



# CSB IAS ACADEMY

*The road map to Mussoorie..`*

## Current

**APRIL (1-15) 2024**

## Affairs



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# CULTURE AND HERITAGE

## 1. Record 60 traditional Indian products receive GI tag

### Context:

Recently, over 60 products from across India have been awarded the Geographical Indication (GI) tag. This marks the first instance of such a large number of products being granted the GI tag at once.



Source- GI tag

### Key products awarded the GI tag

States	Products
Assam	1. Asharikandi terracotta craft
	2. Pani Meteka craft
	3. Sarthebari metal craft
	4. Jaapi (bamboo headgear)
	5. Mishing handloom products
	6. Bihu dhol
	7. Bodo Dokhona (the traditional attire of Bodo women)
	8. Bodo Eri silk (fabric of peace or ahimsa (non-violence))
	9. Bodo Sifung (a long flute)
Uttar Pradesh	Banaras Thandai
Tripura	1. Pachra-Rignai, (a traditional dress worn on special occasions)

## 2. Matabari Peda (a sweet)

### Meghalaya

1. Meghalaya Lyrnai Pottery
2. Meghalaya Chubitchi

### What is a GI tag:

- **About-** Geographical indication (GI) is a name or sign which is used to identify products originating from a specific geographical location and that location gives it a distinct quality, characteristic.
- **Regulation-** The GI tags are governed by the Geographical Indications of Goods (Registration and Protection) Act, 1999. They are issued by the Geographical Indication Registry, which operates under the Department of Industry Promotion and Internal Trade, Ministry of Commerce and Industry.
- **Significance-** A geographical indication right enables those who have the right to use the indication to prevent its use by a third party whose product does not conform to the applicable standards.

### UPSC Prelims point: Traditional Indian products and GI

## 2. Fort Emmanuel

### Context:

Historians are exploring measures to preserve the laterite-brick remains of Fort Emmanuel, which the Portuguese constructed along the beachfront in 1503.

### About Fort Emmanuel:

- Fort Emmanuel was built in 1503 by the Portuguese. It is one of the earliest European forts built in India.
- It is a ruined fort located at Fort Kochi Beach in Kochi, Kerala.





Source: Kerala Tourism

- Fort Emmanuel was a large structure that enclosed an entire township, strengthening Portuguese control in the area.
- It remained under Portuguese rule until 1683 when it was captured by Dutch colonial forces, who destroyed Portuguese institutions.
- The Dutch held the fort until 1795, when the British took over and by 1806, had demolished most of its walls and bastions.
- It was a symbol of the strategic alliance between the Maharajah of Kochi and the Monarch of Portugal, after whom it was named.
- Foreign control of Fort Kochi ceased in 1947 when India gained independence.

### Portuguese strategy of building forts in coastal colonies

- The Portuguese strategy of building forts in coastal colonies such as Fort Kochi, Goa, Kollam, Kozhikode, and Kodungalloor which were crucial for their defense.
- These forts not only secured their colonies but also supported their naval capabilities.
- This fortification was essential for protecting the lucrative trade in spices such as pepper, which the Portuguese exported from Kerala back to Europe.

### UPSC Prelims point: Fort Emmanuel and Forts in India

# INDIAN POLITY, POLICY AND INTERNAL SECURITY

## 1. Impact of Artificial Intelligence on Indian elections .

### Context:

The BJP has used Artificial Intelligence (AI) to translate the speech of Prime Minister into eight different languages ahead of the Lok Sabha elections. This general election may potentially be considered as India's first AI election. Impact of Artificial Intelligence on Indian elections

### India's electoral strategy evolved over last 3 decades:

- . The electoral strategy has evolved due to the deployment of new technologies for electoral purposes.
- . **Phone Calls**-There was extensive usage of phone calls in the 1990s. Similarly, the Uttar Pradesh Assembly election in 2007 witnessed the first mass mobile phone elections.
- . **Social media platforms**- This was widely used in the 2014 general elections. Some analysts have even referred to it as India's first social media elections or the Facebook elections. An estimated ₹ 500 crore had been spent in digital spending in 2014 elections.
- . **WhatsApp election -2019** general election was widely dubbed as the "first WhatsApp election" in India. Few Indian States elections have shown that how WhatsApp can be abused to mislead voters for political purposes very quickly. As per election campaign consultant, it is an effective political platform because it is an excellent tool to organize and mobilize party workers.

### The use of AI hamper the sanctity of the electoral process in 2024 elections:

- . **The global elections of 2024 are indeed AI driven elections.** They can significantly hamper the sanctity of electoral process by;
  - . **Misinformation** - Voters in New Hampshire got a phone call that sounded like U.S. President. However, it was a robocall made by AI that discouraged Democratic voters from going to polling stations on election day.
  - . **Creation of fake audios** - Just before parliamentary elections in Slovakia, in September 2023 last year, a fake audio of a conversation between a journalist and the leader of the pro-North Atlantic Treaty Organization Progressive Slovakia Party was shared on Facebook. Consequently, in a close race, Progressive Slovakia lost out.
  - . **Deepfakes**-They were used in the recent Assembly elections in Madhya Pradesh and Telangana, either through doctored clips of the game show "Kaun Banega Crorepati" or a fake video of a leader who was pushing voters to support their opponent.
  - . **Setting false trends**-AI-powered bots can generate fake accounts that amplify messages and generate artificial trends to give the false impression that a particular politician or subject is widely supported.
- . **AI play a constructive role in the election process:**
  - . It can play a far wider role in elections than just disseminating disinformation such as-

- It can be used in the entire spectrum of campaign strategies. It can be used for voter identification and for content development and delivery.
- It can do real-time analytics on campaign performances. It can ensure that political campaigns are data-driven and help in setting effective micro-targeting strategy.
- The political landscape** is changing quickly due to GenAI technology. This presents both the potential and challenges for the 2024 elections.

**Mains point: India's electoral strategy evolved over last 3 decades.**

## 2. New Security SOPs for Airports & Airlines

### Context:

To enhance traveller convenience, the Bureau of Civil Aviation Security (BCAS) has released new standard operating protocols (SOPs) for airports and airlines.

### The new protocols say:

- For the first time, passengers can now undergo a security check at the boarding gate if a flight is delayed due to weather, technical issues, or an onboard passenger's death.
- Previously, passengers who deplaned had to go back to the arrivals section for security checks, causing delays and discouraging airlines from disembarking passengers.

