adultery.
- The 2018 verdict of the Supreme Court was considered a **win for gender equality laws and a step in the direction of truly recognising the principle of equality as enshrined in Article 14 of the Constitution.**

- But **implementing comprehensive legal reforms** to address issues related to adultery, including its impact on divorce, alimony, and child custody, is crucial. **Clear and well-defined legal provisions** can help reduce ambiguity and ensure fairness in legal proceedings.

## 6.4 CHILD ADOPTION IN INDIA

### Context

- The Supreme Court said that children living in childcare institutions (CCI), whose parents have not visited them for over a year or have “unfit” parents or guardians, should be identified and brought into the adoption pool.

### Child adoption in India

- Child adoption in India is a legal and emotional process that brings together children in need of a loving home and prospective parents willing to provide one. However, the adoption landscape in the country is fraught with challenges, including lengthy and complex procedures, illegal practices, and the need for reform.

### Status of Child Adoption in India

- Child adoption in India is governed by two primary laws: the **Hindu Adoption and Maintenance Act, 1956 (HAMA)** and the **Juvenile Justice Act, 2015 (JJ Act)**.
- The Central Adoption Resource Authority (CARA) is the central body responsible for monitoring and regulating in-country and inter-country adoptions.
- Under HAMA, Hindus, Buddhists, Jains, and Sikhs are legalized to adopt children. This act provides relatively straightforward procedures for adoption. On the other hand, the JJ Act has more complex eligibility criteria for adoptive parents, requiring registration on CARA's portal and a home study report by a specialized adoption agency.

### Recent Developments

- In January 2023, the Bombay High Court issued a directive that confused the adoption

process. It instructed the state government not to transfer pending adoption proceedings to District Magistrates, as mandated by the Juvenile Justice (Care and Protection of Children) Amendment Act, 2021. This raised concerns about the potential hindrance to progress in resolving adoption cases.

- However, there have been positive developments as well. The **Adoption Regulations-2022**, introduced by the Ministry of Women and Child Development, aimed to streamline the adoption process.
- District Magistrates (DMs) and Child Welfare Committees were instructed to upload adoption orders and case status in real-time.
- Since the implementation of these regulations, 2,297 adoption orders have been issued by DMs nationwide, making significant progress in resolving pending cases.

### Major Challenges Related to Adoption in India

- **Lengthy and Complex Adoption Process:** The adoption process in India can be excessively bureaucratic and time-consuming. Data from CARA- Central Adoption Resource Authority indicates that over 30,000 prospective parents are currently waiting to adopt, while only 2,131 children are legally free for adoption. Moreover, around two-thirds of these children have special needs, and it takes an average of three years for the adoption process to be completed.
- **Illegal and Unregulated Practices:** There have been disturbing instances of illegal adoption practices in India, including baby trafficking and child-selling. Unregistered adoption agencies have exploited vulnerable children

and biological parents. Notably, in 2018, Mother Teresa's Missionaries of Charity faced allegations of a "baby-selling racket."

- **Returning Children after Adoption:** India has seen a troubling trend of adoptive parents returning children after adopting them. In 2020, CARA reported that over 1,100 children adopted across the country had been returned to child care institutions by their adoptive parents in the last five years.

### The Way Forward

- **Strengthening Adoption Laws:** India needs to review and update adoption laws to streamline the process, making it more transparent and efficient. This could involve simplifying paperwork, reducing delays, and addressing any ambiguities or loopholes in the existing legislation.
- **Post-Adoption Services:** Comprehensive post-adoption support services should be established to assist both adoptive parents and adopted children. These services might include counseling, educational support,

access to healthcare, and guidance for managing challenges that may arise during the adoption journey.

- **Awareness and Education:** Promoting awareness about adoption as a viable option for building families is crucial. This includes educating the public about the benefits, procedures, and legal aspects of adoption. It's essential to encourage positive attitudes towards adoption and dispel misconceptions or stigma associated with it.

### Conclusion

- Child adoption in India is a critical process that provides children with loving homes and prospective parents with the opportunity to build families. However, several challenges, including a complex process and illegal practices, need to be addressed.
- Recent developments, such as the Adoption Regulations-2022, show promise, but **there is a pressing need for further reform to ensure that the best interests of the child are upheld throughout the adoption journey.**

## 6.5 FEMICIDE

### Context

- A recent study of UN women and the United Nations Office on Drugs and Crime show that the Fulfilment of 'new women' in India is a myth.
- The UN study is titled as "Gender-related killings of women and girls (femicide/feminicide)".

### Femicide

- Femicide, or feminicide, refers to the intentional killing of women or girls because of their gender.

### Key Statistics (UN Study)

- In 2022, about 88,900 women and girls were intentionally killed worldwide on the grounds of gender-related factors. This is the highest number of such fatalities in a year in the past 20 years.

- Of the 88,900 female homicide victims in 2022, 48,800, or 55%, were killed by family members or intimate partners.
- Only 12% of male victims of murder were slain by somebody they knew.
- Women are more likely to be murdered by their spouses or someone known to them; as a result, women are vulnerable to physical violence, mostly from members of their immediate family.

### NCRB Report on Femicides

- According to the NCRB report, 179 women between the ages of 18 and 30 were reported as victims of femicide in 19 Indian cities, including Ahmedabad, Bengaluru, Chennai, Coimbatore, Delhi City, Ghaziabad, Hyderabad, Jaipur, Indore, Kanpur, Kochi, Kolkata, Kozhikode, Lucknow, Mumbai, Nagpur, Patna, Pune, and Surat.



### What are the main reasons for Femicides?

- Gender inequality and discrimination
- Patriarchal norms and values (honor killings or dowry-related murders), and
- Controlling or exerting authority over women's lives, decisions, or behaviors can result in extreme violence and murder.
- Lack of access to resources and
- Support services for survivors.

### Closing Remarks

- It is essential to remember that femicide is a symptom of a much wider problem.

- It is patriarchal norms and gender inequality that are both the cause and consequence of gender-based violence in society.
- To effect change, we need to address systematic gender-inequality, and societal tolerance of violence against women, and properly fund resources and services to support victims to access help as well as perpetrators to be held accountable and have targeted interventions to effect change. Femicide is not an inevitable part of life. It is preventable.

## 6.6 1 MAINS QUESTIONS

### Q1. *The Fulfillment of 'new women' in India is a myth in the context of Femicide. Do you agree?*

#### Answer

- Femicide, or feminicide, refers to the intentional killing of women or girls because of their gender. And a recent UN study titled "Gender-related killings of women and girls (femicide/feminicide)" paints a dismal picture of women in India.
- In 2022, about 88,900 women and girls were intentionally killed worldwide on the grounds of gender-related factors. This is the highest number of such fatalities in a year in the past 20 years.
- Of the 88,900 female homicide victims in 2022, 48,800, or 55%, were killed by family members or intimate partners.
- Only 12% of male victims of murder were slain by somebody they knew.
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#### Main reasons for Femicides

- Gender inequality and discrimination
- Patriarchal norms and values (honor killings or dowry-related murders), and
- Controlling or exerting authority over women's lives, decisions, or behaviors can result in extreme violence and murder.
- Lack of access to resources and
- Support services for survivors.

#### Way Ahead

- It is essential to remember that femicide is a symptom of a much wider problem.
- It is patriarchal norms and gender inequality that are both the cause and consequence of gender-based violence in society.
- To effect change, we need to address systematic gender inequality, and societal tolerance of violence against women, and properly fund resources and services to support victims to access help as well as perpetrators to be held accountable and have targeted interventions to effect change. Femicide is not an inevitable part of life. It is preventable.

# 7. SCIENCE & TECHNOLOGY AND HEALTH

## 7.1 STATE FOOD SAFETY INDEX (SFSI) 2023

### Context

- The State Food Safety Index (SFSI) published by the Food Safety and Standards Authority of India (FSSAI) assesses the food safety standards and practices in different states of India.

STATES WITH STEEPEST INDEX FALL		
State	2019	2023
Maharashtra	74	45
Bihar	46	20.5
Gujarat	73	48.5
Andhra Pradesh	47	24
Chhattisgarh	46	27

Source: SFSI reports; all scores out of 100

SAFETY MEASURE	
Parameter	Weight
Compliance	28
Consumer Empowerment	19
Human Resources and Institutional Data	18
Food Testing Infrastructure	17
Improvement in SFSI Rank (added in 2023)	10
Training and Capacity Building	8
<b>TOTAL</b>	<b>100</b>

### Details

- After adjusting for a new parameter included in the 2023 index, 15 out of 20 states recorded lower 2023 scores compared to 2019.
- Four years after the Food Safety and Standards Authority of India (FSSAI) published a state-wise index to spur food safety improvement, 19 out of 20 large states – including Maharashtra, Bihar, Gujarat, and Andhra Pradesh – recorded a drop in their 2023 scores from 2019.
- After adjusting for a new parameter included in the 2023 index, 15 out of 20 states recorded lower 2023 scores compared to 2019.
- The steepest fall in scores over five years was seen in Maharashtra, which scored 45 out of 100 in 2023 compared to 74 out of 100 in 2019, followed by Bihar, which scored 20.5 in

2023 compared to 46 in 2019, and Gujarat, which scored 48.5 in 2023 compared to 73 in 2019. Ensuring food safety is the task of each state's apex food safety authority.

### State Food Safety Index

- The State Food Safety Index (SFSI) is an annual evaluation initiated by the Food Safety and Standards Authority of India (FSSAI). It was first introduced by FSSAI in the year 2018-19.

### Objective of SFSI

- SFSI serves as a dynamic quantitative and qualitative benchmarking model, providing an objective framework for evaluating food safety across all States/Union Territories (UTs).
- It encourages states and UTs to improve their performance and establish strong food safety systems within their jurisdictions.

### SFSI evaluates states' performance on the following parameters

#### Food Testing Infrastructure:

- Parameter Weightage (2023):** 17% (20% in previous years)
- Average Score Trend:** The average score declined from 13 out of 20 in 2019 to 7 out of 17 in 2023.
- State Performance Decline:** Maharashtra, Andhra Pradesh, and Gujarat witnessed significant drops in scores, indicating a decrease in adequate testing infrastructure with trained personnel.
- Top Performers:** Kerala and Gujarat maintained stable performance, both scoring 13.5 out of 17, showcasing resilience amidst the overall decline.

#### Compliance:

- Parameter Weightage (2023):** 28% (30% in previous years)
- Average Compliance Score Trend:** Decreased from 16 out of 30 in 2019 to 11 out of 28 in 2023.

- **Notable Declines:** States like Jharkhand, Bihar, and Gujarat experienced significant declines in compliance-related tasks.
- **Top Performers:** Punjab and Himachal Pradesh emerged as top performers, showcasing the highest compliance scores in 2023.

#### **Consumer Empowerment:**

- **Parameter Weightage (2023):** 19% (20% in previous years)
- **Average Score Trend:** Relatively stable, with a minor increase from 7.6 out of 20 in 2019 to 8 out of 19 in 2023.
- **Bihar's Decline:** Bihar's score dropped significantly, while Tamil Nadu emerged as the top performer, indicating a strong focus on consumer empowerment initiatives.

#### **Human Resources and Institutional Data:**

- **Parameter Weightage (2023):** 18% (20% in previous years)
- **Average Score Trend:** Dropped from 11 out of 20 in 2019 to 7 out of 18 in 2023, indicating a decline in the availability of

human resources, including Food Safety Officers and Designated Officers.

- **Performance Challenges:** Even states like Tamil Nadu and Uttar Pradesh faced significant declines in scores, highlighting challenges in maintaining a skilled workforce.

#### **Training and Capacity Building:**

- **Parameter Weightage (2023):** 8% (10% in previous years)
- **Improvement:** Slight improvement was observed, with the average score increasing from 3.5 out of 10 in 2019 to 5 out of 8 in 2023, indicating enhanced efforts in training and capacity-building initiatives.

#### **Improvement in SFSI Rank:**

- **Parameter Weightage (2023):** 10%
- **Progress Difficulty:** 14 out of 20 large states received 0 points in this category, indicating minimal improvement in ranks from the previous year. Most states struggled to demonstrate significant progress, suggesting challenges in enhancing their rankings.

## 7.2 DEEP OCEAN MISSION

### **Context**

- The Deep Ocean Mission (DOM) is India's ambitious quest to explore and harness the depths of the ocean.

### **Details**

- As part of this initiative, India will, for the first time, embark on a journey to a depth of 6,000 meters in the ocean using an indigenously developed submersible with a three-member crew.
- The mission will require technologies to access and transport tonnes of valuable minerals from the ocean bed in an environmentally safe manner.
- The following interview, with M. Ravichandran, Secretary of the Ministry of Earth Sciences, breaks down the mission and its salient features and challenges. It was conducted by Bhavya Khanna, a scientist in the Ministry.

- DOM is India's ambitious program, chiefly implemented by the MoES. DOM was approved by the Union Cabinet in 2021 at a cost of nearly Rs 4,077 crore over five years in a phased manner.

### **The mission has six pillars**

1. **Development of technologies for deep-sea mining** and a manned submersible to carry three people to a depth of 6,000 meters in the ocean. The submersible will be equipped with a suite of scientific sensors, tools, and an integrated system for mining polymetallic nodules from the central Indian Ocean;
2. **Development of ocean climate change advisory services**, involving an array of ocean observations and models to understand and provide future climate projections;
3. **Technological innovations for the exploration and conservation of deep-sea biodiversity;**

4. **Deep-ocean survey and exploration** aimed at identifying potential sites of multi-metal hydrothermal sulfides mineralization along the Indian Ocean mid-oceanic ridges;
5. **Harnessing energy** and freshwater from the ocean; and
6. **Establishing an advanced Marine Station for Ocean Biology**, as a hub for nurturing talent and driving new opportunities in ocean biology and blue biotechnology.

#### About The 'New India 2030' document

- The 'New India 2030' document outlines a **blue economy** as the sixth core objective for India's growth. The years 2021-2030 have been designated by the United Nations as the '**Decade of Ocean Science**', and Prime Minister Narendra Modi has, on several occasions, emphasized the need for India to work towards sustainably harnessing the ocean's potential for the nation's growth.

#### About the Deep Ocean mission

- The Deep Ocean mission is an initiative to undertake deep ocean exploration focused on India's exclusive economic zones and continental shelf.
- It is under the **Ministry of Earth Sciences (MoES)**.

#### Objective

- It aims to search for deep-sea resources and minerals, flora, and fauna, including microbes, and study ways to sustainably utilize them.

#### Deep Ocean Mission includes:

- Developing systems for deep sea mining, launching a manned submersible.
- Deep-ocean exploration, including the purchase of a vessel for this.
- Deep-ocean biodiversity studies, bio-prospecting.
- Establishing a research facility in Goa for marine biology and engineering.
- Undertaking climate change surveys of seas around India.
- Making ocean thermal energy conservation efficacious.
- Generates power from the difference in temperatures.

#### Importance

- India's Exclusive Economic Zone spreads over 2.2 million square kilometers.
- India has been allotted a site of 75,000 square kilometers in the Central Indian Ocean Basin (CIOB) by the UN International Sea Bed Authority for the exploitation of polymetallic nodules (PMN).
- These are rocks scattered on the seabed containing iron, manganese, nickel, and cobalt.
- 380 million metric tonnes of polymetallic nodules are available at the bottom of the seas in the Central Indian Ocean.
- A fraction of that reserve can meet the energy requirement of India for the next 100 years.

**READ:** <https://www.iasgyan.in/daily-current-affairs/deep-ocean-mission-14>

## 7.3 BLETCHLEY DECLARATION ON AI

#### Context

- Minister Rajeev Chandrasekhar addressed the 1st Plenary session of 'AI Safety Summit 2023' in the UK.

#### Details

- The 2023 Artificial Intelligence Safety Summit is an **international conference discussing the safety and regulation of artificial intelligence**.

- It is being held in Bletchley Park, Milton Keynes, United Kingdom, on 1-2 November 2023.
- It is the **first-ever global summit on artificial intelligence**.

## Agenda at the Summit

### Bletchley Declaration:

- **Participants:** Representatives from 28 countries at the summit have issued the 'Bletchley Declaration.'
- **Objective:** The declaration emphasizes the need for international cooperation to effectively manage the challenges and risks associated with artificial intelligence (AI).

### Regulating Frontier AI:

- **Focus Area:** A key focus of the agreement is the regulation of "Frontier AI," referring to the latest and most powerful AI systems.
- **Rationale:** The recognition of the unique challenges posed by cutting-edge AI technologies underscores the importance of establishing regulatory frameworks.

### Concerns Raised:

- **Security Risks:** Heightened concerns have been expressed regarding the potential misuse of AI for terrorism, criminal activities, and warfare.
- **Existential Risk:** The summit has highlighted the existential risk posed to humanity as a whole by the uncontrolled development and deployment of advanced AI systems.

### International Cooperation:

- **Collaborative Approach:** The summit emphasizes the necessity of global collaboration in addressing the multifaceted challenges associated with AI.
- **Shared Responsibility:** Participants acknowledge that managing the impact of AI requires joint efforts, transcending national boundaries.

### Ethical Considerations:

- **Human-Centric Approach:** Discussions at the summit likely include the need to adopt an ethical and human-centric approach in the development and deployment of AI technologies.
- **Guiding Principles:** Establishing ethical guidelines for the responsible use of AI to ensure it aligns with human values and rights.

### **Understanding AI's Promises and Risks**

- **The Bletchley Declaration offers a comprehensive snapshot** of the global understanding of artificial intelligence's promises and risks.
- Furthermore, it acknowledges the potential for severe, even catastrophic, harm caused by AI, whether intentional or unintentional.
- It highlights the importance of safeguarding human rights, transparency, explainability, fairness, accountability, regulation, safety, human oversight, ethics, bias mitigation, privacy, and data protection.

### **Significance: Promising Start for International Cooperation**

- While consensus remains elusive, the summit marks a promising start to international cooperation on a topic that only recently gained recognition as a serious global threat.
- Importantly, these AI safety summits will continue to be held regularly, with the next one scheduled for Korea in six months and another in France a year from now.
- The hope is that these events will be as inclusive as the Bletchley Declaration promises, fostering global collaboration on AI safety.

## 7.4 MASSIVE AADHAAR DATA BREACH

### **Context**

- An American cyber security company has said that the personally identifiable information of many Indian citizens, including Aadhaar numbers and passport details, was being sold on the dark web.

### **Details**

- On October 15, Resecurity, an American cyber security company, said that personally identifiable information of 815 million Indian citizens, including Aadhaar numbers and

passport details, were being sold on the dark web.

- Threat actors were willing to sell the data for \$80,000, the company said in a blog post. It further said that the data on sale was found to be valid.
- The threat actors selling the data claimed it was sourced from the Indian Council of Medical Research (ICMR), which has been subjected to numerous cyber-attack attempts with 6,000 incidents being reported last year alone.

### What is the nature of the Personally Identifiable Information?

- **Personally Identifiable Information or PII is information** that when used alone or with other relevant data, can identify an individual.
- **PII may be direct identifiers like passport information** or quasi-identifiers that can be combined with other information to successfully recognize an individual.
- The data being sold on the dark web included one's Aadhaar number, a **unique 12-digit individual identification number** issued by the **Unique Identification Authority of India (UIDAI)** on behalf of the Indian government. This data was being sold by a threat actor going by the name pwn0001.
- However, another threat actor by the name of "Lucius" also claimed to have access to a more extensive array of PII data which included voter IDs and driver's license records.



### About Dark Web

- The dark web refers to sites that are not indexed and only accessible via specialized web browsers. Significantly smaller than the tiny surface web, the dark web is considered a part of the deep web.
- Using our ocean and iceberg visual, the dark web would be the bottom tip of the submerged iceberg.
- The dark web is intentionally hidden and can only be accessed with special software, configurations, or authorization, making it a realm of the internet that is not easily accessible to the average user.

### How Did Threat Actors Gain Access to Sensitive Data?

#### Access to Sensitive Data:

- Threat actors on the dark web are selling stolen data, including Personally Identifiable Information (PII) of 815 million Indian citizens.
- The actors have not disclosed the method of data acquisition, making it challenging to pinpoint the exact source of the breach.

#### Claims of Access to Law Enforcement Data:

- A second threat actor, known as Lucius, alleges access to a 1.8 terabyte data leak affecting an undisclosed "India internal law enforcement agency."
- The authenticity of Lucius's claim is yet to be verified.

#### References to UIDAI and Aadhaar Cards:

- Data samples examined contain references to UIDAI (Unique Identification Authority of India) and Aadhaar cards, along with voter ID cards.
- There's a possibility that threat actors exploited a third-party entity aggregating this information.

#### Threats Arising from the Data Leak:

- **Economic Implications:** India's rapid economic growth makes it a lucrative target, reflected in its global rank of 4th in malware detection in H1 2023.
- **Identity Theft Risks:** The exposed data significantly increases the risk of digital

identity theft, impacting individuals' online security.