### Implementation of SOP:

- Once the airports have established the necessary infrastructure and BCAS has conducted a review, the SOPs will be implemented.
- Airports must designate space at certain boarding gates for "return boarding." Here, CISF personnel and x-ray machines will check passengers and scan cabin bags.

## Bureau of Civil Aviation Security (BCAS):

### About

- BCAS functions as the authoritative body for civil aviation security in India.
- Its key responsibilities include setting standards and measures for the security of civil flights at both international and domestic airports across India.

### Establishment

- Initially established as a Cell within the Directorate General of Civil Aviation in January 1978, following the recommendations of the Pande Committee in response to the hijacking of an Indian Airlines flight on September 10th, 1976.
- BCAS was later restructured as an independent department under the Ministry of Civil Aviation on April 1st, 1987.

### Governance

BCAS is overseen by an officer holding the rank of Director General of Police, designated as Commissioner of Security

### Headquarter

New Delhi

### Regional Offices

Four regional office situated at international airports in Delhi, Mumbai, Kolkata, and Chennai.

## Prelims point: Bureau of Civil Aviation Security (BCAS)

## 3. Supreme Court bans uncontrolled soil removal for linear projects .

### Context:

The Supreme Court has cancelled a notification from the Environment Ministry issued three years ago. This notification exempted the extraction of ordinary earth for linear projects like road and railway construction from needing Environmental Clearance (EC).



The notification that exempted earth extraction for Linear Projects:

**First notification-** In 2006, the Environment Ministry released a notification under the Environment (Protection) Act 1986 (EPA), specifying activities necessitating prior Environmental Clearance (EC).

**Second notification-** Later in 2016, a second notification was issued, granting exemptions to certain project categories from this requirement.

**Third notification-** In 2020, a third notification was issued, adding "Extraction or sourcing or borrowing of ordinary earth for linear projects such as roads, pipelines, etc." to the list of exempted activities.

### Basis for Challenging the 2020 Exemption/ Notification

**Violation of Article 14-** The exemption faced a challenge in front of the National Green Tribunal (NGT), arguing that permitting unrestricted earth extraction was arbitrary and infringed upon Article 14 of the Constitution of India, as only linear projects were exempted.

**Violation of SC guidelines on environmental clearance-** The petitioner contended that the exemption contradicted the necessity for prior Environmental Clearance outlined by the Supreme Court in the case of Deepak Kumar versus the State of Haryana (2012).

**Government Response-** The Center delayed action on the NGT order until the appellant approached the Supreme Court.

### The Supreme Court held:

**Violation of Article 14-** The court ruled that the blanket exemption without clear guidance was arbitrary and violated Article 14 because the 2020 notification lacked definitions for 'linear projects' and specifics on extraction quantity and area.

**No extraction limit set-** Additionally, it did not clarify environmental authority's responsibilities or set extraction limits for soil removal.

**Question government's haste in notification issuance-** The court questioned the government's haste in issuing the notification, especially during a nationwide lockdown when linear project construction was halted

**Prelims point: Environment (Protection) Act 1986 (EPA)**

### 4. Issues faced by the Indian judicial system

#### Context:

The article discusses the problem of over 10 million pending cases in India's courts. It focuses on the need for reform in the judicial system, like limiting adjournments, using technology, and improving court management to make the process faster and more efficient.

#### The issues faced by the Indian judiciary system:

**Overwhelming Case Backlog:** Over 10 million cases are pending in Indian courts, leading to significant delays.

**Frequent Adjournments:** More than half of the cases exceed the three-adjournment limit, contributing to delays.

**Staff Shortage:** Courts operate with insufficient staff regardless of the number of cases, affecting efficiency.

**Ineffective Court Management:** Lack of clear timelines and effective management strategies slow down case processing.

**Technology Underutilization:** Despite potential benefits, technological solutions like e-filing and video conferencing are not fully integrated.

#### The impacts of these issues:

**Prolonged Detention:** With 77.1% of over 500,000 inmates in 2021 awaiting

trial, prolonged pre-trial detention is a major issue.

- . **Business Challenges:** The slow judicial process hinders 'ease of doing business,' affecting economic growth and investor confidence.
- . **Public Trust Erosion:** The unreliability and inefficiency of the judiciary decrease public trust in the legal system.

#### Way forward:

- . **Strict Enforcement of Three-Adjournment Rule:** Limit adjournments per case to three to avoid unnecessary delays, as currently, more than half of the cases exceed this limit.
- . **Improve Court Management:** Adopt clear timelines for each case, a practice effective in developed countries but lacking in India.
- . **Enhance Staffing in Courts:** Address the staff shortage, as courts often have the same number of staff regardless of the increase in case files.
- . **Integrate Technology Effectively:** Fully utilize e-filing and video conferencing, proven useful during the COVID-19 pandemic, to expedite cases.
- . **Implement NCMS Policy and NFCE:** Fully enforce the National Courts Management Systems policy and the National Framework of Court Excellence to establish performance benchmarks and improve court operations.
- . **Monetary Disincentive for Adjournments:** Introduce fines, such as Rs. 10,000 for the first adjournment, doubling for subsequent ones, to discourage unnecessary delays.
- . **Social Audit of Judiciary Policies:** Conduct social audits of policies like NCMS to ensure their effectiveness and enhance judicial efficiency.

**Mains point:** The potential impacts of the overwhelming case backlog and frequent adjournments on India's judicial system.

## 5. Role of political parties in addressing climate issues.

### Context:

WHO has recently released The State of the Global Climate report which states that 2023 was the hottest year in the recorded history of the planet. As per the report, records for a rise in ocean temperatures, glacier retreat and diminishing Antarctic ice cover were also broken.

### The negative impact of rising global temperature:

- . There has been a rise in the frequency of extreme weather events such as heat waves, torrential rains and tropical cyclones.
- . It disrupts many activities including agriculture and significantly impacts socio-economic developments around the world.

### The principal driver of industrial progress since the mid 18 century:

- . The principal drivers of this progress have been mechanization and technology-led innovations in all sectors. There has been over exploitation of natural resources to drive progress in the post-Industrial Revolution period.
- . However, over dependence on natural resources for energy requirements has negatively impacted the climate. For example, use of fossil fuel has led to large emissions of greenhouse gases that leads to the rise in global temperatures.

### The steps taken by the world and India particularly:

**Paris Climate Deal-** It is a legally binding global agreement under the United Nations Framework Convention on Climate Change (UNFCCC) that was adopted in 2015. It aims to combat climate change and limit global warming to well below 2° C above pre-industrial levels, with an ambition to limit warming to 1.5° C.



**Indian government initiative-**

- a) It has launched the National Action Plan on Climate Change (NAPCC). The National Solar Mission was one of the missions under the NAPCC.
- It has also announced the National Green Hydrogen Mission. This demonstrates India's strong commitment to the energy transition plan.

**The election season presents an opportunity to ensure climate justice:**

- The concerns expressed in WMO report should alarm all political parties to take climate change as an important election issue. It is possible that people may wholeheartedly welcome such stands taken by political parties.
- Political parties can commit themselves to enhancing public awareness on climate change and spelling out mitigatory steps to reduce global warming.
- It is possible to have political differences in approaching climate change issues, but this will provide voters an opportunity to assess these views and make an informed decision.
- In order to be counted as a true world power in the **Amrit Kaal**, Indian political parties can demonstrate strong commitment to the principle of climate justice and make this an important political issue.
- All political parties are presenting their ideas to shape India's economic prosperity and the well-being of its people.** However, without addressing the issue of a climate change action plan, this idea of prosperity would be incomplete.

**Mains point: The political party's trigger collective action to raise awareness about climate justice.**

**6. ED can summon 'any person' for 'any information'- SC in Sand mining case****Context:**

The Supreme Court, in a recent hearing on a sand mining case, endorsed the Enforcement Directorate's (ED) authority to summon "anyone for any information."

**Enforcement Directorate (ED):**

Source- The Hindu

Aspect	Details
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**About**

It is a specialized financial investigation agency under the Department of Revenue, Ministry of Finance.

**Headquarters**

New Delhi

**Origin**

1. On 1 May 1956, an 'Enforcement Unit' was formed, in the Department of Economic Affairs, for handling Exchange Control Laws violations under Foreign Exchange Regulation Act, 1947.
2. In the year 1957, this Unit was renamed as 'Enforcement Directorate'.

**Mandate**

It has been given the task of enforcing the provisions of two special fiscal laws-  
a. Foreign Exchange Management Act,

1999 (FEMA).b. The Prevention of Money Laundering Act, 2002 (PMLA).

### The key powers and functions of Enforcement Directorate:

- . **Probing financial crimes-** The ED has the authority to probe and enforce regulations concerning money laundering, breaches of foreign exchange regulations, and similar economic infractions.
- . **Freezing and Seizing Assets-** The ED is authorized to freeze and confiscate assets believed to be connected to money laundering or illicit operations.
- . **Properties Attachment-** The Directorate has the authority to seize properties implicated in or derived from money laundering activities, thus halting their disposal during the investigation. This attachment directive lasts for 180 days and may be prolonged by the Adjudicating Authority.
- . **Issuing Summons- Section 50(2) of the PMLA allows** the ED to summon any individual deemed necessary to provide evidence or produce records during an investigation or proceeding under the statute. Section 50(3) mandates that the summoned person must attend in person or through authorized agents, providing truthful statements and required documents.
- . **Arrests-** The agency can arrest individuals engaged in money laundering or foreign exchange violations, as per the law's provisions. Arrests may be made with or without a warrant, depending on the case's circumstances.

### Prelims point: The key powers and functions of Enforcement Directorate.

## 7. EVM-Demand for 100% recount of all VVPATs

### Context:

Many opposition political parties have demanded 100% recount of all VVPATs,

instead of the current method of sampling the number of recounts, to have full transparency. The Supreme Court of India has now listed a series of petitions related to this demand.

### Voter Verifiable Paper Audit Trail:

- . **Introduction-**It was first introduced in India in the 2014 Lok Sabha elections.
- . **Description-**It is an independent system that has two parts, namely, a VVPAT Printer and VVPAT Status Display Unit (VSDU) attached to the Electronic Voting Machines (EVMs). This allows the voters to verify that their votes are cast as intended.

### The existing way to use VVPAT for ensuring transparency:

- . There is provision of counting VVPAT tallies from five random polling booths in every Assembly constituency that will have to be matched with the EVM vote-count to ensure that there is no tampering or hacking of Electronic Voting machines.

### The concerns expressed by political parties about the functioning of EVMs:

- . EVMs, like every machine, have suffered certain glitches. However, they have been quickly replaced in the event of machine failures.
- . There is no substantial evidence to suggest the fact that they are prone to hacking or manipulation.
- . For ex-sample counting of VVPATs, across both the general election in 2019 and several other Assembly elections, has shown that the mismatch between the VVPAT recount and the EVM count has been very less. That mismatch too was an outcome of trivial errors like non-deletion of mock polls in the machine before the voting process or errors in manual recording of the final count from the machine.

### The way forward:

- . There should be machine audit trail of all the commands or functions that are

executed by EVMS along with VVPATs. This could make the system more robust and be considered as an upgrade to the existing machines

There can be an increase in recount sample size of VVPATs in the selected number of Assemblies specific to each State/Union Territory based on the size of the province.

There can be an increase in the recount sample size in seats where the margin of victory between candidates is narrow.

Thus, it would be counterproductive to demand 100% recount of all VVPATs. Further, this will also reinforce the fears EVM are prone to hacking.

**Mains point: The existing way to use VVPAT for ensuring transparency.**

## 8. Bharatiya Nyaya Sanhita.

### Context:

The central government has notified July 1 to be the day on which the recently enacted three criminal laws will come into effect. However, Section 106(2) of the Bharatiya Nyaya Sanhita (BNS), 2023 has been put on hold due to opposition by All India Motor Transport Congress.

### Some sections of Bharatiya Nyaya Sanhita that require revision:

Apart from Section 106(2), there is a need to reconsider a few more provisions of the BNS. These are-

**Section 112-** This defines petty organized crime.

**Section 303(2)-** This defines theft.

**Section 143-** This is related to human trafficking.

### The reconsideration of certain provisions required:

#### 1) Section 106-

A) The increase in sentence from 5 to 10 years of imprisonment for just fleeing the scene without reporting to the police or a magistrate soon

after the accident is bit disproportionate

B) This clause violates the fundamental right of prohibition against self-incrimination which is enshrined under Article 20(3) of the constitution.