**Leveraging Stolen Information:**

- Threat actors exploit stolen identity information for various cybercrimes, including online banking theft, tax fraud, and other financially motivated cyber-enabled crimes.

**Global Cybersecurity Landscape:**

- The surge in cyber threats globally, exacerbated by regional unrest, highlights the critical need for robust cybersecurity measures to protect sensitive data.

**Call for Enhanced Cybersecurity Measures:**

- The incident underscores the urgency for organizations and authorities to enhance cybersecurity measures, implement advanced threat detection, and bolster defenses against evolving cyber threats.

**Collaborative Efforts for Prevention:**

- Cybersecurity is a shared responsibility, necessitating collaboration between

government agencies, private organizations, and cybersecurity experts to prevent and respond to such incidents effectively.

**What can users do to safeguard their personal information?**

- Users should try to ascertain if their information was leaked in the data leak. Users should also be alert and approach emails from unknown sources with caution as stolen information may be used to target users in phishing campaigns.
- It is also advised to change existing user IDs and passwords to ensure that stolen data cannot be used for launching brute force attacks.
- Users should also implement two-factor authentication for all their accounts and inform the concerned authorities in case they notice any suspicious activity in their online accounts.

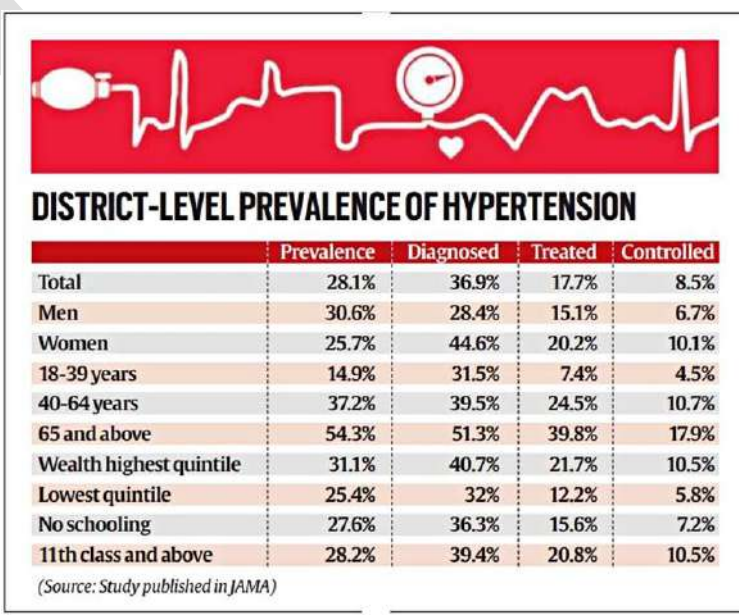
**7.5 HYPERTENSION**

**Context**

- Addressing regional disparities in hypertension and its treatment across India is vital for maintaining overall public health and well-being.

**Details**

- A recent study reveals a diverse landscape in the prevalence, diagnosis, treatment, and control of hypertension across Indian states. This indicates that a one-size-fits-all approach might not be effective in addressing the issue.
- The analysis highlighted disparities not only in prevalence but also in the diagnosis, treatment, and control of hypertension. This suggests that healthcare interventions should be tailored to specific regions and communities to bridge these gaps effectively.
- The researchers advocate for "targeted, decentralized solutions" to tackle hypertension. This means tailoring interventions to specific regions and districts based on their unique challenges and needs.



- **Hypertension**, or high blood pressure, is also known as the "silent killer" because it often has no symptoms but can cause serious damage to the blood vessels and organs over time. If left untreated, hypertension can lead to heart attack, stroke, kidney disease, vision loss, and sexual dysfunction.

## About the hypertension

### National Disparities in Hypertension Care

- The study reveals significant gaps in the **continuum of care for hypertension in India**, with only 33% of individuals diagnosed and a mere 8% achieving blood pressure control.
- **These findings underscore the need for comprehensive strategies** to address the nationwide challenges in hypertension management.

### Inter-State and Inter-District Variability

- **Regional variations are evident**, with southern states exhibiting higher hypertension prevalence than the national average.
- The **study highlights significant inter-district differences**, emphasizing the importance of tailored approaches for effective healthcare interventions at the local level.

### Impact of Demographics on Hypertension Care

- Contrary to **conventional assumptions**, women, despite having a **lower likelihood of hypertension**, surpass men in diagnosis, treatment initiation, and blood pressure control.
- **The study emphasizes the unique challenges posed by demographics**, with a particular focus on the elderly and the influence of socioeconomic factors on healthcare access.

### District-Level Data for Strategic Planning

- The **district-level breakdown provides actionable insights for state governments**. Tailored strategies are essential, such as increased screening efforts in areas with low diagnosis rates.
- **Addressing issues like irregular medicine availability** requires a consistent supply chain, emphasizing the importance of proximity to healthcare centers and the digitization of records for effective follow-ups.

### Challenges in Hypertension Care

- **Unlike acute diseases, hypertension management demands continuous attention**. The study highlights the impact of irregular medicine availability on treatment adherence, emphasizing the need for consistent accessibility.
- A holistic approach, extending beyond screening and diagnosis, is deemed essential for effective hypertension care.

### WHO Report and Government Initiative

- The WHO report underscores the **potential to prevent 4.6 million deaths by 2040** through improved blood pressure control.
- While the government's initiative to treat **75 million people with hypertension or diabetes by 2025** is commendable, the study emphasizes that addressing hypertension requires more than increased infrastructure.
- Active screening, timely treatment, medicine accessibility, and regular follow-ups are crucial elements for sustained control.

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### How can hypertension be diagnosed and treated?

- Hypertension can be diagnosed by measuring blood pressure using an instrument called a sphygmomanometer.
- Hypertension cannot be cured with a short-term round of medications or a procedure. It requires lifelong management with medications and lifestyle changes. The goal of treatment is to lower blood pressure to a safe level and prevent complications.

**READ:** <https://www.iasgyan.in/daily-current-affairs/indias-hypertension-map>

## 7.6 ELECTRIC BATTERY

### Context

- As portable sources of electric power, batteries are at the foundation of convenience and sustainability.

### Details:

- The electric battery has increased the penetration of motorization and wirelessness in our lives.
- Electric batteries hold and release electrical energy that they have acquired by converting other forms of energy. The conventional variety acquires this from chemical energy.
- As portable sources of electric power, batteries are at the foundation of what convenience means today in industrialized societies.
- Innovations to improve the efficiency with which they handle electric energy will determine what convenience as well as sustainability mean tomorrow.

	Lithium Ion	Nickel-Metal	Lead-Acid	Ultracapacitors
Easy Access / Inexpensive	✓	✗	✓	✗
Energy Efficient	✓	✓	✓	✓
Temp. Performance	✓	✗	✗	✓
Weight	✓	✓	✓	✓
Life Cycle	✓	✗	✓	✗

### What are the roots of electric batteries?

*All chemical reactions are fundamentally about how the electrons in the bonds between atoms are rearranged. The bridge between this fact and the electrochemical cells that were the precursors of modern batteries is most apparent in an experiment that Luigi Galvani conducted in 1780. Galvani touched together two plates of different metals and then touched both at the same time to a frog's leg.*

- **The next major pre-industrial innovation** on this front was the voltaic pile built by Alessandro Volta in 1800.
- This cell consisted of copper and zinc plates arranged in alternating fashion, separated by sheets of paper soaked in salty water.
- **Volta found that this set-up could produce** a steady current for some time but, like Galvani.
- **The British chemist John Daniel improved on Volta's design:** he filled a copper pot with copper sulfate, and inside that placed an earthen pot containing a zinc electrode sitting inside sulphuric acid.
- **This more sophisticated set-up** could produce an electric current for an even longer duration.
- **Then, in the early 19th century, Michael Faraday** worked out why these cells worked the way they did and named their various components (anode, cathode, electrolyte, etc).

### What is an electric battery?

- A voltaic, or galvanic, cell uses redox reactions to produce an electric current. The cell consists of two half-cells. Each half-cell is made of a metal electrode immersed in an electrolyte of that metal – say, a zinc electrode in zinc sulfate and a copper electrode in copper sulfate.
- The two metal electrodes are connected by a wire. The two tubs of electrolyte are connected by a salt bridge (a material that conducts ions while remaining electrically neutral).
- In the zinc half-cell, zinc ions ( $Zn^{2+}$ ) from the electrode dissolve in the zinc sulfate, releasing two electrons into the electrode. In the copper half-cell, the reverse happens copper ions ( $Cu^{2+}$ ) from the copper sulphate deposit onto the electrode, which now requires two electrons.
- So the wire connecting the electrodes transports two electrons from the zinc to the copper electrode. Similarly, the salt bridge connecting the two electrolytes allows the  $Zn^{2+}$  and the sulfate ( $SO_4^{2-}$ ) ions to meet and exchange electrons.

### What are the concepts of a battery?

- The cathode is the positively charged electrode, the one to which electrons arrive (copper in the example above). The anode is the negatively charged electrode, which 'supplies' electrons.
- In an oxidation reaction, electrons are released, and in a reduction reaction, they are consumed. So zinc oxidizes at the anode and copper reduces at the cathode. This is the redox reaction at the heart of every electrochemical cell.
- The energy imparted to the electrons by the half-cells is called the source voltage

(previously called the electromotive force). The terminal voltage is like a driving force that pushes the electrons from the anode to the cathode. **In ideal conditions, the source voltage is equal to the terminal voltage.**

- The higher the source voltage, the greater the cell's electrochemical potential.
  - For example, nickel-cadmium batteries and zinc-copper cells have voltages of 1.2 V and 1.5 V respectively, whereas lithium-ion cells have more than 3 V.

### What are the types of batteries?

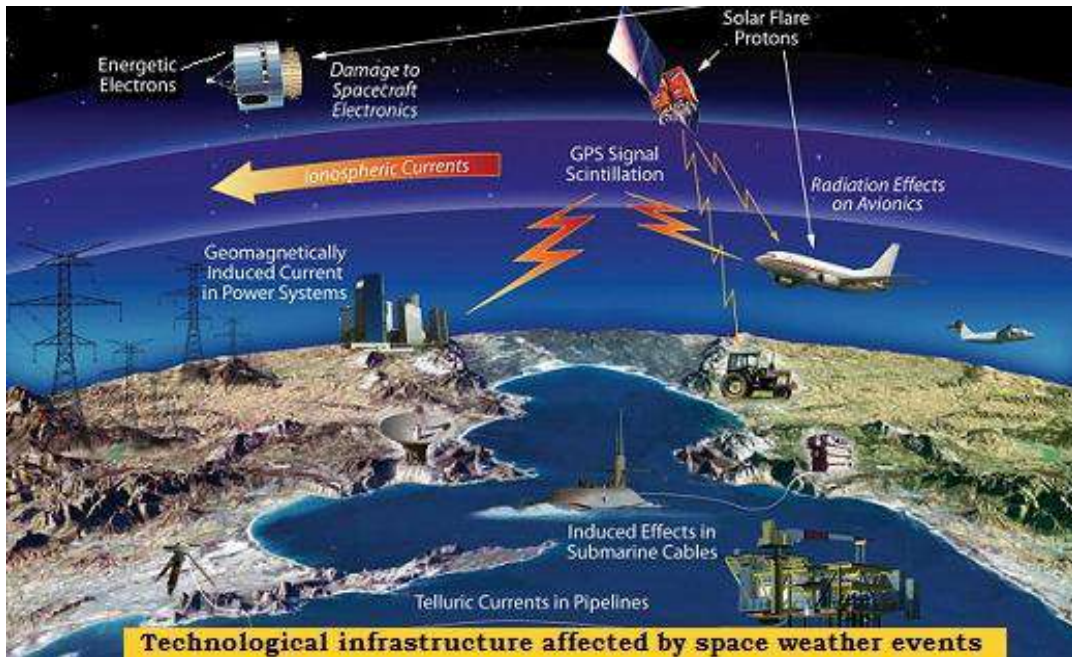
Two batteries often on the news these days are the lithium-ion (Li-ion) battery and the batteries used in electric vehicles (EVs).

- The Li-ion battery won the developers of its foundational principles the Nobel Prize for chemistry in 2019 – a testament to the revolutionary impact it has had in the 20th and 21st centuries. This battery is a voltaic as well as an electrolytic cell. A voltaic cell converts chemical energy to electrical energy.
  - An electrolytic cell converts electrical energy to chemical energy. A battery that can do both is thus rechargeable.
- In a Li-ion polymer cell used in smartphones, lithium metal oxide is the cathode and graphite is the anode. The electrolyte is a semisolid polymer gel. Microporous polyethylene is used to separate the two half-cells.
- A cell like this will work as long as hydrogen is supplied and is expected to be a key component of the hydrogen economy. In January 2023, the Indian government approved the Rs-19,744-crore National Green Hydrogen Mission to make India a "global hub" to utilize and export green hydrogen.

## 7.7 ATMOSPHERIC WAVES EXPERIMENT

### Context

- NASA shares an image of Earth's 'airglow' taken from the international space station.



### Details

- With an exponential rise in satellite-based services used for navigation and communications, obtaining forecasts and data on the health of Space weather is of supreme importance.
- National Aeronautics and Space Administration (NASA) is set to launch the Atmospheric Waves Experiment (AWE) to study one of the important drivers of Space weather – the Earth's weather.

### What are Atmospheric Gravity Waves (AGWs)?

- The Atmospheric Waves Experiment (AWE) by NASA is a pioneering mission aimed at comprehensively studying the interactions between terrestrial and space weather, focusing on the Earth's atmospheric waves and their impacts on space weather. The experiment is crucial due to its potential implications for satellite-based services, communication systems,**

**and power grids affected by space weather events.**

### Formation in a Stable Atmosphere

- Gravity waves in the atmosphere manifest when temperature disparities** between rising air and the surrounding atmosphere generate a force that pushes the air back to its original position.
  - This phenomenon occurs in a stable atmosphere, contributing to the creation of oscillating waves.

### Characteristics and Formation

- Atmospheric Gravity Waves (AGWs) represent **waves travelling within a stable atmospheric layer**. They particularly thrive in regions where air is moving upward, giving rise to distinctive cloud formations. These waves are integral to understanding atmospheric dynamics.

### Extension into Space and Space Weather Impact

- Remarkably, AGWs extend beyond the Earth's atmosphere into space, playing a significant role in shaping space weather.

- The influence of these waves on the **upper atmosphere and beyond highlights** their importance in understanding and predicting space-related phenomena.

#### Generation by Extreme Weather Events

- AGWs are primarily generated by extreme weather events or disturbances that cause vertical displacement of stable air.
  - **Thunderstorms, hurricanes, and regional topography** contribute significantly to the creation of AGWs in the lower atmosphere.

#### Lower Atmosphere Dynamics and Contribution to Cloud Formations

- **In the lower atmosphere, AGWs are influenced by dynamic events** such as thunderstorms and hurricanes. The vertical displacement of stable air induced by these events sets the stage for the generation of gravity waves, contributing to the formation of distinctive cloud patterns.

#### **Significance**

- **AWE's ability to study airglow at finer scales** and provide temperature mapping could enhance understanding of atmospheric dynamics, gravity wave behaviors, and their influence on space weather.
- **Insights gained from this experiment** could lead to improved space weather forecasts, aiding in protecting and maintaining vital technological infrastructure.

#### **Importance of Space Weather**

- **Impact on Earth's Technology:** Space weather events, influenced by solar activities and the Earth's environment, can disrupt crucial infrastructure such as satellite communication, GPS navigation, radio communication, and power grids.
- **Influence of Terrestrial Weather:** Terrestrial weather, including extreme events like thunderstorms and hurricanes, can generate atmospheric gravity waves (AGWs) that affect the atmosphere's stability and contribute to space weather.

## 7.8 SHORT ARTICLES

### **One nation, One Registration Platform**

#### Context

- The National Medical Commission (NMC) is launching a "one nation, one registration platform" to streamline and centralize doctor registrations, eliminating duplication.

#### Details

- The NMC will unveil a patch pilot of the National Medical Register (NMR) in the next six months where doctors will be allotted a unique identification number and then can also apply for their license to work in any State depending on where they are.
- The commission had earlier this year issued a gazette notification titled "Registration of Medical Practitioners and Licence to Practice Medicine Regulations, 2023" announcing the move.

#### About One Nation, One Registration Platform: Unique Identification Number

- Doctors will be assigned a unique identification number in the National Medical Register (NMR). This number will serve as an identifier throughout their medical career.

#### Masked ID for Students

- Undergraduate students will receive a masked ID in the NMR. This ID will be unmasked upon completion of their medical education.

#### Centralized Database

- The NMR will serve as a centralized database containing comprehensive information about medical practitioners, including their qualifications, date of registration, place of work (hospital/institute name), specialty, year of passing, university, and the institute/university where the qualification was obtained.

### Accessibility

- The information in the NMR will be accessible to the general public, providing transparency about medical practitioners' credentials and qualifications.

### Existing Data Transfer

- Data of nearly 14 lakh (1.4 million) doctors currently registered in the existing system will be transferred to the National Medical Register (NMR). This ensures a smooth transition of existing records into the new platform.

**READ:** <https://www.iasgyan.in/daily-current-affairs/one-nation-one-registration-platform>

## National Efficient Cooking Programme

### Context

- The National Efficient Cooking Programme (NECP) and the Energy Efficient Fans Programme (EEFP) are initiatives launched by the Energy Efficiency Services Limited (EESL) in India.

### About National Efficient Cooking Programme (NECP)

#### Alignment with Go-electric Initiative:

- NECP (Non-Electricity Cook stove Program) is an integral part of the Clean Cooking Scheme.
- It aligns with the Go-electric initiative by the Ministry of Power, emphasizing the transition to cleaner and more energy-efficient cooking solutions.

#### Focus on Non-Solar/Electricity-based Induction

##### Cook stoves:

- NECP specifically targets non-solar/electricity-based induction cook stoves.
- This choice reflects a commitment to diversifying clean cooking options beyond traditional electricity sources.

##### Benefits of Induction-based Cook stoves:

- **Energy Efficiency:** Induction-based cook stoves are known for their energy efficiency, providing a sustainable cooking solution.

- **Safety:** These stoves offer enhanced safety features, reducing the risk of accidents associated with traditional cooking methods.
- **Convenience:** The use of electromagnetic fields directly heating the cooking vessel enhances the convenience of cooking.

### Market Growth:

- **Rapid Expansion:** The market for induction cook tops has experienced significant growth, with over 10 million units sold in 2021-22.
- **Contributing Factors:** Factors such as the popularity of modular kitchens, rising LPG costs, and the versatility and safety of induction cooking contribute to this growth.

### Regional Sales Trends:

- **Leading Regions:** Northern and western India have emerged as leaders in the sales of induction cook tops.
- **Factors Driving Popularity:** The portability, convenience, and safety features of induction cook tops contribute to their popularity in these regions.

### Environmental Considerations:

- **Reduced Emissions:** Induction cook stoves are considered environmentally friendly, producing fewer greenhouse gas emissions and indoor air pollutants compared to traditional cooking methods.
- **Sustainability Focus:** The adoption of induction-based cooking aligns with sustainability goals by promoting cleaner and greener cooking practices.

### EESL and MECS Partnership:

- **Deployment Initiative:** EESL (Energy Efficiency Services Limited) has partnered with Modern Energy Cooking Services (MECS) to deploy 20 lakh (2 million) induction cookstoves across India.
- **Scale of Impact:** This partnership signifies a significant effort to promote the widespread adoption of energy-efficient and clean cooking solutions.

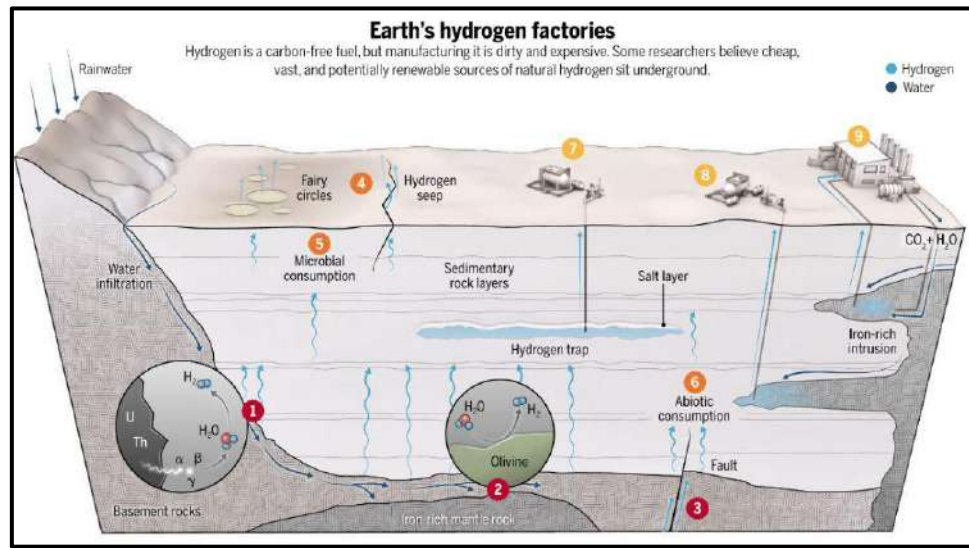
## White Hydrogen

### Context

- Scientists looking for fossil fuels beneath the ground of north eastern France have discovered a large reservoir of hydrogen.