Further, in **Nandini Satpathy vs P.L. Dani, the Supreme Court** has widened the scope of Article 20(3) and held that the accused must not be compelled to give testimony because it amounts to procurement of evidence by psychic torture, overbearing and intimidatory methods. Thus, disclosure of culpability by informing the police or a magistrate under Section 106 due to fear of enhanced punishment may not qualify the test of constitutionality

#### 2) Section 112:

Offences like unauthorized selling of tickets and selling of public examination question papers are not properly defined. These offences are not linked with any special Act.

Further, the range of 'any other similar criminal acts' is unspecified in this section, and this makes it more indefinite and open-ended. The Supreme Court in **Shreya Singhal vs Union of India (2015) struck down 66A of the Information Technology Act, 2000** because it found the expression "grossly offensive" used in the Section to be open-ended, undefined and vague.

#### 3) Section 303:

Provision-In cases of theft where the value of the stolen property is less than 5000, and a person is convicted for the first time and if the person returns of the value of property or restoration of the stolen property then he will be punished with community service. The First Schedule to the Bharatiya Nagarik Suraksha Sanhita (BNSS) categorizes the



offence under this category as a non-cognizable offence.

**Issue:**

A) While the value of ₹ 5,000 may not impact the pocket of a rich person, but it is a huge sum for a daily wage earner. Since it is a non-cognizable offence, police may refuse to file a first information report.

B) Property offenders could not be put under police surveillance if property offences are not registered.

**Section 143- Sub-sections (6) and (7) of Section 143** of the BNS which punish trafficking of a child and trafficking of a person by a public servant, or a police officer respectively do not provide any discretion to the judiciary to award punishment.

The Supreme Court in *Mithu vs State of Punjab* (1983) held that any law which does not give discretion to the judiciary is not just, fair, and reasonable within the meaning of Article 21 of the Constitution and hence unconstitutional.

**Mains point: The reconsideration of certain provisions under Bharatiya Nyaya Sanhita (BNS), 2023 required.**

## 9. New rules for childbirth registration.

### Context:

The Ministry of Home Affairs has drafted model rules for childbirth registration. These rules must be adopted and notified by state governments before implementation.

### The proposed in the new rules for childbirth registration:

**Specify the religion of both parents separately:**

When registering a child's birth, parents will now need to specify the religion of both the father and mother separately.

Previously, birth registers only noted the family's religion.

The new "**Form No.1-Birth Report**" will include separate sections for the child's religion, as well as the religion of both the father and mother.

This update also applies to parents of adopted children.

According to the Registration of Births and Deaths (Amendment) Act of 2023, information on birth and death registrations will be maintained in the national database.

### The Registration of Births and Deaths (Amendment) Act, 2023:

This act amended the Registration of Birth and Death (RBD) Act, 1969. According to Registration of Birth and Death (RBD) Act, 1969 a birth or death must be registered within 21 days. If not registered within this period, it can be registered under the RBD Act with an order from a First-Class Magistrate, verifying the details of the event.

### Key features of Registration of Births and Deaths (Amendment) Act of 2023

**National database-** According to 2023 act, the birth and death database will be maintained at the national level.

**Connecting database-** It may be used to update various databases including the National Population Register (NPR), electoral rolls, Aadhaar number, ration card, passport, driving license, property registration, and any other databases as notified.

### Digital records:

a. All births and deaths in the country must be digitally registered through the Centre's Civil Registration System portal (crsorgi.gov.in).

b. **Digital birth certificates** issued through this system will serve as a single document to verify the date of birth for various services,

including admission to educational institutions.

**Mandatory data sharing obligation for states**– States will be required to register births and deaths on the Centre’s Civil Registration System (CRS) portal and to share the data with the Registrar General and Census Commissioner of India (RGI), operating under the Union Home Ministry.

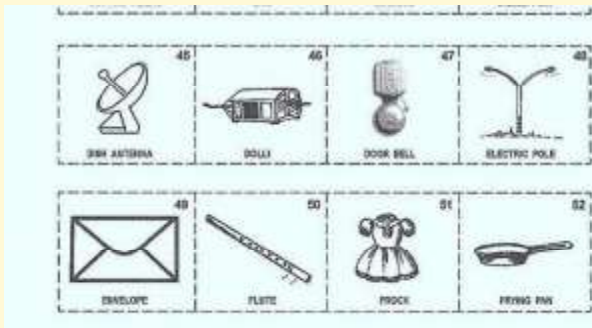
**Prelims point: Key features of Registration of Births and Deaths (Amendment) Act of 2023**

## 10. Allocation of symbols to political parties.

### Context:

This article discusses the allocation of symbols to political parties.

### The rules specify:



Source- The Hindu

**Responsible authority**- The allocation of symbols in elections falls under the jurisdiction of the Election Commission of India (ECI).

**Law governed symbol allotment**- This process is governed by The Election Symbols (Reservation and Allotment) Order, 1968, which aims to define, reserve, and assign symbols for recognized political parties.

**Symbols Classification**- Symbols are classified as either reserved (reserved solely for recognized parties) or ‘free’ (accessible to unacknowledged registered parties).

**Gazette publication**- The Election Commission publishes lists of parties

along with their symbols in the Gazette of India.

**Recognised Political party symbol allotment**- Exclusive symbols are allocated to recognized national and state parties.

**Unrecognized registered parties symbol allotment**- Candidates from unrecognized registered parties can select from free and non-exclusive symbols.

**Note- Rule 10B of the Symbols Order states** that a ‘registered unrecognized party’ can use a common free symbol for two general elections.

### The political parties allowed to express their preferences:

The 1968 order gives the Election Commission power to handle symbol selection and allocation for parliamentary and assembly elections, aiming to recognize political parties.

Unregistered parties need to provide ten preferred symbols from the commission’s list. They can also propose three new symbols with designs and names for consideration by the Commission.

These new symbols must meet certain criteria, avoiding similarity to existing symbols and steering clear of religious or communal connections or animal depictions.

If a recognized political party splits, the Election Commission decides on symbol allocation.

**Prelims point: the allocation of symbols to political parties.**

## 11. Systemic challenges in parliamentary oversight: Parliaments past, a mirror to changing dynamics.

### Context:

This article discusses how the Indian Parliament, particularly the 17th Lok Sabha, has functioned recently. It highlights shifts in focus, like more questions about health and agriculture

and fewer about national security. It also notes changing trends in parliamentary debates and oversight.

### The systemic challenges in parliamentary oversight:

- **Decline in Questions to the Prime Minister:** The Prime Minister's Office received only 28 answers out of 1,146 questions from Rajya Sabha MPs, indicating limited engagement at the highest executive level.
- **Reduced Focus on Key Ministries:** Interest in national security issues has decreased, with the Ministry of Home Affairs witnessing a 32% drop in queries.
- **Changing Ministerial Priorities:** The Ministries of Health and Agriculture are now receiving more questions, shifting focus from earlier priorities.
- **Increasing Disallowed Questions in Rajya Sabha:** The percentage of disallowed questions in the Rajya Sabha is rising, with 36.6% relating to key ministries like Health, Home Affairs, and Finance, suggesting hindrances in oversight.
- **Missed Opportunities for Discussion:** Crucial issues, like student suicides due to exams, were not adequately addressed, indicating missed chances for accountability and debate.

### The changes have occurred in parliamentary discussions:

- **Increased Use of Zero Hour Over Time:** Over the past 15 years, the use of Zero Hour in parliamentary discussions has seen a significant increase: a 62% rise in the Rajya Sabha and a 34% increase in the Lok Sabha. This trend suggests a growing focus on addressing immediate and pressing issues.
- **Decline in Traditional Interventions:** The use of 'Half-an-Hour Discussions', 'Short Notice Questions', 'Calling Attention', 'Short Duration Discussions', and 'Special Mentions' has decreased,

suggesting a shift away from these traditional methods.

### Way forward

- To revitalise legislative engagement, Indian Parliament should seize every opportunity for accountability and constructive debate, focusing on enacting policies that prioritize national welfare, as seen in the proactive dynamics of the 16th Lok Sabha.

### Mains point: The recent trends and challenges in parliamentary oversight and engagement in the Indian Parliament.

### 12. Issues with current liquor policies in India: Huge tax and licence raj in liquor.

#### Context:

The article emphasizes the need for reform in India's liquor policy, highlighting the problems caused by high taxes and strict licensing. It points out that these policies lead to increased consumption of low-quality liquor, limited market competition, and potential corruption.

- **The issues with India's current liquor policies:**
  - **Excessive Taxation:** India's liquor taxes are extremely high, often above 200% domestically and 150% for customs duties, burdening consumers financially.
  - **Impact on Health:** High taxes lead consumers to lower-quality, cheaper alcohol, increasing health risks, especially at the lower income levels.
  - **State Revenue Dependence:** States heavily rely on liquor taxes for revenue, but Bihar's prohibition shows alternatives exist for state financing.
  - **Complex Tax System:** Liquor is not included under the Goods and Services Tax (GST), complicating the tax structure. Including it could simplify taxation and align it with other products like cigarettes.



- **Government Monopoly in Sales:** Current policies often lead to government monopolies in liquor sales, which can increase corruption and create barriers for private businesses.

#### Way forward:

- **Include Liquor in GST:** Simplify the tax system by including liquor under GST, as done with cigarettes, to unify and streamline the tax process.
- **Encourage Private Distribution:** Shift from government monopolies to private distribution of liquor, regulated for safety and age restrictions. This can decrease corruption and open opportunities for ordinary businesses.
- **Reform Licensing Policies:** Simplify licensing for liquor sales and consumption in public spaces to reduce bureaucratic hurdles and promote a healthier business and social environment.

**Mains point:** The key issues with India's current liquor policies and propose potential reforms to address these challenges.

### 13. Consequences of applying laws and judgments with retrospective effects: Law in its own time.

#### Context:

The article discusses how the Indian legislature and judiciary made laws and judgments with retrospective effects in 2012 and 2024. This approach, aimed at protecting sovereignty and democracy, led to unintended economic consequences and questioned the accountability of the judiciary.

#### The happened in 2012 and 2024 regarding retrospective laws and judgement:

- In 2012, a retrospective tax law was passed to tackle tax avoidance by big corporations. In 2024, the judiciary declared electoral bonds illegal, also retrospectively, to prevent corporate influence in politics.

#### The consequences of applying laws and judgments with retrospective effects:

- **Economic Instability:** The retrospective tax law of 2012 led to reduced private sector investment and job losses. This indicates how such laws can create economic uncertainty and discourage investment.
- **Legal Uncertainty:** Applying laws retrospectively creates a sense of unpredictability about the legal environment. Individuals and businesses become unsure if their past actions might suddenly be deemed illegal.
- **Loss of Confidence:** The retrospective application in both 2012 and 2024 cases likely eroded public confidence in the legal system. It implies that laws can change unpredictably, affecting past actions.
- **Questioning Judiciary's Role:** It raises questions about the judiciary's accountability and its impact on economic and legal stability.
- **Violating Individual Rights:** it can lead to the violation of individual rights, as actions that were legal at the time they were taken are judged illegal in hindsight. This was a concern with the invalidation of electoral bonds in 2024.

#### Way forward:

- **Ensure Judicial Prudence:** The judiciary's decision on electoral bonds in 2024 overlooked practical consequences, like returning to less transparent political funding methods. The courts should balance legal principles with practical outcomes.
- **Enhance Transparency in Political Funding:** The electoral bond scheme, though flawed, was a step towards transparency compared to the previous anonymous system. A revised version could improve political funding transparency.
- **Strengthen Checks and Balances:** Like the government, which is accountable

to voters and oversight bodies, the judiciary also needs mechanisms for accountability, perhaps through public opinion surveys or other independent reviews.

**Learn from Past Experiences:** The UPA-2 government's downfall due to perceived corruption highlights the need for transparent governance and the power of public opinion in a democracy.