### Details

- According to the initial calculations, it is one of the largest deposits of “white hydrogen” ever discovered, estimated to be between 6 million and 250 million metric tons of hydrogen.
- White hydrogen, also referred to as “natural,” “gold” or “geologic” hydrogen, is naturally produced in the Earth’s crust and is considered a potential clean energy.



### About White Hydrogen and Its Significance:

- Nature of White Hydrogen:** Natural hydrogen, also known as white or gold hydrogen, occurs naturally on or within the Earth's surface, distinguishing it from laboratory-produced or industrial hydrogen.
- Although abundant in the universe, it typically exists in combination with other molecules.

### Potential Applications in Industries:

- White hydrogen's discovery has implications for various industries, including aviation, shipping, and steel-making, as it can serve as a clean energy source.

### Classification of Hydrogen Types:

- Different types of hydrogen, such as "gray," "brown," "blue," and "green," are classified based on their production processes and environmental impacts.
- White hydrogen's natural occurrence distinguishes it from other forms, making it an untapped and potentially abundant source of clean energy.

### Global Implications and Utilization of White Hydrogen:

- Companies like **Gold Hydrogen in Australia** and **Koloma in the US** are actively involved in extracting and utilizing white hydrogen for various energy applications.
- The increasing focus on white hydrogen highlights its potential to revolutionize the energy sector, offering a cost-effective and eco-friendly alternative to traditional energy sources.

## Non-melanoma Skin Cancer

### Context

- About one in every three deaths that take place from nonmelanoma skin cancer is reportedly caused by working outdoors under the sun, the World Health Organization has cautioned in a joint report along with the International Labour Organization (ILO).

- As per the report, nonmelanoma skin cancer "refers to a group of cancers that develop in the upper layers of the skin. The two main subtypes of this cancer are basal cell carcinoma and squamous cell carcinoma."
- The shocking research report was released on Wednesday (Nov 8), laying out data that shows how critical the challenge is.

### Details:

- As per the report, in 2019, an estimated 28 percent of the global working-age population was exposed to solar ultraviolet radiation while working outdoors.

### About Non-Melanoma Skin Cancer:

#### About

- Non-melanoma skin cancer, a prevalent type, originates in the skin's top layer.
- The two primary types are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), each with its distinct characteristics and implications.

#### Symptoms

- Symptoms of non-melanoma skin cancer often manifest as abnormal growths or patches on the skin.
- While it can affect any part of the skin, it is most commonly found in areas exposed to sunlight, such as the head, face, ears, neck, shoulders, back, hands, and lower legs.

#### Causes

- The primary cause of non-melanoma skin cancer is exposure to ultraviolet (UV) light, emanating from the sun or tanning beds.
- Prolonged exposure to UV rays increases the risk of developing this type of cancer, highlighting the importance of sun protection measures.

#### Treatment

- Surgery emerges as the primary mode of treatment for non-melanoma skin cancer.
- The surgical interventions aim to remove the cancerous growths while preserving the surrounding healthy tissue. This approach proves effective in addressing the localized nature of most cases of non-melanoma skin cancer.
- While surgery remains the mainstay, other treatment modalities may be considered based on the extent and characteristics of the cancer.
- These may include topical treatments, radiation therapy, and in some cases, targeted therapies.

#### Preventive Measures

- Prevention plays a crucial role in mitigating the risk of non-melanoma skin cancer. Sun

protection strategies, such as the use of sunscreen, protective clothing, and limiting sun exposure during peak hours, are essential in reducing the impact of UV radiation.

- Regular skin examinations and early detection are pivotal in the successful management of non-melanoma skin cancer.
- Individuals should remain vigilant for any changes in their skin and promptly seek medical attention if any suspicious growths or patches are identified.

## **Green crackers**

### Context

- There is a drive-by for both government agencies and conscious citizens of Bengaluru -- to ensure that only less polluting green crackers are sold and bought this Deepavali.

### Details:

- The season of festivals - Deepavali, Christmas, and New Year that follow each other in quick succession- is marked by cheer and fervor. But lurking behind it all is also the fear of air and noise pollution.
- One of the attempts to ensure that festivities do not come at the cost environment has been the drive to promote "green firecrackers."
- The Karnataka government has brought out guidelines stating that only less-polluting green firecrackers can be sold in the State.

### About Green Crackers:

#### Origins and Development

- In 2018, the **National Environmental and Engineering Research Institute (NEERI)**, operating under the Council for Scientific and Industrial Research (CSIR), introduced green crackers as an innovative solution to address the environmental impact of traditional firecrackers.

#### Environmental Focus of NEERI

- **NEERI, a constituent of CSIR, specializes** in research and developmental studies in environmental science and engineering.
- **The creation of green crackers aligns with NEERI's commitment** to mitigating the environmental impact of human activities,

particularly during festive occasions when traditional firecrackers contribute significantly to pollution.

### Reducing Hazardous Agents

- **Green crackers aim to minimize the environmental footprint** by replacing hazardous agents present in traditional crackers.
- One key element eliminated is barium nitrate, a highly dangerous ingredient. Instead, green crackers incorporate alternative chemicals such as **potassium nitrate and aluminum**, reducing emissions and noise intensity.

### Chemical Substitutions for a Cleaner Celebration

- **The shift from magnesium and barium to potassium nitrate and aluminum**, along with the use of carbon instead of arsenic and other harmful pollutants, distinguishes green crackers as a cleaner alternative.
- **This strategic substitution not only maintains the festive spirit** but also safeguards the environment from the detrimental effects of toxic components.

### Noise Reduction Measures

- Traditional crackers often produce **sound levels ranging from 160-200 decibels**, contributing to noise pollution. Green crackers, in contrast, limit their noise output to **approximately 100-130 decibels**.

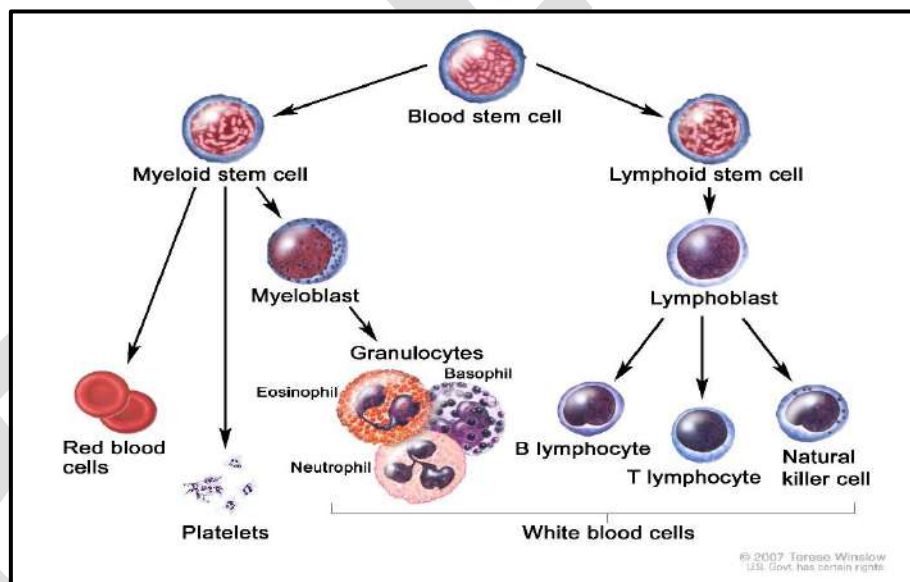
## Acute Lymphoblastic Leukaemia

### Context

- A new study has found links between an increase in soy production in Brazil's Amazon and Cerrado biomes and an increase in pediatric deaths from cancer.

### Details

- Soy production in these biomes has increased up to 20 times in the last two decades and the associated pesticide use has also risen dramatically.
- The researchers found a statistically significant correlation between a rise in soy production and acute lymphoblastic leukemia (ALL) deaths in children between 2008 and 2019. Timely access to treatment, however, mitigated this link.



### About Acute lymphoblastic leukemia (ALL):

- Acute lymphoblastic leukemia (ALL), also known as acute lymphocytic leukemia, is a type of cancer that affects the blood and bone marrow.
- It primarily affects lymphoid cells, which are a type of white blood cell involved in the immune system.

### About

- In ALL, immature white blood cells called lymphoblasts multiply rapidly in the bone marrow and blood. These abnormal cells crowd out healthy blood cells, leading to a decreased production of red blood cells, platelets, and normal white blood cells.



### Symptoms

- The symptoms of ALL can vary, but common signs may include fatigue, weakness, pale skin, frequent infections, easy bruising or bleeding, bone pain, swollen lymph nodes, and an enlarged spleen.

### Diagnosis

- Diagnosis typically involves a combination of blood tests, bone marrow aspiration and biopsy, and imaging studies to assess the extent of the disease.
- Genetic and chromosomal analysis may also be performed to determine the subtype of ALL.

### Classification

- ALL can be classified into different subtypes based on the specific type of lymphoblast involved (B-cell or T-cell) and various genetic markers. These subtypes can affect the prognosis and treatment approach.

### Treatment

- The treatment for ALL often involves a combination of chemotherapy, targeted therapy, radiation therapy, and stem cell transplantation, depending on the subtype, age of the patient, and other factors.

### Prognosis

- The prognosis for ALL can vary depending on various factors, including the age of the patient, the subtype of ALL, and how quickly the disease was diagnosed and treated. Advances in treatment have improved survival rates, especially in children.

## GPS Ankle Monitors

### Context

- The Jammu and Kashmir Police has recently introduced GPS tracker anklets for monitoring the terror accused out on bail.

### Details

- GPS (Global Positioning System) trackers are devices that use satellite signals to determine and record the precise location of an object or person.
- These trackers leverage a network of satellites orbiting the Earth to provide accurate positioning information in real-time.



### About GPS Trackers

- A GPS tracker, akin to GPS collars, has been a longstanding tool for monitoring animal movements. This portable device reveals the user's precise location, enabling law enforcement and security agencies to track movements in real-time.
- The utilization of GPS tracking devices streamlines the process of obtaining warrants under stringent laws and fosters confidence among authorities.

### Characteristics:

- These devices boast tamper-proof features, triggering alarms if any attempt at tampering occurs. The inability to be removed without damage ensures the tracker's continued functionality. GPS trackers can be affixed to a person's ankle or arm, available in the form of GPS anklets and GPS bracelets.

### Applications in Diverse Sectors

- GPS trackers find applications in various domains, from monitoring wild animals like elephants in Kerala to ensuring the traceability of stolen cars. Many modern vehicles come equipped with built-in tracking devices, and owners can install separate trackers for added security.

**Concerns:**

- **Regulatory Vacuum:** The absence of specific regulations for GPS tracking anklets raises concerns about legal oversight and accountability.
- **Lack of Standards and Ethics:** The absence of established standards and ethical guidelines for electronic surveillance by security agencies further compounds the ethical dilemma surrounding their use.
- **Privacy Violations:** Rights activists argue that the act of tracking individuals violates their fundamental right to privacy. The Supreme Court's stance in the Maneka Gandhi v Union of India case emphasizes the right to human dignity as an integral part of the right to life.
- **Need for Informed Consent:** The lack of an informed consent system and procedures exacerbates worries about potential overregulation and human rights violations. Establishing ethical practices becomes imperative to counteract any unethical or illegal surveillance.

## Five-hundred Aperture Spherical Telescope (FAST)

**Context**

- Using the Five-hundred Aperture Spherical Telescope (FAST), astronomers from China and Australia have discovered five new pulsars, two of which turned out to have ultra-short spin periods.



**Details:**

- Pulsars are highly magnetized, rotating neutron stars emitting a beam of electromagnetic radiation from their magnetic poles.
- This radiation can only be observed when the beam of emission is pointing toward the Earth.

**Introduction to FAST:**

- The Five-hundred-meter Aperture Spherical Radio telescope (FAST) stands as a monumental Chinese mega-science project inaugurated in 2016.
- Located in the Dawodang depression, Guizhou Province, China, this colossal telescope holds the esteemed title of being the world's largest filled-aperture radio telescope.

**Construction and Capabilities:**

- **FAST boasts a colossal diameter of 500 meters**, constructed from 4,450 triangular panels meticulously arranged.
- This architectural marvel possesses exceptional sensitivity and an expansive collecting area, enabling the detection of faint celestial signals.
- **The telescope's primary objectives** encompass the study of pulsars, the identification of neutral hydrogen in distant galaxies, and the quest for extraterrestrial intelligence (SETI) signals.

**Scientific Significance:**

- **Pulsar Research:** FAST has significantly contributed to the revelation of numerous pulsars—highly magnetized, rotating neutron stars emitting beams of electromagnetic radiation.
- **Interstellar Medium Studies:** By mapping the distribution of neutral hydrogen in the Milky Way and beyond, FAST has provided invaluable insights into the structure and evolution of the universe.
- **SETI Efforts:** With its unparalleled sensitivity and extensive collecting area, FAST emerges as an exceptional tool for projects dedicated to the Search for Extraterrestrial Intelligence (SETI).

### Research Potential:

- **Pulsar Exploration:** Unraveling the origins and behaviors of pulsars to deepen our understanding of these fascinating celestial phenomena and their role in the cosmos.
- **Interstellar Medium Investigations:** Delving into the dynamics of galaxies, particularly the Milky Way, and comprehending the intricacies of the interstellar medium.
- **SETI Advancements:** Enhancing the search for potential extraterrestrial intelligence by diligently scanning the cosmos for artificial signals that might signify the existence of intelligent beings beyond Earth.

## Gamma-ray Burst

### Context

- A Gamma-ray burst in a faraway galaxy disturbed Earth's upper atmosphere.

### Details

- About two billion years ago in a galaxy far beyond our Milky Way, a big star met its demise in a massive explosion called a supernova that unleashed a huge burst of gamma rays, which pack the most energy of any wave in the electromagnetic spectrum.
- Those waves traversed the cosmos and finally reached Earth last year. This gamma-ray burst, researchers said on Tuesday, caused a significant disturbance in Earth's ionosphere, a layer of the planet's upper atmosphere that contains electrically charged gases called plasma.

### About Gamma-ray Burst:

#### Definition

- GRBs are powerful **astronomical cosmic bursts** of high-energy gamma-rays, originating from massive celestial events in the Universe.

#### Emission Mechanism

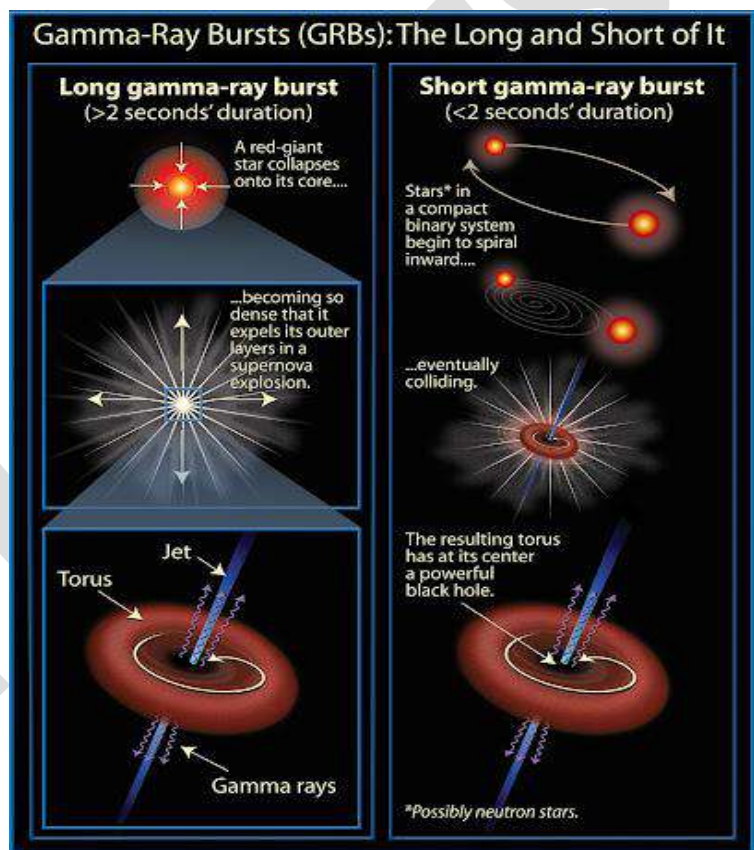
- **These bursts result from the collapse** or death of massive stars, emitting intense and short-lived gamma radiation.
- **They exhibit two distinct phases:** the prompt emission, releasing gamma rays, followed by a more prolonged multi-wavelength afterglow.

#### Energy Output

- **GRBs display extraordinary energy levels**, emitting more energy in a few seconds than our Sun does throughout its entire lifetime.

#### Duration

- The **duration of GRBs varies significantly**, ranging from brief bursts lasting ten milliseconds to extended events spanning several hours.



**Afterglow Phenomenon**

- Following the initial gamma-ray burst, GRBs typically exhibit a longer-lived "afterglow" across various wavelengths, including X-ray, ultraviolet, optical, infrared, microwave, and radio.

**Origin of Intense Radiation**

- The intense radiation observed in GRBs is associated with significant astrophysical processes, such as the creation or merging of neutron stars or black holes.

**Galactic Distribution**

- All observed GRBs have been identified as originating from outside the Milky Way galaxy, highlighting their extragalactic nature.

**Progress toward Measles Elimination**

**Context**

- Global coverage with measles-containing vaccine (MCV) declined during the COVID-19 pandemic to the lowest levels since 2008, and measles surveillance was suboptimal.

**Details:**

- The report highlights a

significant decrease in global coverage of measles-containing vaccine (MCV) during the COVID-19 pandemic, reaching the lowest levels since 2008. This decline poses a heightened risk of measles outbreaks.

- Between 2000 and 2022, measles vaccination efforts are estimated to have prevented approximately 57 million deaths worldwide. This emphasizes the crucial role of vaccination programs in mitigating the morbidity and mortality associated with measles.
- In 2022, an alarming estimated 1.1 million children in India missed their crucial first dose of the measles vaccine, indicating a substantial vulnerability to measles contraction.

**About Measles:**

**Overview**

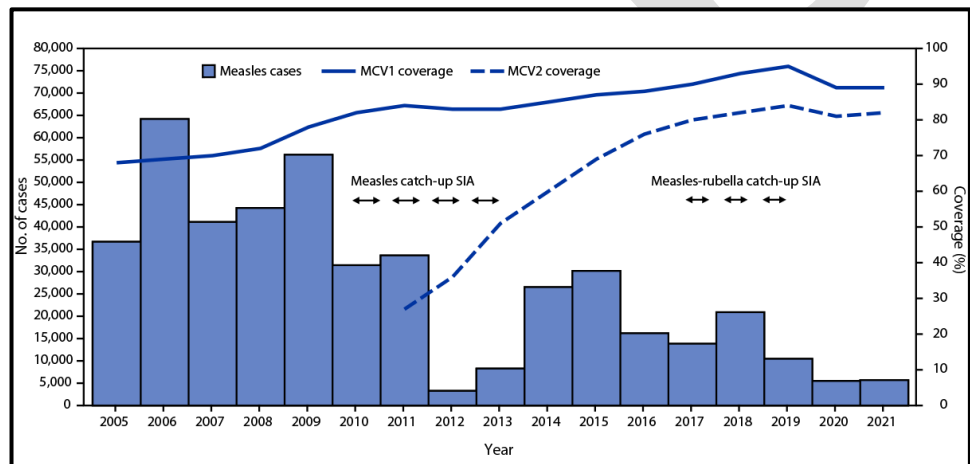
- Measles is a highly contagious viral disease caused by a specific virus. It spreads easily when an infected person breathes, coughs, or sneezes. This makes it a significant public health concern, especially in densely populated areas.

**Health Impact and Vulnerable Populations**

- Measles can cause severe illness, and complications such as pneumonia and encephalitis, and in some cases, it can lead to death. It is particularly dangerous for young children and individuals with compromised immune systems.

**Clinical Presentation**

- The disease typically presents with symptoms like a high fever, cough, runny nose, and a characteristic rash that spreads across the body.



## Automation and Robotics

### Context

- Many tasks are automated with the help of artificial intelligence (AI) and are solved by a robot system in various e-commerce companies today.

### About Automation

#### About

- The **concept of automation originated in 1948** for production purposes, initiated by Ford Motors Vice President **Delmar S. Harder**.

#### Definition

- **Automation, also known as automatic control**, involves the utilization of various control systems to connect and manage equipment such as machines, manufacturing processes, and more.
- **This extends to applications** like stabilizing ships, aircraft, and other systems, often with minimal human involvement.