**Mains point: The implications of applying laws and judgments retrospectively.**

#### 14. Why Supreme Court ruling on climate change isn't enough.

##### Context:

The Supreme Court has recognized that there is no single legislation in India that relates to climate change and associated concerns. Laws for better climate

##### The limitations of Indian Constitutions understanding of environment and climate change:

- **Human centric worldview-** Colonial rulers had an anthropocentric worldview of the environment. This view considers human beings as the most significant entity of the universe. Unfortunately, this narrow view, is reflected in the Indian Constitution. For example, Entry 17 of the State List outlines the legislative power of states regarding "water". However, the understanding of "water" is limited only to water supplies, irrigation, water storage, etc.
- **Lack of explicit power-** Indian laws do not have the explicit or clearly expressed power to protect the environment in a holistic manner.
- **Fragmented legislative power-** The Constitution perceives the environment just in terms of air, water, and soil. This limited view contributes to fragmented legislative power where there are separate laws for air water and forests. However, there is no centralized

authority empowered to protect the environment comprehensively or mitigate the effects of climate change.

##### The importance of enhanced state participation in dealing with climate change challenges:

- States in India vary significantly in their vulnerability to environmental crises, and empowering local decision-making can mitigate harm.
- **Climate change affects different regions differently**, sometimes even within the same state or district. A recent example is from Karnataka, where Bijapur experienced a drought while nearby Belgaum faced floods. In this context, decentralisation of policy formulation and decision making assumes great importance.

##### The way forward:

- **Introduction of new entry in concurrent list-** There is a need to introduce "environment" as an entry in the Concurrent List. Both the center and states can legislate on matters related to the environment. The states will take the primary role and the center will have a specific role in case of climate emergencies. This is also in consonance with the spirit of decentralization and enhanced cooperative federalism.
- **Reimagining Indian Federalism-** In the backdrop of potentially catastrophic effects of climate change on society, the need of the hour is to re-imagine Indian federalism. This is also in consonance with the principle of subsidiarity.

**Mains point: The limitations of Indian Constitution's understanding of environment and climate change.**

#### 15. SC ruling on candidate's right to privacy from voters.

##### Context:

Recently, the Supreme Court ruled that electoral candidates have a right to privacy, asserting that they are not

obligated to disclose every detail of their personal and financial history for public scrutiny.

### About the judgement:

- It has been held that a candidate's decision to keep private those details which do not pertain to or affect their suitability for public office should not be considered a 'corrupt practice' under **Section 123 of the Representation of People Act, 1951**. Such non-disclosure would not amount to a "defect of a substantial nature" under **Section 36(4) of the 1951 Act**.
- The Supreme Court observed that it is not necessary for a candidate to declare every item of movable property that he or his dependent family members owns.
- Items which constitute a sizeable asset in itself or reflects upon the candidature, in terms of his lifestyle, must be disclosed.
- The Court also highlighted that candidates must declare their assets to enhance democratic participation and ensure voters have the necessary information to make informed choices.
- It recognized the voters' right to essential information about candidates but also noted the importance of balancing this with the candidates' privacy rights, suggesting that disclosure of every personal detail is not necessary.

**Prelims point: the Representation of People Act, 1951.**

## 16. Curative Petition.

### Context:

The Supreme Court has recently set aside the 2017 arbitral award that required the Delhi Metro Rail Corporation (DMRC) to pay nearly Rs 8000 crore to Anil Ambani-owned Reliance Infrastructure. However, exercising curative jurisdiction in a

commercial case pushes the envelope and raises questions on the finality of a ruling of the highest court in the country.

### About Curative Petition:



Source-Live Law

- Description-** It is the final and last option for the people to acquire justice. The concept of curative petition originated from the case of Rupa Ashok Hurra Vs. Ashok Hurra and another case (2002). It may be filed after a review plea against the final conviction is dismissed.
- Objective-** To ensure there is no miscarriage of justice and to prevent abuse of process.

### Criteria for admission:-

- It can be entertained if the petitioner establishes that there was a violation of the principles of natural justice.
- It can be admitted where a judge has failed to disclose facts that raise the apprehension of bias.
- A curative petition needs a senior advocate's certification that mentions a good number of reasons to consider it.

### Curative petitions:

- A curative petition must be first circulated to a bench of the 3 senior-most judges, and the judges who passed the concerned judgment (If available).
- It only gets listed for a hearing if most of the judges agree that it is necessary and, ideally, it is heard by the same Bench as before.
- Curative petitions are usually decided by judges privately, unless someone asks for an open-court hearing.



- At any point, the Bench can ask a senior counsel to assist as amicus curiae during the curative petition review.
- If the Bench decides at any point that the petition is baseless and without any merit, it can make the petitioner pay extra costs.

### **Prelims point: Curative petitions.**

## **17. Transparency in candidate disclosure.**

### **Context:**

The Supreme Court has recently held that candidates need not disclose every piece of information and possession in their election affidavit unless it is substantial in nature.

### **The existing law and courts judgement specify about disclosure of information:**

- RPA 1951-As per section 33 of the Representation of the People Act, 1951**, all contesting candidates need to file their nomination paper for elections along with an affidavit in a prescribed format.
- The Supreme Court Judgment-** The Supreme Court in **Association of Democratic Reforms (ADR) Vs Union of India (2002)** held that voters have the right to know about the criminal antecedents, income and asset details of the candidate and his/her dependents. **This resulted in Section 33A being added to the RP Act** that requires details of criminal antecedents to be part of the election affidavit.
- RPA 1951- As per section 125A of the RP Act**, if a contesting candidate fails to furnish required information; giving false information or concealing any information in the nomination paper or affidavit then he shall be liable to be punished with imprisonment up to 6 months or fine or both.

### **The problems with these existing laws:**

- Disqualification on trivial grounds-** The election of an independent

candidate from Arunachal Pradesh was set aside by Gauhati High Court because he failed to declare three vehicles as assets in his election affidavit. However, the Supreme Court reversed the decision and held that non-disclosure of information that is not substantial cannot be considered an attempt to unduly influence the voters.

**Circumvention of rule-** Many contesting candidates circumvented the requirement of rule 4A by leaving certain columns blank and filing incomplete affidavits. This prompted Supreme Court in **Resurgence India Vs EC (2013)** to issue an order that all columns need to be filled appropriately.

### **The way forward:**

- The Law Commission in its 244th report on 'Electoral Disqualifications' (2014)** and EC in its memorandum on 'Electoral reforms' submitted in 2016 had provided certain recommendations. Such as-
  - If someone is found guilty of submitting a false affidavit, they must face at least two years in prison and be disqualified from running for office. The trials in these cases must be conducted daily.
  - Persons convicted by a competent court with offences punishable by imprisonment of at least five years should be debarred from contesting in the elections.
- The Supreme Court's order in Public Interest Foundation Vs Union of India (2018)** that directed candidates as well as political parties to issue a declaration about criminal antecedents, at least three times before the election, must be strictly implemented. This would enable a discerning voter to exercise a well-informed choice.

**Mains point: The existing law and courts judgement specify about disclosure of information? Highlight the problems with these existing laws.**

# INTERNATIONAL RELATIONS

## 1. "Did Congress 'give away' Katchatheevu island to Sri Lanka?"

### Context:

PM Narendra Modi recently criticized the Congress for giving away the strategic Katchatheevu island to Sri Lanka in the 1970s.

### About Katchatheevu Island:



Source- The Indian Express

- Location-** Katchatheevu is a small, uninhabited island covering 285 acres located in the Palk Strait, between India and Sri Lanka. Katchatheevu lies 33 km northeast of Rameswaram and about 62 km southwest of Jaffna.
- Sole Structure on Island-** The island's sole structure is St. Anthony's Church, built in the early 20th century. Every year, during a festival, Christian priests from India and Sri Lanka jointly conduct services, drawing pilgrims from both countries.
- Lack of potable water source-** Katchatheevu is not suited for permanent settlement as there is no source of drinking water on the island.

### The history of the Island:

- Formation-** It originated from volcanic activity during the 14th century.
- Administration:**
  - During the early medieval era, the Jaffna kingdom of Sri Lanka governed it.
  - By the 17th century, control shifted to the Raja of Ramnad (present-day Ramanathapuram, Tamil Nadu), who owned Katchatheevu island. Later, it became part of the Madras Presidency.
- Dispute-** In 1921, both India and Sri Lanka, at the time British colonies, claimed Katchatheevu in order to determine fishing boundaries.

### 1974 Indo-Sri Lankan maritime agreement:

- In 1974, an agreement signed by Prime Ministers Indira Gandhi of India and Sirima R.D. Bandaranaike of Sri Lanka acknowledged Katchatheevu as part of Sri Lanka's territory, leading to a change in ownership.
- The agreement allowed Indian fishermen to access Katchatheevu as before, but didn't settle fishing rights. Sri Lanka understood that Indian fishermen could only access Katchatheevu for resting, drying nets, and visiting the Catholic shrine without needing a visa.
- Another treaty signed in 1976 restricted fishermen from both nations from fishing in each other's exclusive economic zones. However, uncertainty about fishing rights has persisted till date.

### Prelims point: About Katchatheevu Island

## 2. The EU's sustainability directive may weaken trade ties"

### Context:

This article discusses the EU's Corporate Sustainability Due Diligence Directive, which requires EU companies to be accountable for environmental and human rights issues in their supply chains.

### The EU's Corporate Sustainability Due Diligence Directive (CSDDD):

- The CSDDD is a new European Union directive focusing on corporate responsibility for environmental and human rights issues within supply chains.
- The CSDDD demands adherence to international human rights laws and stringent environmental standards, including measures against pollution and deforestation.
- While the CSDDD aims to promote sustainability, the current version is considered watered down, offering potential loopholes and lacking support for developing countries like India in meeting these high standards.

### The issues with EU's Corporate Sustainability Due Diligence Directive (CSDDD):

- **Watered-Down Version:** The adopted version of the CSDDD is criticized for being less stringent than the original proposal.
- **Higher Thresholds for Applicability:** It raises the thresholds for industry applicability, potentially excluding smaller businesses from its scope.
- **"Obligation of Means" Clause:** The directive mandates companies to implement "appropriate measures" for due diligence, which might be insufficient for actual impact mitigation.
- **Lack of Support for Developing Countries:** It does not adequately address support for firms in developing countries, like those in India, that are

expected to meet high sustainability standards.

- **Unaddressed External Constraints:** The CSDDD overlooks external factual or legal constraints in third countries, which can hinder compliance.

### India doing in response:

- **Adjusting to International Standards:** India is modifying its supply chains and manufacturing processes to meet the CSDDD and CBAM requirements.
- **Export Importance to the EU:** The EU is a major destination for Indian exports, receiving 14.9% of them in 2021, highlighting the need for compliance with EU directives.
- **Involvement in IPEF:** Through the Indo-Pacific Economic Framework, India is focusing on resilient and sustainable supply chain development.
- **Creation of Labour Rights Advisory Board:** Under the IPEF, India is forming a Labour Rights Advisory Board, including workers, employers, and government representatives.
- **Drafting National Action Plan:** India is working on a 'zero draft' National Action Plan for Business and Human Rights, incorporating human rights and environmental protection measures.

### The impacts of the EU's Corporate Sustainability Due Diligence Directive (CSDDD) on India:

#### Positive Impacts on India:

- **Attracting EU Investment:** Compliance with the CSDDD could draw more foreign investment from the EU to India by adhering to human rights and environmental standards.
- **Promoting Sustainable Business:** The directive can lead to sustainable business growth in India, aligning with global sustainability standards.

#### Negative Impacts on India:

- **Financial Burden:** Indian exporters may face increased financial strain due to the need to align with the CSDDD's

stringent standards, on top of the EU's Carbon Border Adjustment Mechanism.

**Potential Loss of Business:** There is a risk of losing EU business if Indian firms fail to comply with the CSDDD's environmental and human rights requirements.

**Challenges in Meeting Standards:** Some Indian practices, like the Green Credits Programme, might not meet the CSDDD standards, indicating a gap between current domestic standards and those required by the directive.

**Mains point: The impact of the EU's Corporate Sustainability Due Diligence Directive (CSDDD) on India.**

### 3. India's new focus in foreign policy: How Delhi maps the world

#### Context:

The article discusses how India is focusing on islands and maritime regions for its foreign policy and security, considering new partnerships and regions like Europe, the Middle East, and Africa. It also mentions internal challenges in regions like South Asia.

#### India's new focus in foreign policy:

**Strategic Islands and Maritime Regions:** India is emphasizing strategic importance on islands and maritime territories, like in the Maldives, Papua New Guinea, Mauritius, and the development of Andaman and Lakshadweep.

**Adopting the Indo-Pacific Framework:** India has embraced the Indo-Pacific concept, moving away from seeing it as an American plot. This shift is a response to tensions with China and aligns with the **Quadrilateral Security Dialogue (Quad)** involving Australia, India, Japan, and the US.