#### Scope of Automation

- **Automation encompasses the application of control systems** to regulate processes, ranging from manufacturing and heat treatment furnaces to telephone networks.
- **Its versatility extends to stabilizing vehicles**, indicating its broad usage across diverse industries.

#### Role of Computers in Automation

- **In essence, automation involves utilizing computers** to control specific processes, aiming to enhance consistency and efficiency while reducing the need for extensive human intervention.
- **This approach contributes to streamlining operations** and improving overall effectiveness.

#### Automation and Robotics in Industry

- **Automation and robotics represent the integration of computers**, control systems, and information technology to operate industrial processes and machines.
- **This transformative approach replaces manual labor**, leading to enhanced efficiency, speed, quality, and overall performance.

## Chikungunya

### Context

- The U.S. Food and Drug Administration (FDA) has approved Ixchiq, the world's first vaccine for chikungunya, marking a crucial milestone in addressing the emerging global health threat posed by the mosquito-borne virus.

### Details:

- The virus is commonly found in tropical and subtropical regions of Africa, Southeast Asia, and parts of the Americas.
- Chikungunya infection is characterized by symptoms such as fever and severe joint pain. While the virus is generally not fatal, it can lead to prolonged health issues, especially in older adults and individuals with underlying medical conditions.

### About Chikungunya virus:

- Chikungunya is a viral infection primarily transmitted to humans through the bites of infected mosquitoes, particularly *Aedes aegypti* and *Aedes albopictus*.
- Chikungunya is a viral disease transmitted by mosquitoes, first identified during a 1952 outbreak in southern Tanzania. The name originates from the Kimakonde language, signifying the contorted posture of individuals experiencing acute joint pain.

### Transmission:

- The virus spreads through mosquito bites, primarily by *Aedes aegypti* and *Aedes albopictus*, the same mosquitoes responsible for transmitting dengue. Mosquitoes become carriers by biting infected humans or animals, and weather conditions impact their breeding and survival.

**Symptoms**

- Chikungunya symptoms encompass severe joint and muscle pain, headaches, nausea, fatigue, and rashes.

**Treatment:**

- Currently, there are no specific vaccines or antiviral drugs for Chikungunya. Treatment focuses on alleviating associated symptoms.

**Factors Contributing to Increased Cases**

- The surge in Chikungunya cases is attributed to factors such as haphazard urbanization, inadequate water and waste management leading to mosquito breeding, and the absence of specific antiviral drugs or vaccines.

**Government Initiatives**

- The National Vector Borne Disease Control Programme (NVBDCP) operates under the Ministry of Health and Family Welfare, working comprehensively on the prevention and control of various vector-borne diseases, including Chikungunya.

**Chikungunya**  
Chikungunya is transmitted through the bite of the Aedes Aegypti and the Aedes Albopictus Mosquito. The second is only found in Izabal.

**Symptoms**  

- fever
- headaches
- tiredness
- depression
- nausea
- rash

 just like dengue: body aches, but more intense in joints and tendons. can become chronic and cause blindness.

**Prevention**  

- do not store water in open containers so that they do not become breeding sites for mosquitoes
- cover tanks or containers for water for domestic use
- do not accumulate trash, dispose of trash in your yard
- cut your grass regularly to destroy potential breeding or resting sites
- use mesh or screens on your windows and doors
- use repellent or long sleeves to avoid getting bitten

**3D Printing**

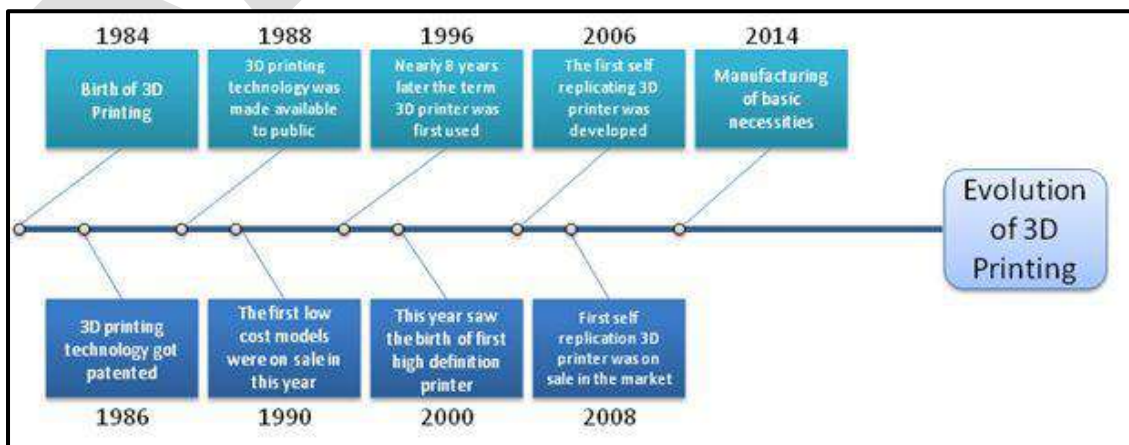
**Context**

- According to officials, metal additive manufacturing (metal AM) utilizes fine metal powders to construct robust, intricate components through computer-aided design (CAD) programs or 3D scanning.

**Details:**

- Researchers from IIT-Mandi have found that the extrusion-based metal additive manufacturing process stands out as the most superior and cost-effective method in comparison to other approaches in metal 3D printing.

**About 3D Printing:**



## Overview

- 3D printing, also known as additive manufacturing, constructs three-dimensional objects layer by layer using computer-generated designs.
- Unlike conventional manufacturing methods that involve material subtraction, 3D printing is additive.

## Advantages of 3D Printing

- **Customization:** 3D printing allows for individualized and customized products tailored to specific needs or preferences.
- **Complex Geometries:** The technology can create intricate and complex geometries that would be challenging or impossible to achieve using conventional manufacturing techniques.
- **Reduced Waste:** Unlike subtractive manufacturing, where excess material is removed, 3D printing adds material only where needed, minimizing waste.
- **Speed and Efficiency:** 3D printing reduces production time, enabling rapid prototyping and iteration of designs.

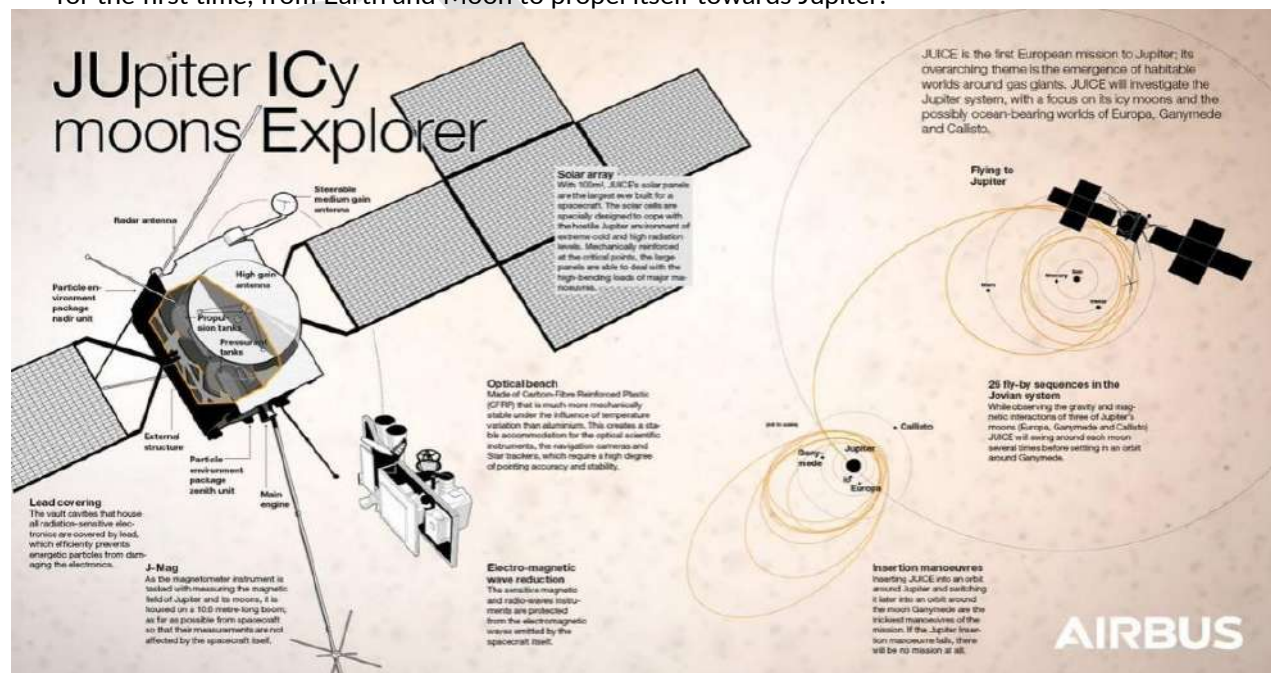
## Applications of 3D Printing

- **Manufacturing:** 3D printing has revolutionized manufacturing by enabling rapid prototyping, reducing production time, and minimizing waste. Complex geometries and intricate designs that were once challenging to create are now achievable with precision.
- **Healthcare:** In the medical field, 3D printing is used to create patient-specific implants, prosthetics, and even organs. Customized medical devices and models for surgical planning enhance patient outcomes.
- **Aerospace:** Aerospace industries utilize 3D printing to manufacture lightweight and durable parts, reducing aircraft weight and fuel consumption. This technology also enables rapid iteration of design improvements.
- **Automotive:** The automotive sector benefits from 3D printing for producing intricate components, optimizing vehicle design, and creating prototypes for testing.

## Juice Mission

### Context

- European Space Agency's (ESA) Jupiter Icy Moons Explorer (JUICE) probe will use double gravity assist, for the first time, from Earth and Moon to propel itself towards Jupiter.



## About Jupiter Icy Moons Explorer (JUICE):

### About and objectives

- The JUperiterIcy moons Explorer (JUICE) is a pioneering mission led by the European Space Agency (ESA), designed to explore Jupiter and three of its icy moons: **Europa, Callisto, and Ganymede**.
- The primary objectives include unraveling the possibilities of life in space and investigating the origins of Jupiter.

### Duration and Arrival

- The ambitious probe is set to embark on an approximately eight-year journey to reach Jupiter.
- **The mission's timeline encompasses a comprehensive exploration** of Jupiter's complex magnetic, radiation, and plasma environment, along with an in-depth analysis of its interaction with the target moons.

### Focus on Ganymede

- Around four years after it arrives at the Jupiter system, **JUICE will transition into orbit around Ganymede, Jupiter's largest moon**.
- **This phase marks a historic milestone**, as JUICE becomes the first probe to orbit a planetary moon other than Earth's.
- **The extensive exploration of Ganymede** aims to enhance our understanding of this massive moon, larger than the smallest planet in the solar system, Mercury.

### Spacecraft Features

- **Propellant:** JUICE is fueled with **mono-methyl hydrazine (MMH) fuel** and mixed oxides of nitrogen (MON) oxidizer. The ignition of these propellants enables critical course maneuvers during the spacecraft's journey.
- **Instruments:** The probe is equipped with ten sophisticated instruments to characterize **Jupiter's ocean-bearing icy moons**. These instruments are tailored to gather data crucial for understanding the composition, atmosphere, and potential habitability of the target moons.
- **Launch Vehicle:** JUICE will be launched aboard the **Ariane-5 rocket**, a reliable workhorse for the **European Space Agency**. This launch vehicle has a proven track record of delivering payloads into space efficiently.

## Amyloidosis

### Context

- The research conducted by scientists from the Institute of Advanced Studies in Science and Technology (IASST) is focused on using lysozyme molecules as a model to

understand and study diseases like Amyloidosis.

SIGNS & SYMPTOMS	DIAGNOSIS
<p>Fatigue, dizziness</p> <p>Shortness of breath</p> <p>Carpal tunnel syndrome</p> <p>Weakness, tingling, or pain - mostly in hands and feet</p> <p>Heart palpitations, irregular heart rhythms, symptoms of other heart conditions</p> <p>Bloating stomach</p> <p>Fluid building up in legs, ankle, and/or feet</p>	<p><b>Blood and urine tests</b> Your doctor may test your blood and urine. They may also perform genetic testing to see if you have hereditary or wild-type amyloidosis.</p> <p><b>Imaging</b></p> <ul style="list-style-type: none"> <li>• Pyrophosphate (PYP) scan</li> <li>• Echocardiogram</li> <li>• Cardiac MRI</li> </ul> <p><b>Biopsy</b> Tissue can be taken from the heart through a catheter-based approach to evaluate for amyloid deposits.</p>



### Details:

- A 2D protein monolayer was fabricated by scientists by assembling lysozyme molecules - model protein in studying diseases like Amyloidosis.
- Amyloidosis is a rare disease that occurs when a protein called amyloid builds up in organs.
- This amyloid buildup can affect the working of organs like the heart, kidneys, liver, spleen, nervous system, and digestive tract.
- **Lysozyme, a protein present in mucosal secretions** and a principal component of airway fluid can be regarded as a model protein in studying diseases like Amyloidosis which ultimately leads to multi-organ dysfunction.

### About Amyloidosis:

- **Amyloidosis is a rare disease that occurs when an abnormal protein called amyloid builds up** in organs and tissues. This build up can damage organs and make it difficult for them to function properly.
- Amyloidosis can affect any organ in the body, but it most commonly affects the heart, kidneys, liver, and spleen.

### Diagnosis:

- **Diagnosing amyloidosis can be difficult because the symptoms** can be similar to those of other diseases. However, several tests can be used to diagnose amyloidosis.
- Blood tests can be used to measure levels of ALCI and TTR.
- A tissue biopsy is a procedure in which a small sample of tissue is removed from the affected organ and tested for amyloid deposits.

### Symptoms and causes:

- **AL amyloidosis:** This type of amyloidosis is caused by the abnormal production of a protein called light chain immunoglobulin (ALCI)

- **Transthyretin (TTR) amyloidosis:** This type of amyloidosis is caused by mutations in the gene that produces TTR.
- **Wild-type amyloidosis:** This type of amyloidosis is caused by the buildup of wild-type TTR, which is the normal form of the protein.
- The symptoms of amyloidosis vary depending on which organs are affected. Some common symptoms include:
  - Fatigue
  - Weakness
  - Weight loss
  - Shortness of breath
  - Swelling in the legs or ankles
  - Numbness or tingling in the hands or feet
  - Difficulty urinating
  - Diarrhea

### Treatment:

- **There is no cure for amyloidosis**, but there are treatments that can help manage the symptoms and slow the progression of the disease. Treatment options depend on the type of amyloidosis and the organs that are affected.

### Types:

- There are several types of amyloidosis, and each is associated with a specific precursor protein that forms the amyloid deposits. Some common types include:
- **AL Amyloidosis (Primary Amyloidosis):** This type is associated with abnormal antibodies produced in bone marrow.
- **AA Amyloidosis (Secondary Amyloidosis):** This type is associated with chronic inflammatory conditions, such as rheumatoid arthritis or inflammatory bowel disease.
- **ATTR Amyloidosis (Hereditary or Senile Systemic Amyloidosis):** This type is associated with mutations in the transthyretin gene and can be hereditary or occur with aging.

## 7.9 SNIPPETS



### Wolbachia

- According to scientists —the Wolbachia method could be used to significantly reduce the incidence of dengue fever.
- Wolbachia pipientis bacteria naturally occur in 60 percent of insect species but not in the Aedes aegypti mosquitoes, which are carriers of diseases like dengue, Zika, chikungunya, and yellow fever.
- Scientists have claimed that infecting mosquitoes with a naturally-occurring bacterium can help curb the spread of dengue by 77 percent.
- One theory is that the bacterium prevents dengue viruses from replicating in mosquito cells.

APTI PLUS



### Kavach

- KAVACH is a state-of-the-art electronic system that was designed to help the Indian Railways achieve Zero Accidents.
- It is an Automatic Train Protection (ATP) system that has been indigenously developed by the Research Design and Standards Organisation (RDSO) in collaboration with Indian industry with trials facilitated by South Central Railway to achieve the corporate objective of safety in train operations across Indian Railways.

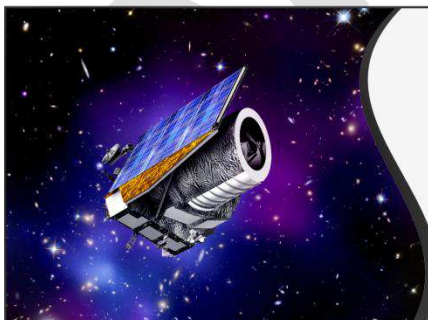
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### Helicobacter Pylori

- H. pylori or Helicobacter pylori is a bacterium that can cause infections of the stomach and duodenum (the first portion within the small intestine of the human body).
- It is the most common cause of the gastric ulcer.
- pylori is a bacterium that infects the stomach lining and is linked to gastrointestinal issues like peptic ulcers and stomach cancer.
- Clarithromycin is an antibiotic commonly used to treat H. pylori infections, but drug-resistant strains in India have raised concerns about its effectiveness.

APTI PLUS



### Euclid Mission

- The primary goal of the Euclid mission is to study the nature and properties of dark energy and dark matter, which together constitute a significant portion of the Universe.
- By mapping the distribution and evolution of galaxies, Euclid aims to shed light on the fundamental forces shaping the cosmos.
- Euclid is a space-based mission, equipped with a sophisticated telescope and state-of-the-art scientific instruments.
- The mission is expected to have a nominal operational lifetime of 6 years, during which it will conduct an extensive survey of the sky.

APTI PLUS



### Vampire Viruses

- Vampire Viruses are pathogens that latch onto other viruses to replicate themselves.
- They emerge when a bacteriophage attaches to a soil-based virus, utilizing its "life" for independent survival.
- This viral relationship between two pathogens is called a satellite and a helper.
- The satellite is the infectious strand that relies on the helper for support through its life cycle.

APTI PLUS



### Radiative Cooling Paint

- Radiative cooling technology is a method designed to dissipate heat from an object by emitting thermal radiation into the atmosphere, allowing the object to become cooler.
- It leads to the creation of cool surfaces by emitting thermal radiation directly into the extremely cold universe (around 3 Kelvin), using the atmospheric transmission window (8 - 13  $\mu\text{m}$ ).

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### Aeronautical Society of India

- The Aeronautical Society of India (AeSI) is the principal Society in India serving the professions in areas of aeronautics, aerospace, and aviation.
- Its stated primary purpose is to "advance the sciences, engineering, technology, and management of aerospace, aeronautics, and aviation and to foster and promote the professionalism of those engaged in these pursuits".
- The Aeronautical Society of India a professional body, devoted to the advancement of aeronautical sciences and engineering in India, was founded in 1948. Pandit Jawaharlal Nehru was the first Patron-in-Chief of the Society.

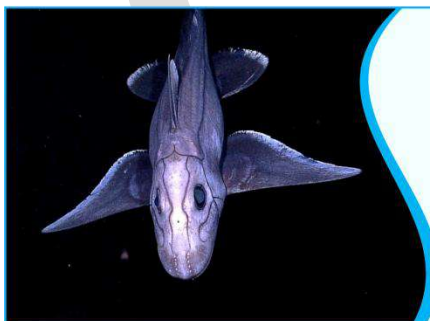
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### Freemartins

- A freemartin is an infertile female cattle with masculinized behavior and non-functioning ovaries.
- Phenotypically, the animal appears female, but various aspects of female reproductive development are altered due to the acquisition of anti-Müllerian hormone from the male twin.
- Genetically, the animal is chimeric: karyotype of a sample of cells shows XX/XY chromosomes.

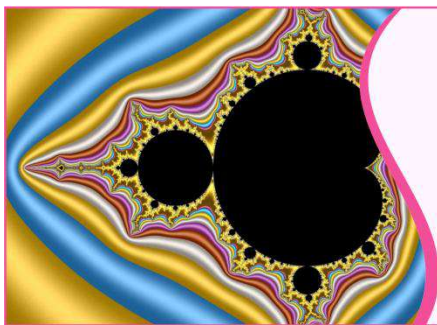
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### Chimaeras

- Chimeras are organisms that are made up of the cells of two distinct species, in this case, humans and monkeys.
- For instance, if this hybrid embryo was placed in the womb of a monkey, it could grow into a new kind of animal.
- In this study, the monkey embryos containing human stemcells stayed alive and grew outside the body for 19 days.

APTI PLUS



## Fractals

- Fractals, known for self-similar patterns, offer a means to examine quantum systems in dimensions between one and two.
- Fractals are prevalent, exhibiting self-similar patterns at various scales.
- In the quantum realm, studies have found fractal arrangements in materials like neodymium nickel oxide and graphene, showcasing fractal behavior in their internal structures and electron distributions.
- Fractals are geometric shapes that display self-similar patterns at different scales. This means that when you zoom in or out on a fractal, you see similar or identical shapes repeating infinitely.



## Scattered Spiders

- The FBI has issued a warning to organizations about a hacking group called Scattered Spiders—a group notorious for invading various organizations across the United States and the world.
- These include phishing, push bombing, and SIM swap attacks, to steal credentials, install remote access tools, and even bypass multi-factor authentication.

## 7.10 1 MAINS & 5 MCQs

**Q1. Discuss the significance of airglow in understanding space weather and its implications for Earth's atmospheric dynamics.**

### Answer

- Airglow refers to the faint emission of light by the Earth's atmosphere, predominantly at night, that occurs due to various chemical reactions and interactions between molecules and atoms in the upper atmosphere. This natural phenomenon creates a subtle luminescence, usually visible as a faint, diffuse glow in the sky.

### Properties and Causes of Airglow

- **Chemical Reactions:** Airglow primarily results from chemical reactions involving atoms and molecules in the Earth's upper atmosphere, typically at altitudes between 80 to 100 kilometers above the Earth's surface.
- **Excitation of Molecules:** When atoms and molecules in the upper atmosphere absorb high-energy solar radiation (ultraviolet or X-rays), they get excited. As these excited particles return to their stable states, they release energy in the form of faint light, creating the airglow.

### Significance and Scientific Research

1. **Study of Upper Atmosphere:** Monitoring and studying airglow helps scientists understand the composition and dynamics of the upper atmosphere. It provides valuable insights into atmospheric chemistry, circulation patterns, and interactions with solar radiation.
2. **Space Weather Research:** Airglow serves as a tool for studying space weather phenomena, such as the effects of solar activity on the Earth's atmosphere.

3. **Remote Sensing Applications:** Researchers use airglow observations for remote sensing applications, aiding in the study of atmospheric processes, climate change, and the behavior of upper atmospheric layers.
- Airglow's study not only enriches our understanding of atmospheric dynamics but also aids in various scientific research endeavors, including space weather monitoring and remote sensing applications.

**Q2. Recently, the "Bletchley Declaration" was issued. What is it related to?**

1. Long-range Transboundary Air Pollution
2. International Collaboration on AI safety
3. Call for biodiversity considerations in all sectors of the Global Economy
4. Initiative to counter China's Belt and Road Initiative (BRI)

**Which of the above options is correct?**

- A) 1
- B) 2
- C) 3
- D) 4

**Q3. Which organ is most commonly affected by amyloidosis?**

- A) Lungs
- B) Liver
- C) Heart
- D) Pancreas

**Case Study:**

A poultry farm in a rural area experienced a sudden onset of illness among their birds. The farm primarily raised chickens for egg production. Over a few days, several birds exhibited symptoms such as respiratory distress, decreased egg production, and sudden death. The farm owner contacted local veterinary authorities suspecting an outbreak of avian influenza.

**Q4. What measures are commonly recommended to control the spread of avian influenza in poultry farms?**

- A) Vaccination of birds
- B) Strict biosecurity measures

- C) Quarantine of infected birds
- D) All of the above

**Q5. Which of the following statements about nitrogen-9 (N-9) is correct?**

- A) Nitrogen-9 is a stable isotope of nitrogen found abundantly in nature.
- B) Nitrogen-9 has an unusual composition of seven protons and two neutrons, challenging conventional stability thresholds.
- C) Nitrogen-9 is primarily used in the manufacturing of fertilizers and pharmaceuticals.
- D) Nitrogen-9 is a diatomic molecule commonly found in Earth's atmosphere.

**Q6. Case Presentation:**

A 35-year-old male presents to the rural health clinic with a sudden onset of fever, headache, and muscle pain. He reports a recent visit to a forested area in Karnataka. On examination, he has a high fever, enlarged lymph nodes, and a characteristic petechial rash. Given the patient's history and clinical presentation, the healthcare provider suspects Kyasanur Forest Disease.

**Q6. What is the primary vector responsible for transmitting the Kyasanur Forest Disease Virus (KFDV) to humans?**

- A) Aedes mosquitoes
- B) Anopheles mosquitoes
- C) Hard ticks (Haemaphysalis)
- D) Sandflies

**ANSWERS: 2) B, 3) C, 4) D, 5) B, 6) C**

## 8. CULTURE & HISTORY

### 8.1 UNESCO LIST OF CREATIVE CITIES

#### Context

- The Prime Minister, Shri Narendra Modi has lauded the inclusion of Kozhikode as 'City of Literature' and Gwalior as the 'City of Music' in UNESCO's Creative Cities Network.



#### Details

- Prime Minister Modi said that India's cultural vibrancy shines brighter on the global stage with Kozhikode's rich literary legacy.
- He also underlined Gwalior's commitment to preserving and enriching its musical heritage and said that it is being echoed across the world.

#### About UNESCO's Creative Cities Network

- UNESCO's Creative Cities Network is a global initiative that recognizes and connects cities that leverage creativity as a strategic driver for sustainable urban development.
- Launched in 2004**, this network aims to foster international cooperation, promote cultural diversity, and stimulate innovation through collaboration among cities that excel in various creative fields.

#### Categories

##### Literature

- Cities recognized under the Literature category, such as Kozhikode in India, celebrate literary excellence, host literary events, and nurture a vibrant literary culture.

##### Music

- Cities like Gwalior, designated under the Music category, distinguish themselves as hubs of musical creativity and heritage.

##### Design

- Cities in the Design category focus on utilizing design as a transformative force in urban planning and development.

##### Crafts and Folk Art

- Recognizing the importance of traditional crafts and folk art, this category celebrates cities that safeguard and promote these cultural expressions.

##### Film

- Cities in the Film category excel in the cinematic arts, promoting filmmaking, and hosting film festivals.

*Other Indian cities in the UCCN include Jaipur: Crafts and Folk Arts (2015), Varanasi: Creative City of Music (2015), Chennai: Creative City of Music (2017), Mumbai: Film (2019), Hyderabad: Gastronomy (2019), and Srinagar: Crafts and Folk Art (2021).*

#### Significance of Kozhikode and Gwalior:

##### Kozhikode as City of Literature:

##### Kozhikode, UNESCO's First City of Literature:

- Kozhikode, the inaugural Indian city bestowed with UNESCO's 'City of Literature' title, stands as a testament to its rich literary heritage. Notably, it hosts the esteemed Kerala Literature Festival, a prominent gathering of literary minds in Asia.
- This recognition cements Kozhikode as a pivotal hub for intellectual exchange and literary discourse.

### Literary Haven with Over 500 Libraries:

- The city takes pride in its extensive literary infrastructure, boasting over 500 libraries. This network serves as a nurturing ground for literary enthusiasts and has played a crucial role in shaping the literary landscape of Kozhikode.

### Notable Figures and Contributions:

- S. K. Pottekkatt, the city's most celebrated literary figure, epitomizes Kozhikode's literary prowess. Alongside him, other notable poets, scholars, and publishers have significantly enriched Malayalam literature and culture, making Kozhikode a dynamic center for literary creativity.

### Gwalior as the City of Music:

#### UNESCO's Designation:

- Gwalior, the second Indian city honored as the 'City of Music' by UNESCO (following Varanasi in 2015), holds a unique position in

the realm of Indian classical music. This recognition is a testament to the city's historical and cultural significance in the musical domain.

#### Cradle of the Gwalior Gharana:

- Recognized as the birthplace of Tansen, a legendary musician and composer in Indian history, Gwalior is also the cradle of the Gwalior Gharana—the oldest and most influential school of Hindustani classical music. This heritage has contributed significantly to the evolution and preservation of classical musical traditions.

#### Annual Tansen Sangeet Samaroh:

- Gwalior's annual Tansen Sangeet Samaroh stands out as one of the largest music festivals in India. Drawing music enthusiasts and artists from around the world, this event further solidifies Gwalior's reputation as a hub of musical heritage and creativity.

## 8.2 SHORT ARTICLES

### Tamil Lambadi embroidery

#### Context

- Porgai Artisan Association Society, with 60 plus women, has been making and selling embroidered clothes to ensure that there is awareness about the art form and that it is passed onto the next generation.



#### Details:

- The traditional Tamil Lambadi embroidery designs are all geometrical patterns with squares, rectangles, and circles.
- They have also been influenced by the local forests, birds, fruits and flowers.
- “These are not the same as those of the Banjaras in Andhra Pradesh or the Lambanis in Karnataka.

#### Key facts about Tamil Lambadi embroidery:

##### Legacy and Identity

- The Lambadi community, custodians of a rich cultural heritage, has honed the craft of Lambadi embroidery over generations.
- This intricate artistry adorns their attire and household items, standing as an integral part of Lambadi identity.

##### Craftsmanship Details

- Lambadi women, skilled artisans, weave this embroidery magic on cotton and silk fabrics using vibrant cotton threads.
- The designs, rooted in geometrical patterns, boast squares, rectangles, and circles.
- The influence of local flora and fauna is evident, with motifs reflecting the beauty of forests, birds, fruits, and flowers.

##### Traditional Attire

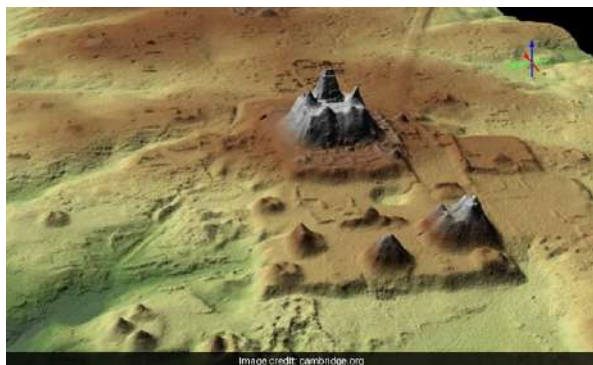
- The Petia, a traditional five-piece dress crafted from Mushru silk sourced from Kutch, is a living testament to Lambadi heritage.
- Worn proudly by elderly women, this attire symbolizes not just a style but a profound connection to their roots, echoing the

community's commitment to preserving its unique cultural expression.

## Mayan civilization

### Context

- The recently discovered temple in Mexico's Yucatán peninsula dates between A.D. 1000 and 1200.



### Details:

- Archaeologists in Mexico have unearthed the remains of a circular temple that may have been built in honor of the Maya serpent deity Kukulcán.
- The roughly 1,000-year-old temple was found in El Tigre, an archaeological site in the Yucatán Peninsula, and served as one of the ancient Maya's last settlements before the civilization collapsed, according to a translated National Institute of Anthropology and History (INAH) statement.

### About Mayan civilization

- **The largest Maya cities were home to many people.**

## Birsa Munda

### Context

- The Congress never cared for tribals, while the BJP stands for their respect and social justice, said Prime Minister Modi.

### Details:

- Four days ahead of the Madhya Pradesh assembly polls, Prime Minister Narendra Modi on Monday reached out to tribals and announced he will go to the native village of their icon Birsa Munda on his birth anniversary and launch a welfare scheme for the community as he blasted the Congress was ignoring adivasis for 60 years.

### About Birsa Munda:

- Birsa Munda was an Indian tribal freedom fighter, reformer and religious leader. He was nicknamed as 'Dharti Abba' or Father of the Earth, by his followers.

- At the major centre of Tikal, for example, within a six-square-mile area, there were over 10,000 individual **structures ranging from temple-pyramids to thatched-roof huts.**
- Tikal's population is estimated at up to 60,000, giving it a population density several times greater than an average city in Europe or America at the same period in history.
- **A Maya city from the Classic Period** usually consisted of a series of stepped platforms topped by masonry structures, ranging from great temple-pyramids and palaces to individual house mounds.
- **These structures were in turn** arranged around broad plazas or courtyards.
- **Maya architecture is characterized by a sophisticated sense of decoration** and art, expressed in bas-relief carvings and wall paintings.
- At major sites like Tikal, large buildings and complexes might also have been interconnected by stone roads or causeways.
- **Maya cities were rarely laid out in neat grids,** and appear to have developed in an unplanned fashion, with temples and palaces torn down and rebuilt over and over through the centuries. Because of this seemingly erratic pattern of settlement, the boundaries of Maya cities are often hard to determine.
- **Temple-pyramids were the most striking feature** of a Classic Maya city. They were built from hand-cut limestone blocks and towered over all surrounding structures.



## Contributions

### Early Life

- Birsa Munda, born in 1875 in present-day Jharkhand, India, belonged to the Munda tribe. His early life was marked by the socio-economic struggles faced by his community under British colonial rule.

### Ulgulan - The Tamar Revolt

- Birsa led the Munda community in the Ulgulan, or Tamar Revolt (1900), against the oppressive British policies and the exploitation by landlords.
- This uprising aimed to establish Munda Raj and end the dominance of outsiders in tribal lands.

### Religious Movement - Birsait

- Birsa propagated the Birsait religion, blending traditional Munda beliefs with a message of unity and resistance.
- This movement sought to establish a distinct identity for the Mundas and challenge the cultural hegemony imposed by the British.

### Munda Raj Movement

- Birsa envisioned a Munda Raj, a self-governing system for his people, free from external control. His movement aimed to restore the rights and autonomy of the tribal communities that were eroded under colonial rule.

### Incarceration and Death

- Birsa's resistance led to his arrest in 1900. Unfortunately, he died under mysterious circumstances in British custody, adding to the folklore surrounding his legacy.
- His death, whether due to illness or foul play, remains a topic of historical speculation.

### Legacy and Recognition

- Birsa Munda is remembered as a heroic figure who fought for the rights of tribal communities. His contributions paved the way for future movements advocating for indigenous rights and self-determination.
- In 2000, the Indian government declared his birthday, June 15, as "Birsa Jayanti," a day to honor and remember his legacy.



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## Balban's Tomb

### Context

- A few weeks ago, Lieutenant Governor VK Saxena unveiled six renovations nestled inside the park, one among which was the tomb of Balban.

### Details:

- Built in the 13th century and now renovated from ruins, the Tomb of Balban located inside Mehrauli's Archaeological park has served many purposes in its lifetime: an abode for debtors and fugitives, a slave-turned-Sultan's Tomb, and a landmark in India's architectural history.

### Key facts about Balban's Tomb:

#### Architectural Style



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 <b>SOUVIK DAS</b> <small>IA</small>	 <b>PARTHA CHATTERJEE</b> <small>Indian Polity</small>	 <p>&amp; many more...</p>	

**SALT LAKE: 88203 41777**  
**ELGIN ROAD: 81007 65577**

- The tomb reflects the distinct architectural style of the medieval Delhi Sultanate. It follows the Indo-Islamic architectural tradition, characterized by the use of arches, domes, and intricate geometric patterns.
- The tomb is a fine example of the early phase of Islamic architecture in India.

### Structural Design

- Balban's Tomb exhibits a simple yet elegant design. The square-shaped structure features a central chamber with a flat roof, surrounded by an arcade with three arched openings on each side.
- The use of red sandstone adds to the monument's aesthetic appeal.

### Tomb and Grave of Balban

- The main purpose of the structure was to house the tomb of Ghiyasud-din Balban.
- The tomb chamber contains the grave of Balban, signifying its significance as a mausoleum dedicated to the medieval ruler.

### Decorative Elements

- While relatively simple compared to later Mughal architecture, Balban's Tomb incorporates decorative elements such as ornate calligraphy and geometric designs.
- The use of intricate patterns on the ceilings and walls showcases the artistic sensibilities of the time.

### Preservation and Restoration

- Over the centuries, Balban's Tomb has undergone various phases of preservation and restoration to maintain its historical and architectural integrity.
- Efforts by archaeological bodies have contributed to the conservation of this important heritage site.

## Geoglyph

### Context

- The recent discovery of a 3,000-year-old Iron Age geoglyph circle in Telangana represents a significant archaeological find, shedding light on the ancient cultural practices.



### Details:

- The geoglyph circle was unearthed on the outskirts of MudichuThalapalli in the Medchal-Malkajgiri district of Telangana.
- It is etched on a low-lying granitoid hillock, measuring 7.5 meters in diameter with a well-defined circular shape.
- A 30-centimeter-wide rim surrounds the circle, and two triangles are positioned within it.

- It is suggested that this circle might have served as a model for megalithic communities in designing their circular burial sites.

### About Geoglyph:

- **Geoglyphs are large designs or motifs produced** on the ground, typically created by arranging stones, gravel, earth, or other durable elements to create a visual or artistic representation.
- **These formations often span significant areas**, and their designs can range from simple geometric shapes to intricate, detailed depictions of animals, humans, or complex symbols.
- **Geoglyphs have been found in various parts of the world**, with some of the most famous examples located in South America, particularly in the Nazca Lines of Peru.
- **While the purpose of geoglyphs remains a subject of debate**, they are widely recognized for their historical and cultural significance.
- Geoglyphs have a **rich history dating back thousands of years**.
- **The earliest known geoglyphs** are believed to have been created by ancient civilizations,

with some examples dating back to prehistoric times.

## Portuguese coins

### Context

- In North Goa's Nanoda Bamber village, a discovery of 832 copper coins in a buried pot has surfaced.



### Details:

- These coins are believed to have been minted in Goa during the 16th or 17th Century, a period when the region was under Portuguese rule.

### Key facts about Portuguese Colonial Coins:

#### Colonial Expansion

- Portuguese exploration and colonization efforts in the 15th to 19th centuries spanned regions like Africa, Asia, South America, and the Indian Ocean.

#### Cultural Exchange

- The circulation of coins reflected not just economic transactions but also cultural interactions between Portugal and its colonies.

#### Types

- Coins issued during the Portuguese colonial era varied in metals, denominations, shapes, and designs, reflecting the regions' local traditions and resources.

#### Coins from India

- **Portuguese Indian Coinage:** Coins minted in the Indian subcontinent showcased the blend of Portuguese and Indian artistic motifs, denominations, and metals.
- **Rupia and Xerafim:** Rupia and Xerafim were notable denominations used during the Portuguese rule in Goa, Daman, and Diu.

### Significance

- **Historical Significance:** Portuguese colonial coins serve as valuable artifacts, providing insights into economic systems, cultural exchanges, and historical events during that period.
- **Collectors' Interest:** Numismatists and collectors highly value these coins for their rarity, historical context, and intricate designs.
- **Cultural Reflection:** Coins from the Portuguese era stand as a testament to the mingling of Portuguese and indigenous cultures, showcasing the diverse heritage of the colonial territories.

## Indian Miniature Art

### Context

- In his work, Goswamy unearthed family lineages of renowned artists who played an essential role in the development and continuation of miniature painting.



### Details:

- **Indian art historian and critic Brijinder Nath Goswamy**, best known for his scholarship on Indian miniature painting tradition, passed away on Friday in Chandigarh due to prolonged ill health. He was 90.
- **A Padma Bhushan recipient and former IAS officer**, Goswamy first came under the spotlight after the publication of his groundbreaking 1968 article, 'Pahari Painting: The Family as the Basis of Style'.

### About Indian Miniature Art:

#### Origin and Early Influences (750 A.D - 960 A.D)

- **The history and evolution of Miniature paintings** in India trace back to 750 A.D during the rule of the Palas in the eastern region.

- **The initial impetus** came from the religious teachings of Buddha, leading to the creation of small images inscribed on palm leaves.

#### Chalukya Dynasty Import (960 A.D)

- **The popularity of these paintings expanded as the Chalukya Dynasty** kings imported similar artworks to western India around 960 A.D.
- The necessity for compact size remained, aligning with the palm leaf medium.

#### Mughal Patronage and Fusion (16th Century)

- **Miniature paintings gained prominence** with the expansion of the Mughal Empire, fueled by Emperor Akbar's keen interest.
- **The Mughal style fused elements** of Indian and Persian paintings. European influences further shaped the evolution of these miniatures at the Mughal court.

#### Rajput Patronage and Regional Characteristics

- **Despite the collapse of the Mughal Empire**, Rajput kings in Rajasthan continued to support miniature paintings.
- **The Rajasthani miniatures** developed unique characteristics, often depicting royal lifestyles and mythological tales, particularly those of Lord Krishna and Radha.

#### Continued Rajput Patronage and Subject Diversity

- **Rajput miniature paintings** persisted in portraying the courage of kings and queens, highlighting their contributions to their people and kingdoms.
- **The subjects expanded** to include various aspects of royal life and mythological narratives.

## Janjatiya Gaurav Diwas

### Context

- The government of India has declared 15th November as Janjatiya Gaurav Divas dedicated to the memory of brave tribal freedom fighters.

### Details

- Prime Minister Narendra Modi on Wednesday launched a Rs 24,000-crore project for vulnerable tribal groups on the birth

anniversary of tribal icon Birsa Munda from Jharkhand's Khunti district.

- The PM Janjati Adivasi Nyaya Maha Abhiyan is meant to ensure last-mile welfare scheme delivery and protection for Particularly Vulnerable Tribal Groups (PVTGs).

### About Janjatiya Gaurav Divas:

#### About

- **Janjatiya Gaurav Divas is dedicated to commemorating** the valiant efforts of tribal freedom fighters, ensuring that their sacrifices for the nation are remembered by future generations.

#### Tribal Contributions to India's Freedom Struggle

- **Highlighting the significant role** played by various tribal communities such as Santhals, Tamars, Kols, Bhils, Khasis, and Mizos in strengthening India's freedom struggle against British colonial rule.

#### Birsa Munda's Birth Anniversary

- **November 15 marks the birth anniversary of Birsa Munda**, revered as Bhagwan by tribal communities nationwide.
- **Birsa Munda courageously fought against the exploitative British colonial system**, leading a movement against oppression and advocating for 'Ulgulan' or Revolution.

#### Tribal Cultural Heritage Recognition

- **The declaration of Janjatiya Gaurav Divas acknowledges** the rich history and cultural heritage of tribal communities, emphasizing the importance of preserving and celebrating their cultural contributions.

#### Annual Celebration of Janjatiya Gaurav Divas

- **The day, observed annually, serves as a platform** to recognize and appreciate the ongoing efforts of tribal communities in preserving cultural heritage and promoting core Indian values such as valor, hospitality, and national pride.

## Chhath Puja

### Context

- Chhath Puja festival is being celebrated from 17 November till 20 November 2023.

### Details:

- Chhath Puja is a sacred festival deeply rooted in Hindu traditions, symbolizing reverence for nature, devotion to the Sun God, and communal harmony.
- Its rituals, fasting, and cultural significance reflect the rich heritage and spiritual beliefs of the Indian subcontinent, fostering unity and reverence for nature among its practitioners.

### About Chhath Puja:

- Chhath Puja, also known as Surya Shashti, is a vibrant and ancient Hindu festival primarily celebrated in the Indian states of Bihar, Jharkhand, Uttar Pradesh, and parts of Nepal.
- This four-day-long festival is dedicated to worshipping the Sun God, Surya, and his consort Usha, seeking their blessings for well-being, prosperity, and longevity.

### Significance and History

#### Ancient Origins:

- Traces its origins to ancient Vedic texts and is considered one of the oldest Hindu festivals.
- It is believed to have been practiced since the Mahabharata era.

#### Worship of Sun God:

- Chhath Puja is dedicated to Surya Devta, the Sun God, and Chhathi Maiya, considered the sister of Surya Devta.

#### Cultural and Social Importance:

- Celebrates nature, life, and the importance of the Sun in sustaining life on Earth.
- It promotes unity, social harmony, and family bonds.

## Constantine Joseph Beschi

### Context

- Constantine Joseph Beschi, popularly known as Veeramamunivar, was an Italian Jesuit priest, Tamil scholar, and a key figure in South India during the 18th century.

### Details:

- Constantine Joseph Beschi, popularly known as Veeramamunivar, was an Italian Jesuit priest, Tamil scholar, and a key figure in South India during the 18th century.

### Key facts about Constantine Joseph Beschi:

#### Birth and Education

- Beschi was born in Castiglione delle Stiviere, Italy, in 1680. He received his education in rhetoric, humanities, and grammar at the Jesuits' High School in Mantua.

#### Mission to India

- Inspired by the Jesuits' work in India, Beschi obtained permission to join the mission in Madurai, South India. He arrived in Goa in 1710 and later reached Madurai in 1711.

#### Contribution to Tamil Literature

- **Lexicography:** Beschi compiled the first Tamil-Latin dictionary and the comprehensive Chaturakarati, a quadruple lexicon containing words, synonyms, and categories of words and rhymes.
- **Translations and Works:** He translated and explained the "Thirukkural" into Latin and translated various Tamil literary works into European languages. He authored Tamil grammar, dictionaries, and prose works.
- **Innovations in Tamil Script:** Beschi introduced changes in Tamil script, including dotting the consonants and altering the representation of long vowels.

#### Recognition and Legacy

- **Statues and Tributes:** His contributions were recognized by Tamil Nadu, which erected statues in his honor in Chennai (Madras) and Madurai. He was celebrated as a significant figure in both Tamil Nadu and his native Italy.
- **Legacy in Literature:** Beschi's works, including the poetic masterpiece Thembavani and other writings, left a lasting impact on Tamil literature.

## Lachit Borphukan

### Context

- The Prime Minister, Shri Narendra Modi has paid tributes to Lachit Borphukan on Lachit Diwas.

### Details:

- We commemorate the courage of Lachit Borphukan. His exceptional leadership in the Battle of Saraighat epitomizes resilience and commitment to duty.

- His legacy is a timeless testament to the courage and strategic brilliance that have shaped our history.

#### About Lachit Borphukan:



#### Early Life and Lineage

- Lachit Barphukon, born on November 24, 1622, emerged as a prominent commander of the Ahom forces in the 17th century.
- His father, Momai Tamuli Borbarua, held the esteemed position of commander-in-chief of the Ahom army, contributing to the military legacy of the family.

#### Ahom Kingdom Legacy

- The Ahom kings, who ruled over what is now known as Assam and parts of neighboring states, commanded the region for nearly six centuries—from the 13th to the 19th centuries.
- The kingdom faced numerous challenges between 1615 and 1682, notably from the Mughals, including Jahangir and Aurangzeb.

#### Strategic Battles and Counterattacks (1667-1682)

- Barphukon played a pivotal role in the series of counterattacks launched by the Ahom rulers between 1667 and 1682 to reclaim territories occupied by the Mughals.
- The battles during this period were crucial in safeguarding the sovereignty of the Ahom kingdom.

#### Versatile Skills and Positions Held

- Barphukon's proficiency extended beyond military skills; he was well-versed in humanities and scriptures.
- Holding key positions within the kingdom, including 'Soladhara Barua,' 'Ghora Barua,' commander of Simulgarh Fort, and 'Dolakaxaria Barua,' showcased his versatility and leadership capabilities.

#### Commander of the Ahom Army (August 1667)

- Facing significant losses, Mughal king Aurangzeb dispatched a large army led by Raja Ram Singh I to recapture the lost territories.
- In the Battle of Alaboi, fought in August 1669 in the Alaboi Hills near Dadara in North Guwahati, Barphukon and his army triumphed over the Mughal cavalry. The victory, however, came at a cost, with 10,000 Ahoms sacrificing their lives.

### **Sant Mirabai**

#### Context

- PM Modi attends an event commemorating the birth anniversary of Sant Meera Bai.

#### Details:

- Sant Mirabai Janmotsav,' an event dedicated to celebrating the 525th birth anniversary of Sant Mirabai is scheduled to take place in Mathura, Uttar Pradesh.
- During the event, the Prime Minister will unveil a commemorative stamp and coin as a tribute to Mirabai. This event will signify the commencement of a year-long series of programs in honor of Mirabai.

#### About Mirabai (1498-1546):

#### Early Life and Royal Heritage

- Mirabai, also known as Meera, was born into the Rathore Rajput royal family in Kudki, located in the present-day Pali district of Rajasthan.
- Her formative years were spent in Merta, and she was the great-granddaughter of Rana Jodhaji, the founder of Jodhpur.

### Marriage and Challenges

- In 1516, Mirabai was married to Bhoj Raj, the crown prince of Mewar, in an arrangement she did not willingly enter into.
- Her marital life presented various challenges, shaping her journey towards spiritual awakening.

### Devotion to Lord Krishna

- Mirabai's life took a transformative turn as she became a devoted follower of Lord Krishna. Her unwavering devotion compelled her to abandon the royal palace and embark on a spiritual journey.
- Mirabai viewed Krishna as her beloved, setting an exemplary standard of Premabhakti (love-filled devotion).

### Departure from Mewar

- After the death of her husband, Mirabai left the kingdom of Mewar and embarked on pilgrimages. In her later years, she is said to have lived in Dwarka or Vrindavan.

### Contribution to the Bhakti Movement

- Mirabai's significant contribution to the Bhakti movement is evident in her devotional songs and lyrics. These compositions form a rich cultural heritage, and her bhajans continue to be sung across India.

## **Guru Tegh Bahadur**

### Context

- The President of India, Smt. Droupadi Murmu in her message on the eve of 'Martyrdom Day' of Guru Teg Bahadur has said: "I pay my homage to Guru Teg Bahadur Ji on the occasion of his martyrdom Day.

### Details:

- Guru Teg Bahadur Ji made a supreme sacrifice for the protection of human values and rights. Guru Teg Bahadur Ji gave the message of love, compassion and brotherhood.
- His teachings inspire us to serve humanity and promote the unity of all.

### About Guru Teg Bahadur:

#### Early life

- The Guru was born in Amritsar in 1621 to Mata Nanki and Guru Hargobind, the sixth

Sikh guru, who raised an army against the Mughals and introduced the concept of warrior saints.

- As a boy, Tegh Bahadur was called Tyag Mal because of his ascetic nature.
- He spent his early childhood in Amritsar under the tutelage of Bhai Gurdas, who taught him Gurmukhi, Hindi, Sanskrit, and Indian religious philosophy, while Baba Budha trained him in swordsmanship, archery, and horse-riding.

### The times of Guru Tegh Bahadur

- Aurangzeb was the ruling Mughal emperor at the time.
- Guru Tegh Bahadur who started traveling extensively through Malwa and Majha, first came into conflict with the authorities when he started questioning the tradition of worshipping at the graves of pirs and faqirs.
- He preached against this practice and urged his followers to be 'nirbhau' (fearless) and 'nirvair' (without envy).
- His sermons, delivered in a mix of Sadukhri and Braj languages, were widely understood from Sindh to Bengal.
- Guru Tegh Bahadur often alluded to Panchali (Draupadi) and Ganika in his preachings and declared that Hindustan could regain its piety if it took refuge in one God.
- A year after setting up his headquarters in present-day Anandpur Sahib in 1665, the Guru spent four-odd years traveling up to Dhaka in the east, and going up to Puri in Odisha.
- Guru rushed back to Punjab to learn about the increasing atrocities by the Mughals.

## **Kambala Festival**

### Context

- During the weekend of November 25 and 26, 160 pairs of buffaloes and their jockeys are set to race in the specially made slush tracks for Kambala races, being held at City Palace Grounds in Bengaluru.

### Details

- Kambala has in the past been banned by the Supreme Court, but the Karnataka

government, keeping its popularity in mind, amended legislation to allow the races to go on.

### Key facts about Kambala

#### About

- Kambala is a traditional buffalo race that takes place in the coastal regions of Karnataka.
- The event is a unique and vibrant part of the local culture, deeply rooted in the agricultural traditions of the region.

#### Origin

- **Kambala has its roots in ancient farming practices** where buffalo races were organized to thank the gods for a good harvest and to entertain the farming community.

#### Types

- **Pookere Kambala:** In this type, the buffaloes are tied to a single plow, and the race is a straight dash.
- **Baare Kambala:** Here, the buffaloes are tied to a wooden plank, and the race involves two pairs of buffaloes competing side by side.

#### Categories

- **Negilu (Plough):** Entry-level buffalo pairs participate using lighter ploughs.
- **Hagga (Rope):** Jockeys race buffaloes with only a rope tied to both animals.
- **Adda Halage:** Participants stand on a horizontal plank dragged by buffaloes.
- **Kane Halage:** A wooden plank tied to buffaloes, with water gushing out through holes as it is dragged. The winner is determined by the height of the splashing water.

## 8.3 SNIPPETS



### Elephanta Caves

- Elephanta Caves is a UNESCO World Heritage Site situated on Elephanta Island in Mumbai Harbour, Maharashtra.
- Believed to have been constructed between the 5th and 8th centuries AD, the caves represent an important era in Indian history, reflecting the rich cultural tapestry of ancient India.
- While the exact origins remain debated, it is generally believed that the Elephanta Caves were built during the rule of various dynasties, including the Chalukyas and the Rashtrakutas.

## 8.4 1 MAINS 5 MCQs

**Q1. Explain the cultural and historical significance of geoglyphs worldwide, highlighting their diverse forms, potential functions, and contributions to the understanding of ancient civilizations and their artistic and ritualistic practices.**

#### **Introduction**

- Geoglyphs are **large designs or motifs produced on the ground, typically created by arranging stones, gravel, earth, or other durable elements to create a visual or artistic representation.** These formations often span significant areas, and their designs can range

from simple geometric shapes to intricate, detailed depictions of animals, humans, or complex symbols.

#### **Diverse forms**

- **Nazca Lines, Peru:** Located in the Nazca Desert, these extensive geoglyphs are renowned for their intricate designs of animals, birds, and geometric shapes. The purpose behind their creation remains a subject of ongoing research and debate.
- **Atacama Giant, Chile:** A large anthropomorphic geoglyph situated on a hillside in the Atacama Desert, the figure is



thought to represent a deity or an ancient astronomical calendar.

### Potential Functions:

- **Ceremonial and Ritualistic Practices:**
  - Many geoglyphs are associated with ceremonial and ritualistic practices. The Nazca Lines, for example, are theorized to have had astronomical and agricultural significance, potentially serving as sites for ceremonies related to fertility and water.
- **Land Art and Symbolism:**
  - Some geoglyphs, like the Uffington White Horse, are considered as expressions of land art and symbolic representations. The stylized horse is believed to have been associated with tribal symbolism or even religious beliefs.

### Cultural Significance:

- Geoglyphs play a significant role in **understanding the cultural practices, beliefs, and societal structures of ancient civilizations.**
- They contribute to the collective human heritage, providing valuable insights into the artistic, spiritual, and technological achievements of past societies.

### Contributions to Understanding Ancient Civilizations:

- **Cultural Identity and Symbolism:**
  - Geoglyphs offer insights into the cultural identity of ancient civilizations. They represent unique artistic expressions and may carry cultural symbolism, providing clues about the beliefs, values, and practices of these societies.
- **Technological and Engineering Skills:**
  - The creation of large-scale geoglyphs required advanced planning, engineering, and execution. Studying these structures enhances our understanding of the technological capabilities of ancient civilizations and the tools at their disposal.

### Conclusion

- Geoglyphs represent an intriguing aspect of human history, serving as a testament to the creativity and ingenuity of ancient civilizations. While many aspects of their origins and meanings remain shrouded in mystery, ongoing research and advancements in technology continue to shed light on these enigmatic creations, fostering a deeper understanding of the diverse cultures that produced them.

---

### Q2. Which of the following statements about the Lambadi community in India is true?

1. Lambadi is a language spoken by the once nomadic Lambadi Banjara people across India.
2. Lambadi language is often written in the scripts of the regions where it is spoken.
3. Lambadi dance is a traditional form performed by Banjari women, often characterized by balancing metal pots on their heads.

#### Options:

- a) Statement 1 and 2 are true.
- b) Statement 2 and 3 are true.
- c) Statement 1 and 3 are true.
- d) All three statements are true.

### Q3. Which of the following statements about the Elephanta Caves is/are correct?

#### Options:

- A) Elephanta Caves are located in the state of Maharashtra, India.
- B) The rock-cut architecture at Elephanta Caves primarily depicts stories from Hindu mythology.
- C) Elephanta Caves were built during the 12th century AD.
- D) Both A and B

### Q4. What is the traditional buffalo race called, which takes place in the coastal regions of Karnataka, India, involving pairs of buffaloes

*tethered to a plow-like device and raced in muddy tracks?*

- a) Jallikattu
- b) Kambala
- c) Polo
- d) Buzkashi

**Q5. During the Portuguese colonial era, which of the following features were characteristic of the coins minted in Goa?**

- 1. The coins featured the Cross of the Order of Christ on the obverse side and the armillary sphere, symbolizing King D. Manoel, on the reverse.
- 2. The copper 'Buzaruccos' depicted the coat-of-arms on one side and a sheaf of arrows on the flip side.
- 3. St. Thomas was depicted on both sides of the coins, with initials 'S' and 'T' on one side and

the crowned arm of Portugal with the monarch's initials on the other.

- 4. The gold coins were issued in denominations of 'Pagodas' or 'Hons' which were similar in size, value, and weight to the 'Cruzado' or 'Manoel' coins.

**Options:**

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 4 only
- D. 3 and 4 only

**Q6. Which of the following Indian states is NOT prominently known for the celebration of Chhath Puja?**

- A) Bihar
- B) Rajasthan
- C) Uttar Pradesh
- D) Jharkhand

**ANSWERS: 2) D, 3) D, 4) B, 5) A, 6) B**

## 9. GEOGRAPHY & DISASTER MANAGEMENT

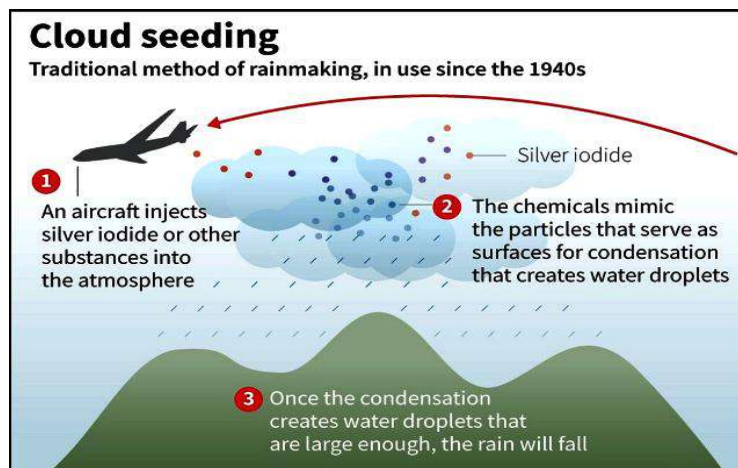
### 9.1 CLOUD SEEDING

#### Context

- The Delhi government said IIT-Kanpur could carry out the first pilot project for cloud seeding around November 20-21 to induce rain.

#### Details

- Even as Delhi-NCR witnessed light showers on Thursday night (November 9), the Delhi government had announced earlier this week that it was considering cloud seeding or 'artificial rain' to wash away pollutants in the air.
- The mooted proposal has been attempted previously in India but only in the monsoon season – when clouds with moisture are present – and pre-monsoon months.
- Besides, it has only been done before in the country to bring rainfall to drought-prone areas, and not mitigate pollution.



#### About Cloud Seeding

##### Formation of Clouds

- Clouds are composed of minuscule water droplets or ice crystals that materialize when water vapor in the atmosphere cools and condenses around tiny particles of dust or salt suspended in the air.

##### Importance of Condensation Nuclei

- The presence of particles, known as condensation or ice nuclei, is crucial for forming raindrops or snowflakes.
- Without these nuclei, precipitation cannot occur, and the water vapor remains in the atmosphere.

##### Cloud Seeding Technique

- Cloud seeding is a weather modification technique designed to enhance a cloud's ability to produce rain or snow. It involves the introduction of tiny ice nuclei into specific types of subfreezing clouds.

##### Process of Cloud Seeding

- Introduction of Ice Nuclei:** Cloud seeding introduces additional ice nuclei into clouds, providing a base for the formation of snowflakes.
- Snowflake Formation:** These nuclei's presence triggers snowflakes' formation within the cloud.
- Growth and Fall:** The newly formed snowflakes grow in size and eventually fall from the cloud to the Earth's surface.

##### Impact on Snowpack and Streamflow

- Cloud seeding contributes to the augmentation of snowpack and streamflow.
- As the seeded clouds produce more snowflakes that reach the ground, it results in increased accumulation of snow and enhanced water flow in streams.

## Conditions Required for Cloud Seeding

### Presence of Cloud Cover:

- Cloud seeding requires the presence of clouds. Adequate cloud cover is essential for the seeding process to be effective.

### Cloud Type and Depth:

- Specific types of clouds are necessary for cloud seeding. Additionally, these clouds must have a particular depth to be suitable for seeding.

### Cloud Droplet Quantity:

- Cloud seeding involves increasing the radius of cloud droplets. Therefore, an adequate number of cloud droplets must be present inside the cloud for the process to be successful.

### Absence of Clear Sky:

- Cloud seeding cannot be performed in clear skies. The presence of clouds is a prerequisite for the seeding technique.

### Meteorological Conditions in Winter:

- In winter, cloud seeding is influenced by the presence of clouds formed during western disturbances. These disturbances originate in the Caspian or Mediterranean Sea and bring non-monsoonal rainfall to northwest India.

### Stable Atmosphere:

- Cloud seeding in winter is associated with disturbances that disrupt the stability of the atmosphere. A stable atmosphere is necessary for the formation of clouds.

## Cloud Seeding in India

### Previous Attempts:

- Cloud seeding has been experimented with in India, primarily during the monsoon season in regions like **Karnataka, Maharashtra, and Tamil Nadu**. These attempts aimed to enhance rainfall and address water scarcity issues in drought-prone areas.

### CAIPEEX-IV Experiment:

- The fourth phase of the Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX-IV) took place during the **monsoon seasons of 2018 and 2019 in Solapur, Maharashtra**.
- This experiment indicated a relative enhancement of 18% in rainfall, suggesting a degree of success in using cloud seeding to augment precipitation.

### Challenges and Unsuccessful Attempts:


- **Despite the efforts, cloud seeding proposals faced challenges.** In 2018, there was a proposal for cloud seeding in Delhi, but it did not materialize due to various hurdles, including the need for multiple permissions and the absence of seeding equipment on IIT Kanpur's aircraft.

### Scientific Assessments:

- Scientists, such as **Thara Prabhakaran from the Indian Institute of Tropical Meteorology (IITM)**, have been involved in cloud seeding experiments.
- **The assessments include statistical and physical experiments** to understand the processes leading to precipitation. These studies involve documenting changes within clouds before and after seeding.


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### Uncertainties and Further Research:

- The success of cloud seeding depends on various factors, and uncertainties exist in the process. The rain formed in the cloud may not necessarily reach the surface and can even evaporate on its way down due to tropical conditions.
- **The efficacy of cloud seeding during winter** remains unexplored, and further research is needed to understand its feasibility in different weather conditions.

## 9.2 SHORT ARTICLES

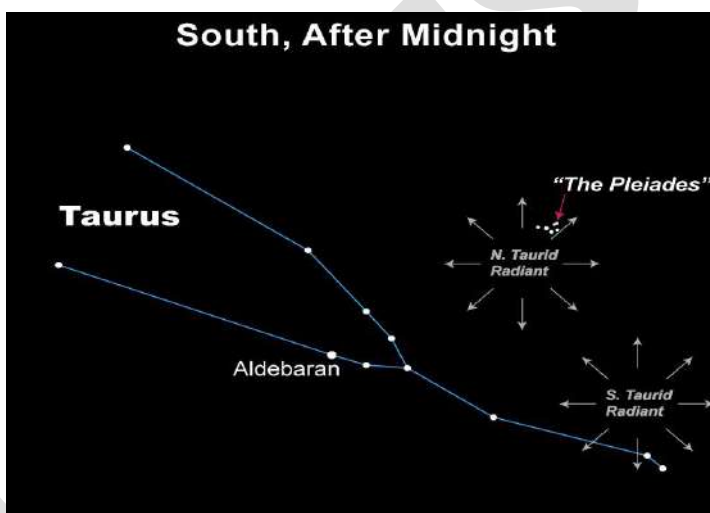
### Taurid Meteor Showers

#### Context

- A celestial light show will grace the night sky as the Taurid meteor shower reaches its peak.

#### Details

- The modest Northern Taurid and Southern Taurid meteor showers peak on separate days over the next week.
- The Taurid meteor shower is upon us – but unlike most annual displays of "shooting stars," this one has two peak nights falling five days apart.
- Known for its fireballs – very bright meteors that appear as flashes while falling through the atmosphere – the Taurid meteor showers are modest, offering fewer than 10 shooting stars per hour on peak nights.
- However, November is one of the better months for shooting stars because there are many sporadic meteors, according to the American Meteor Society.



#### About Taurid Meteor Showers:

##### Cometary Origins

- The Taurid meteors trace their celestial lineage to Comet 2P/Encke, boasting the solar system's briefest orbital period—just 3.3 years for a complete solar circuit.
- As the comet journeys, it leaves behind fragments that ignite into the dazzling Taurid meteor showers.

##### Distinctive Features

- Named after the Taurus constellation, the Taurid meteors exhibit uniqueness by comprising two autonomous streams—the Southern and Northern Taurids.
- Over time, the gravitational pull of Jupiter has lent its touch, causing these streams to disperse.

##### Naked-Eye Visibility

- Observers are treated to a visual feast as the Taurid meteor showers illuminate the night sky, peaking after midnight.
- Despite their modest frequency, with fewer than 10 shooting stars per hour on peak evenings, the Taurids stand out for their naked-eye visibility.

##### Jupiter's Gravitational Ballet

- The gravitational dance with Jupiter has sculpted the Taurids' distinctiveness, adding a touch of celestial ballet to their trajectory.
- This intricate interplay contributes to their visual splendor and observable phenomena.

##### November's Meteor Extravaganza

- November emerges as a meteor enthusiast's delight, with the Taurids showcasing irregular meteors, transforming the night sky into a celestial canvas.
- The abundance of shooting stars during this period elevates November's status as one of the prime months for meteor observation.

## Stable Auroral Arc

### Context

- The Indian Astronomical Observatory (IAO) in Ladakh recently acquired breathtaking photographs of a rare red aurora known as a Stable Auroral Arc.

### Details:

- In an unexpected yet stunning celestial event, the Indian Astronomical Observatory (IAO) in Ladakh's Hanle and Merak captured images of a rare redness in the skies.
- **The red-colored auroral activity sparked** on the night of November 5 and the unusual spectacle was attributed to a **Stable Auroral Red (SAR) event**, a rare atmospheric phenomenon that paints the sky in vivid shades of red, contrasting the more common green and blue curtains of light typically associated with auroras at higher latitudes.



### About Stable Auroral Arc:

#### Geomagnetic Storm Characteristics

- The rare atmospheric event occurred during a strong G3-class geomagnetic storm. Geomagnetic storms are disturbances in Earth's magnetosphere caused by solar wind and solar magnetic storms.

#### Formation of SAR Arcs

- SAR (Stable Auroral Red) arcs form differently than traditional auroras. Unlike auroras, which result from charged particles colliding with the atmosphere, SAR arcs are a product of thermal energy escaping into the upper atmosphere.

#### Source of Thermal Energy

- The thermal energy responsible for SAR arcs originates from Earth's ring current system. The ring current is a donut-shaped circuit that circulates millions of amperes around the planet.

#### Activation during Geomagnetic Storm

- The recent G3-class geomagnetic storm played a crucial role in energizing the Earth's ring current system. The storm's intensity led to the dispersal of energy into the formation of SAR arcs.

#### Global Occurrence

- This rare atmospheric event was not localized but recorded globally in various places around the world. The widespread nature of the phenomenon indicates the impact of the geomagnetic storm on Earth's magnetosphere.

#### Recorded Observations

- Scientists and observers documented the occurrence of SAR arcs during the geomagnetic storm. Observations from different locations provided valuable insights into the characteristics and behavior of these rare atmospheric features.

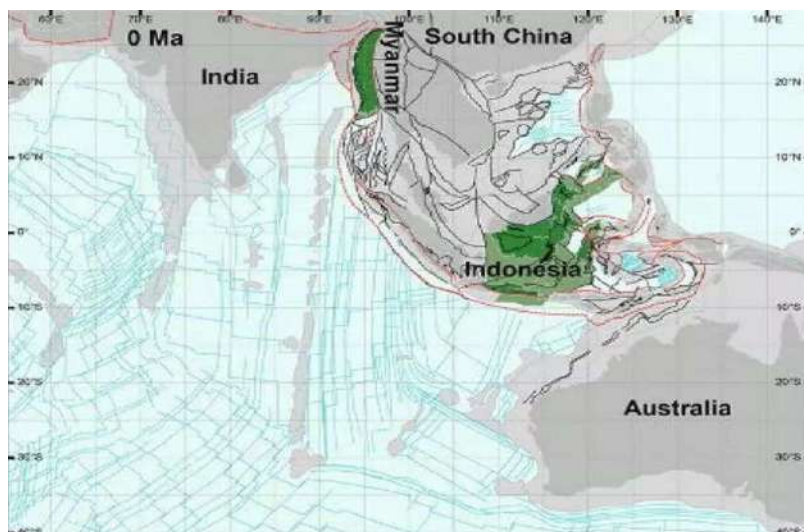
## Argoland

### Context

- A chunk of land that broke off from Australia 155 million years ago seemed to have vanished.

### Details

- A chunk of land that broke off from Australia 155 million years ago seemed to have vanished.
- The continent of Argoland, which seemingly vanished after splitting from Australia 155 million years ago, has finally been discovered, according to a new study.
- Continental splits usually leave traces in ancient fossils, rocks, and mountain ranges. But up until now, scientists had been unable to find where Argoland had ended up.
- Now researchers at Utrecht University in the Netherlands think they have uncovered the mysterious landmass, hidden under the eastern islands of Southeast Asia.
- The discovery could help explain something known as the Wallace line, which is an imaginary boundary that separates Southeast Asian and Australian fauna.



### About Argoland

#### Formation from Gondwana

- Argoland, once an integral part of the supercontinent Gondwana, separated from northwestern Australia approximately 155 million years ago.
- This separation was driven by tectonic pressures, leading to the fragmentation of the landmass.

#### Tectonic Processes

- **The geological evolution of Argoland involved tectonic forces** that stretched and displaced it away from the rest of the continent.
- Unlike some landmasses that remain cohesive after separation, Argoland fragmented into smaller pieces.

#### Northwest Movement

- Initially, Argoland moved northwest ward, contributing to the formation of several Southeast Asian islands in the process.
- **This movement shares similarities with the geological history** of other landmasses in the region.

#### Fragmentation and Archipelago Formation

- **In contrast to India, which remained a single landmass** after separating from Gondwana, Argoland's fragments arrived at their destinations simultaneously.
- This simultaneous arrival resulted in the formation of an archipelago rather than a unified landmass.

#### Current Distribution

- **Today, Argoland exists as an archipelago**, distributed across various Southeast Asian islands.
- The remnants of this ancient continent are **divided by ocean basins, contributing to the diverse geography of the region.**

#### Geological Significance

- The story of Argoland's separation and fragmentation sheds light on the dynamic geological processes that have shaped the **Southeast Asian landscape.**

- Understanding the geological history of the region enhances our knowledge of tectonic activities and landmass evolution.

### Contributions to Southeast Asian Islands

- The remnants of Argoland have played a crucial role in the construction of various Southeast Asian islands. The archipelagic distribution highlights the impact of ancient geological events on the contemporary geography of the region.

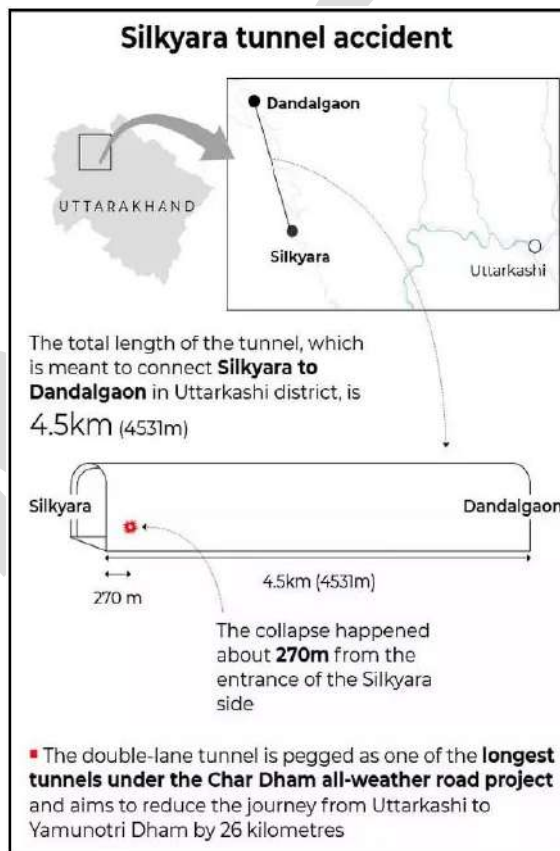
## Uttarakhand Tunnel Collapse

### Context

- Recently, an under-construction Silkyara-Barkot tunnel in Uttarakhand collapsed trapping 40 workers inside.

### Details:

- In Uttarkashi district, a noteworthy infrastructure project is underway – the construction of a 4.531 km long bi-directional tunnel on the Yamunotri National Highway.
  - This initiative holds significance as it is an integral part of the broader Char Dham All-Weather Accessibility Project.
- The primary aim behind the construction of this tunnel is to ensure year-round accessibility to Yamunotri, one of the sacred dhams on the revered Chardham Yatra route.
- By providing all-weather connectivity, the project seeks to eliminate weather-related travel challenges, facilitating a smoother pilgrimage experience for devotees and tourists.
- Beyond its role in enhancing religious tourism, the tunnel project is poised to have a positive impact on the socio-economic development of the region.
- The improved connectivity is expected to catalyze trade and tourism within the country, fostering economic growth and development in the Uttarkashi district.



Rat-hole mining is a technique primarily used for extracting coal from narrow, horizontal seams.

### About Silkyara-Barkot Tunnel:

#### Location

- The Char Dham All-Weather Road project is a significant infrastructure initiative by the Central government aimed at enhancing road connectivity to four sacred Hindu sites in Uttarakhand.
- The project focuses on the development of highways leading to **Gangotri, Yamunotri, Kedarnath, and Badrinath.**

#### Tunnel Construction Between Silkyara and Dandalgaon

- As part of this ambitious project, a 4.5-kilometer tunnel is currently under construction between Silkyara and Dandalgaon on the Brahmakhal-Yamunotri portion of the National Highway.
- This tunnel construction is a crucial component of the larger plan to upgrade and widen a total of 1100 kilometers of highways, transforming them into all-weather roads.

#### Aim



- The primary objective of the **Chardham Mahamarg Vikas Pariyojana** is to ensure seamless and reliable connectivity to the sacred Char Dham sites throughout the year.
- **By converting existing highways into all-weather roads**, the government aims to facilitate safer and more accessible travel for pilgrims and tourists visiting these revered destinations.

### 9.3 SNIPPETS



#### Phreatomagmatic Eruption

- A phreatomagmatic eruption built a new island near Japan's Ogasawara Island group.
- It is a magmatic and hydrothermal eruption.
- It usually interacts explosively, resulting in the simultaneous ejection of steam and pyroclastic debris.
- The same mechanism produces phreatomagmatic ash in a wide range of basic and acidic compositions.
- It forms a blocky, homogeneous crust with a low vesicle content.

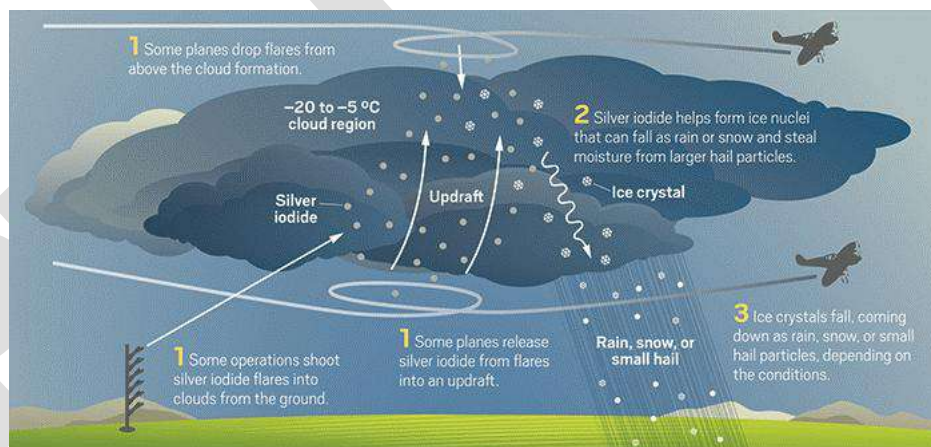
APTI PLUS

### 9.4 1 MAINS & 5 MCQs

**Q1. What is Cloud Seeding? Outline the advantages and disadvantages of Cloud Seeding and suggest a way forward.**

#### Introduction

- Cloud seeding is a weather modification technique that improves a cloud's ability to produce rain or snow by introducing tiny ice nuclei into certain types of subfreezing clouds. These nuclei provide a base for snowflakes to form. After cloud seeding takes place, the newly formed snowflakes quickly grow and fall from the clouds back to the surface of the Earth, increasing snowpack and streamflow.



#### Advantages of Cloud Seeding

1. **Increased Precipitation:**
  - The primary advantage is the potential for increased precipitation, which can be beneficial in water-scarce regions. Cloud seeding aims to enhance rainfall or snowfall, providing additional water resources for agriculture and water supply.
2. **Drought Mitigation:**
  - Cloud seeding can be employed as a tool for drought mitigation. By increasing precipitation, it helps alleviate water shortages during periods of drought, supporting ecosystems and human activities dependent on water resources.

## Disadvantages of Cloud Seeding

### 1. Environmental Concerns:

- The introduction of seeding agents raises environmental concerns. Silver iodide, one of the common substances used, may have ecological impacts, and the long-term effects on ecosystems are not fully understood.

### 2. Unpredictable Outcomes:

- Cloud seeding outcomes are not always predictable, and the success of the technique can vary. Factors such as cloud type, atmospheric conditions, and the efficiency of seeding agents can influence the effectiveness of the process.

## Way Forward

### 1. Research and Monitoring:

- Invest in ongoing research to better understand the environmental and ecological impacts of cloud seeding. Regular monitoring and assessment of the outcomes are essential for evaluating the effectiveness and potential risks associated with the technique.

### 2. Transparent Practices:

- Ensure transparency in cloud seeding practices, including clear communication of intentions, methods, and potential risks. Engage with local communities and stakeholders to address concerns and garner support.

### 3. Regulatory Frameworks:

- Develop and implement regulatory frameworks for cloud seeding activities. This includes defining permissible substances, establishing monitoring mechanisms, and addressing ethical considerations to ensure responsible and accountable practices.

## Conclusion

- All in all, extensive research should be carried out in order to fully understand the long term implications that come with cloud seeding. It is not a well-focused on an area of study which makes it rather difficult to grasp every aspect of it.

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### Q2. Consider the following statements with reference to Phreatomagmatic Eruption.

1. Phreatomagmatic eruptions are volcanic explosions that occur exclusively on oceanic islands.
2. These eruptions result from the interaction between magma and water, such as groundwater or seawater.
3. The explosive nature of phreatomagmatic eruptions is primarily due to the release of gases from volcanic rocks.

How many of the above statements are incorrect?

- A) Only one
- B) Only two
- C) All three
- D) None

### Q3. Consider the following statements with reference to Stable Auroral Arc:

1. Stable Auroral Arcs are typically formed in the polar regions due to the interaction of solar wind with the Earth's magnetic field.
2. They are dynamic and constantly changing in shape and intensity.
3. The occurrence of Stable Auroral Arcs is primarily associated with geomagnetic storms.

How many of the above statements are incorrect?

- A) Only one
- B) Only two
- C) All three
- D) None

**Q4. Which of the following statements about the Taurid meteor showers is true?**

1. The Taurid meteor showers are associated with Comet Encke, which is believed to be the source of the Taurid meteoroid stream.
2. Taurid meteor showers occur annually in November and are known for producing a high number of bright and slow-moving meteors.
3. The Taurid meteor showers are primarily visible in the Southern Hemisphere and are less prominent in the Northern Hemisphere.

**Options:**

- A. Statement 1 and 2 are true.
- B. Statement 2 and 3 are true.
- C. Statement 1 and 3 are true.
- D. All three statements are true.

**Q5. Consider the following statements regarding Argoland:**

1. Argoland is located in South America.
2. The official language of Argoland is Portuguese.

Select the correct statement using the codes below:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**Q6. Consider the following statements regarding Cloud Seeding:**

1. Cloud seeding is a weather modification technique aimed at reducing precipitation in certain regions.
2. Silver iodide is a common substance used in cloud seeding.

Select the correct statement using the codes below:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

ANSWERS: 2) B, 3) B, 4) A, 5) B, 6) B

# 10. PLACE IN NEWS

## 10.1 IN INDIA

### SHETTIIHALI WILDLIFE SANCTUARY

**Details**

- The Shettihalli Wildlife Sanctuary is yet to get the necessary protection of an eco-sensitive zone (ESZ).
- Shettihalli Wildlife Sanctuary is situated in the state of Karnataka.
- It was declared a wildlife sanctuary in 1974.
- The Tunga Anicut Dam is situated within the sanctuary and provides shelter for otters and water birds.
- The Mandagadde Bird Sanctuary is also a part of the Shettihalli Wildlife Sanctuary.
- It is a popular bird nesting site situated on an island amid the Tunga River.
- Shettihalli Wildlife Sanctuary is mainly covered by tropical evergreen and semi-evergreen forests.
- The sanctuary is home to species of animals such as white-backed vultures, Indian nightjar, and white-bellied dingo.
- Some other animal species such as tigers, king cobras, slot bears, leopards, elephants, langurs, and pythons reside in dense forest areas.

### LOKTAK LAKE

**Details**

- The Manipur Government has expressed its reservations to the Centre over a hydroelectric modernisation plan in the state's famous Loktak Lake.
- The Loktak Lake is a freshwater lake located at Moirang in Manipur.
- It is the largest freshwater lake in South Asia.
- It is famous for phumdi (heterogeneous mass of vegetation, soil and organic matter at various stages of decomposition) floating over it.
- Located on this humid, KeibulLamjao National Park is the only floating national park in the world. The park is the last natural refuge of the endangered Sangai (state animal) or Manipur brow-antlered deer one of three subspecies of Eld's deer. Sangai is endemic to Manipur and critically endangered. It also has immense cultural relevance to Manipur.
- The lake was initially designated as a wetland of international importance under the Ramsar Convention on 23 March 1990.
- It was also listed under the Montreux Record on 16 June 1993, "a record of Ramsar sites where changes in ecological character have occurred, are occurring or are likely to occur".

### BARDA WILDLIFE SANCTUARY

**Details**

- After Gir National Park and Sanctuary, the Barda Wildlife Sanctuary (BWS) is set to become the second home to Asiatic lions.
- Barda Wildlife Sanctuary is located in Gujarat.
- It is situated approximately 15 kilometres from Porbandar and 100 kilometres west of Gir Forest National Park.
- Previous to its 1979 establishment as a wildlife sanctuary, Barda was a private reserve for Porbandar and Jamnagar.
- There are several forest sub-types, such as southern tropical forest, southern dry mixed deciduous forest and northern tropical thorn forest, while other predominant flora include Euphorbia scrub, dry deciduous scrub, and dry bamboo brakes. Important fauna are blue bull, chinkara, blackbuck, and wolf.

### RIVER BRAHMANI

**Details**

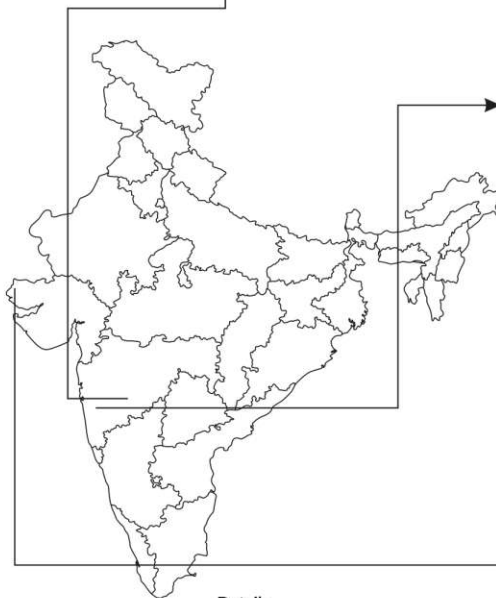
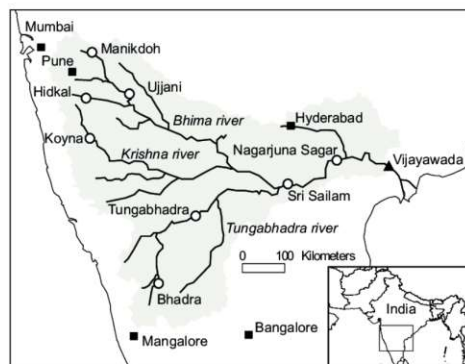
- IIT Guwahati is set to study Brahmani for rejuvenation.
- The Brahmani is a major seasonal river in the Odisha state.
- The Brahmani is formed by the confluence of the Sankh and South Koel rivers, and flows through the districts of Sundargarh, Deogarh, Angul, Dhenkanal, Cuttack, Jajapur and Kendrapara.
- Together with the river Baitarani, Brahmani forms a large delta before emptying into the Bay of Bengal at Dhamra.
- It is the second widest river in Odisha after Mahanadi.

## 10.1 IN INDIA

### BHIMA RIVER

#### Details

- Bhima River has dried up and 100 villages, which were depending on Bhima, are left in lurch.
- Bhima River, is a major tributary of the Krishna River.
- It flows through Maharashtra and Karnataka.
- It rises in the Bhimashankar heights of the Western Ghats.
- It then flows southeastward in Maharashtra to join the Krishna in Karnataka.
- Major tributaries are the Sina and Nira rivers.
- The Bhima drainage area is defined by the Western Ghats (west), the Balaghat Range (north), and the Mahadeo Hills (south).



### PAVANA RIVER

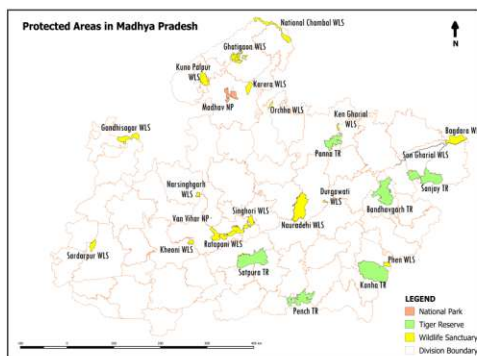
#### Details

- Environmental activists have expressed concern over the thick layer of toxic foam seen on Pavana River.
- The Pavana River is a notable river crossing the city of Pune.
- The river originates south of Lonavala from the Western Ghats.
- It then flows a total of nearly 60 kilometers to meet Mula river in Pune City.

### PANNA TIGER RESERVE

#### Details

- A delegation from Cambodia visited the Panna Tiger Reserve recently.
- Location: Panna Tiger Reserve is a critical tiger habitat located in Vindhya Hill in northern Madhya Pradesh.
- Tiger Reserve: It was declared in 1994 as a Tiger Reserve of India under Project Tiger.
- Area: The forests of Panna National Park along with Ken Gharial Sanctuary and adjoining areas form a part of Ken River's catchment area.
- Vegetation: The National Park is situated at a point where the continuity of the tropical and subtropical dry broadleaf forests belt, (which starts from Cape Comorin in South India) is broken, and beyond this the Upper Gangetic Plains moist deciduous forests of the great Indo-Gangetic Plain begins.
- Forests: This area is the northernmost tip of natural teak forests and easternmost tip of the natural 'Kardhai' Anogeissus pendula forests.
- Animals: Among the animals found here are the Bengal tiger, Indian leopard, chital, chinkara, nilgai, Sambar deer and sloth bear, rusty-spotted cat, Asian palm civet.
- Birds: The park is home to more than 200 species of birds including the bar-headed goose, crested honey buzzard, red-headed vulture, blossom-headed parakeet, changeable hawk-eagle and Indian vulture.



## 10.2 IN INDIA

### KALI TIGER RESERVE

#### Details

- Kali Tiger Reserve officials have arrested five habitual wildlife offenders.
- Kali Tiger Reserve is a protected area and tiger reserve.
- It is located in the Western Ghats range, Uttara Kannada district, of Karnataka.
- The park is a habitat of Bengal tigers, black panthers, and Indian elephants.
- The Kali River flows through the tiger reserve and is the lifeline of the ecosystem hence the name.
- The park is in the ecoregions of North Western Ghats montane rain forests and North Western Ghats moist deciduous forests, both of which are deemed endangered by the World-Wide Fund for Nature (WWF).

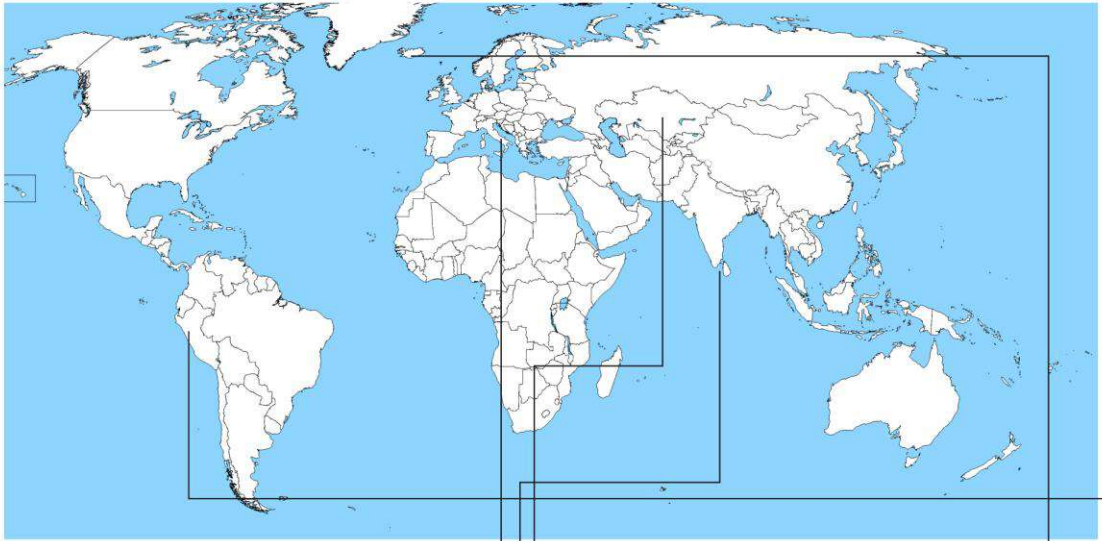


### KOZHIKODE

#### Details

- The seventh edition of the Kerala Literature Festival (KLF) is going to take place.
- It will be the first since UNESCO named Kozhikode a City of Literature, a fortnight ago.
- Kozhikode, also known in English as Calicut, is a city along the Malabar Coast in the state of Kerala.
- It was the Capital of Malabar during the Zamorin rule 500 years ago
- It was dubbed the City of Spices for being the major trading point for Indian spices and cotton with Jews, Arabs, Phoenicians, and Chinese.
- The port at Kozhikode acted as the gateway to the Medieval South Indian coast for the Chinese, the Persians, the Arabs, and Europeans.
- Kozhikode became the first Indian city to be included in the list of Creative Cities Network (UCCN) by UNESCO.
- Kozhikode is India's first City of Literature.

## 10.2 IN WORLD



### MOUNT ETNA

**Details**

- Active volcanoes like Mount Etna in Italy, are a constant threat to tourists.
- It is an active stratovolcano on the east coast of Sicily, Italy.
- Above the convergent plate margin between the African Plate and the Eurasian Plate.
- It is designated as a Decade Volcano by the United Nations.
- In 2013, it was added to the list of UNESCO World Heritage Sites.

### REYKJANES PENINSULA


**Details**

- A state of emergency has been declared in Iceland after a swarm of 800 earthquakes rocked the island country's Reykjanes Peninsula.
- Reykjanes is a peninsula in South West Iceland.
- The Reykjanes Peninsula runs along the Mid-Atlantic Rift, where the Eurasian and the North American tectonic plates are drifting apart.
- Due to this geological setting, the whole peninsula is extremely volcanically active.
- Reykjanes Peninsula originated in a so-called rift jump 6-7 million years ago.
- Reykjanes features a unique volcanic landscape, recognized by UNESCO as the Reykjanes Geopark with 55 defined sites, including the Fagradalsfjall volcano that erupted in 2021 and again in August 2022 and July 2023.

### KATCHATHEEVU ISSUE

**Details**


- The Katchatheevu issue stands at a complicated juncture as it projects an international issue.
- Katchatheevu is a 163-acre uninhabited island administered by Sri Lanka.
- It was a disputed territory claimed by India until 1976.
- The island is located between Neduntheevu, Sri Lanka and Rameshwaram.
- It has been traditionally used by both Sri Lankan Tamil and Indian fishermen.



### LAKE TITICACA

**Details**


- In South America's Andes, a shrinking Lake Titicaca is ringing the climate alarm bell.
- Lake Titicaca is a large freshwater lake in the Andes mountains on the border of Bolivia and Peru.
- It is often called the highest navigable lake in the world.
- By both volume of water and by surface area, it is the largest lake in South America.
- The lake consists of two nearly separate subbasins connected by the Strait of Tiquina.



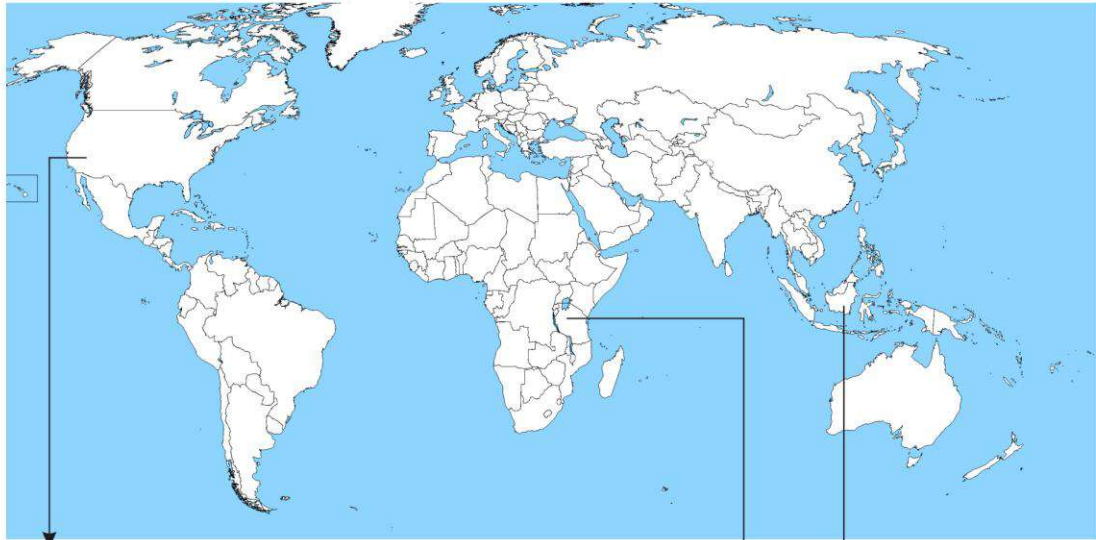
### DNIEPER RIVER

**Details**

- Russia was moving troops to the east of the Dnipro River in Ukraine.
- The Dnieper, also called Dnipro is one of the major transboundary rivers of Europe.
- It rises in the Valdai Hills near Smolensk, Russia, before flowing through Belarus and Ukraine to the Black Sea.
- It is the longest river of Ukraine and Belarus and the fourth-longest river in Europe, after the Volga, Danube, and Ural rivers.



10.2 IN WORLD



**MOUNT ST HELENS**

**Details**

- Around 400 earthquakes have been recorded under Mount St Helens since mid-July this year.
- Mount St. Helens is an active stratovolcano located in the Cascade Range, southwestern Washington, U.S.
- Mount St. Helens is in the west of Mount Adams, in the western part of the Cascade Range. Considered "brother and sister" mountains, the two volcanoes are approximately 80 km from Mount Rainier, the highest of the Cascade volcanoes.
- Mount St. Helens is geologically young compared with the other major Cascade volcanoes.
- Streams that originate on the volcano enter three main river systems: The Toutle River, the Kalama River, and the Lewis River.
- Cascade Volcanoes
- The Cascade Volcanoes are a number of volcanoes in a volcanic arc in western North America. The arc formed due to subduction along the Cascadia subduction zone. Some of the major cities along the length of the arc include Portland, Seattle, and Vancouver.



**TANZANIA**

**Details**

- Tanzania's Zanzibar campus of the Indian Institute of Technology Madras was formally launched.
- It is a country in Africa located just south of the Equator.
- Uganda, Lake Victoria, and Kenya border the mainland to the north.
- To the east is the Indian Ocean, and to the south and southwest are Mozambique, Lake Nyasa, Malawi, and Zambia.
- To the west are Lake Tanganyika, Burundi, and Rwanda.
- Mount Kilimanjaro, located in northern Tanzania, is the highest point.
- Tanzanians are mostly of Bantu heritage.



**KAWAH IJEN CRATER LAKE**

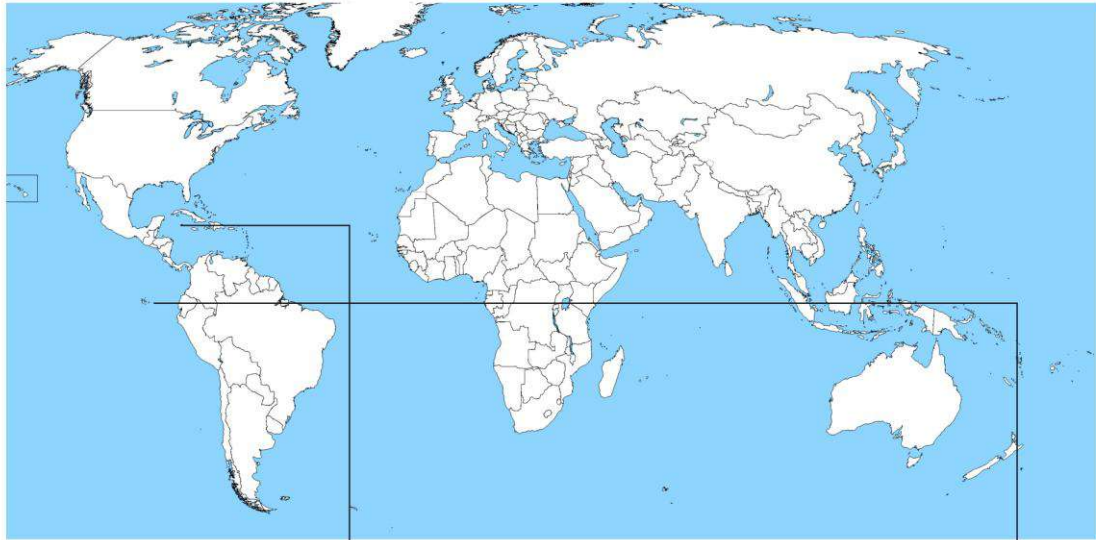
**Details**

- The Copernicus Sentinel-2 mission, which provides optical images of Earth's surface, captured the images of Kawahljen Crater Lake.
- Kawahljen is a composite volcano located at the easternmost part of Java island in Indonesia.
- It hosts the largest natural acidic lake in the world.
- The lake is filled with a high concentration of sulphuric and hydrochloric acids, as well as dissolved minerals.
- The water in the Kawahljen Crater Lake has pH values as low as 0.5, similar to the strength of car battery acid.
- It also emits hot, flammable sulfurous gases that ignite upon contact with Earth's oxygen-rich atmosphere. These gases burn with an eerie, blue flame. Thus, the lake is known for its striking turquoise-blue waters.
- It is a source for the river Banyupahit.
- An active vent at the edge of the lake is a source of elemental sulfur and supports a mining operation.





10.2 IN WOLRD



**CAYMAN ISLANDS**

Details

- The Cayman Islands has been removed from the Financial Action Task Force (FATF) grey list.
- The Cayman Islands is a self-governing British Overseas Territory.
- The islands are in the western Caribbean Sea.
- It comprises the three islands of Grand Cayman, Cayman Brac and Little Cayman, which are located south of Cuba and northeast of Honduras, between Jamaica and Mexico's Yucatán Peninsula. The capital city is George Town on Grand Cayman.
- The terrain is mostly a low-lying limestone base surrounded by coral reefs.
- The Cayman Islands has a tropical wet and dry climate.



**GALAPAGOS ISLANDS**

Details

- Scientists have discovered two new Coral Reefs, in Galapagos Islands.
- It is an archipelago of volcanic islands located in the eastern Pacific Ocean, off the west coast of South America.
- They are distributed on each side of the equator in the Pacific Ocean, surrounding the centre of the Western Hemisphere.
- It belongs to the Republic of Ecuador.
- The islands are known for their large number of endemic species that were studied by Charles Darwin during the second voyage of HMS Beagle.
- The islands are located at the Galapagos Triple Junction.
- The Galapagos Triple Junction is a geological area in the eastern Pacific Ocean where three tectonic plates - the Cocos Plate, the Nazca Plate and the Pacific Plate - meet.
- The archipelago is precisely located on the Nazca Plate (a tectonic plate).
- Mount Azul, at 5,541 feet is the highest point of the Galapagos Islands.
- In 1978 the islands were designated a UNESCO World Heritage site.
- Galápagos marine iguana, is a species of iguana found only on the Galápagos Islands.



### 10.3 MCQs

**Q1. Consider the following statements:**

1. The Brahmani is formed by the confluence of the Sankh and South Koel rivers.
2. It is widest river in Odisha after Mahanadi.

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

- A) Only 1
- B) Only 2
- C) Both
- D) None

**Q2. Consider the following statements concerning Kozhikode:**

1. Kozhikode is India's first City of Literature.
2. It was the Capital of Malabar during the Zamorin rule.
3. Kozhikode became the first Indian city to be included in the list of Creative Cities Network (UCCN) by UNESCO.

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

- A) Only 1
- B) Only 2
- C) All 3
- D) None

**Q3. Which one of the following pairs is correctly matched?**

- |                             |             |
|-----------------------------|-------------|
| A. Reykjanes                | Norway      |
| B. Mount Etna               | Switzerland |
| C. Barda Wildlife Sanctuary | Rajasthan   |
| D. Mount St. Helens         | US          |

**Choose the correct code.**

1. A

2. B
3. C
4. D

**Q4. Consider the following statements concerning Dnipro River:**

1. Dnipro is a transboundary river of Europe.
2. It rises in the Valdai Hills near Smolensk, Russia.
3. It is the longest river of Russia.

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

- A) Only 1
- B) Only 2
- C) All 3
- D) None

**Q5. Consider the following statements concerning Lake Titicaca**

1. Lake Titicaca is a large freshwater lake in the Andes mountains on the border of Bolivia and Peru.
2. It is often called the highest navigable lake in the world.
3. By both volume of water and by surface area, it is the largest lake in North America.

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

- A) Only 1
- B) Only 2
- C) All 3
- D) None

**ANSWERS: 1) A, 2) C, 3) 4, 4) B, 5) A**