**Increased Focus on Eurasia and Europe:** India joined the Shanghai Cooperation Organisation, indicating

interest in Eurasia. There's also a growing engagement with Europe, as seen in increased diplomatic visits and a free trade agreement with EFTA countries.

**Broadening Relations with the Middle East and Africa:** India is strengthening ties with the Middle East, including partnerships with UAE and Saudi Arabia, and showing a naval presence in the Red Sea region. This reflects a more integrated approach towards the Middle East, Africa, and the eastern Mediterranean.

**Shifting Attention from South Asia:** With the decline of SAARC, India's focus is moving from South Asia to sub-regional and trans-regional cooperation, such as with the Bay of Bengal nations.

**New Focus on Zomia and Khorasan:** India is looking towards new regions like Zomia and Khorasan due to geopolitical changes on its eastern and western borders.

#### The challenges does India face in shaping its new foreign policy:

**Tension with China:** India's deteriorating relations with China, marked by several military crises, pose a significant challenge, especially in adopting the Indo-Pacific strategy and managing regional dynamics.

**Balancing Ties with Russia and the West:** India's approach to Eurasia is changing, influenced by the escalating conflict between Russia and the West and the strengthening alliance between China and Russia. This evolution presents India with the challenge of maintaining a balance in its relations with both sides.

**Economic Engagement with Europe:** While India is increasing its diplomatic and trade ties with Europe, successfully negotiating and finalizing a



comprehensive free trade agreement remains a complex challenge.

**Internal Challenges in South Asia:** The failure of SAARC and changing dynamics with Pakistan require India to adapt its approach in South Asia, focusing more on sub-regional cooperation.

**Mains point: The India's new foreign policy focus and the challenges it faces in shaping it.**

#### 4. NATO responding to global security issues: Nato@75: The transatlantic alliance seeks a global role

##### Context:

This article discusses NATO's 75th anniversary and its expansion, with new members from Europe due to concerns about Russia. It also talks about NATO's global reach and challenges, including funding and differing member interests, especially considering a potential Trump presidency in the US.

##### The NATO's current situation:

**NATO turns 75:** The North Atlantic Treaty Organization marks its 75th anniversary.

**Membership growth:** Grown to 32 members, including recent additions of Finland and Sweden.

**Influence of Ukraine conflict:** Putin's invasion of Ukraine has driven Eastern European countries toward NATO for security.

**Global Reach:** Extending influence into the Indo-Pacific region, addressing challenges like China's rise.

##### The challenges does NATO face:

**Expansion Tensions:** NATO's eastward expansion, including Baltic states and countries like Finland and Sweden, provokes Russia, fueling geopolitical tensions.

**Internal Disagreements:** Different member countries have conflicting

interests and approaches, creating challenges in unified decision-making.

**Funding Concerns:** Issues with member nations contributing sufficient funds to NATO, a point of contention, especially with a potential Trump presidency, who questions the principle of mutual defense unless members increase funding.

##### NATO responding to global security issues:

**Expansion in Response to Russia:** NATO has added new members like Finland and Sweden, driven by concerns over Russian aggression, especially post-Ukraine invasion.

**Global Reach Beyond Europe:** The alliance is extending its focus to the Indo-Pacific region, confronting challenges like China's rise.

**Diverse Global Partnerships:** NATO is working with partners globally, including countries like Australia, Japan, and South Korea, acknowledging their significance in regional security.

**Financial Commitment to Defense:** Planning a substantial \$100 billion aid package for Ukraine, demonstrating its commitment to support nations facing security threats.

**Mains point: The NATO's current situation, challenges, and response to global security issues.**

#### 5. Major issues with the WTO: A requiem for the WTO

##### Context:

The article discusses challenges facing the World Trade Organization (WTO), including issues with China's trade practices, dispute settlement problems, and rising protectionism. It also mentions the shift in global trade dynamics, the impact of regional agreements, and India's role in world trade.

## The major issues with the WTO:

### Main Challenges:

- **China's Designation:** China continues to be classified as a "developing economy" despite being a major global trader. This status is a point of contention.
- **Unfair Trade Practices:** China's use of state-owned enterprises with subsidies is viewed as giving it an unfair advantage in global trade.
- **Rising Protectionism:** There's a global trend towards protectionism, impacting the effectiveness of the WTO.

### Dispute Settlement System:

- **Appellate Body Dysfunction:** The WTO's appellate body, crucial for resolving trade disputes, is not functioning properly due to the U.S. blocking appointments.
- **Alternative Mechanisms:** The creation of the Multi-Party Interim Appeal Arbitration Agreement (MPIA) as an alternative dispute resolution mechanism highlights the WTO's struggles. However, MPIA's decisions aren't binding for non-participants, illustrating limitations in resolving global trade disputes.

### Impact of New Technologies and Current Events:

- **Technology's Uncertain Impact:** The potential effects of AI on service trade are still unclear.
- **Global Events Disrupting Trade:** COVID-19 and the Ukraine war have led to supply chain disruptions, influencing a shift towards localized production and affecting commodity trade, such as the ongoing trade in Russian oil despite sanctions.

### The global trade evolved after the global financial crisis:

- **Doubling of Trade Volumes:** Prior to the 2008 financial crisis, global trade volumes more than doubled, and global tariffs decreased.

- **Rise of Regional Agreements:** Post-crisis, agreements like the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) gained prominence.
- **Shift in Global Trade Dynamics:** The U.S. and China are creating distinct trade spheres yet continue to trade with each other.
- **Changes in Manufacturing:** There's a trend of manufacturing moving away from richer countries and premature de-industrialization in developing countries, including India.
- **'Slowbalisation':** A revival in trade, especially in services, post-2020 but at a slower pace compared to the pre-crisis era.

### The outcome of the recent WTO Ministerial Conferences:

- **Growing Export Share:** India's share in world exports increased from 0.5% in 1990 to 2.5% in 2022, with a projection to reach about 4% by 2030.
- **Services Export Growth:** Approximately half of India's future exports are expected to be in the rapidly growing services sector.
- **Protection of Developing World Interests:** India views itself as a defender of the interests of developing countries in the global trade arena.
- **Balancing Protectionism and Open Trade:** Despite a growing domestic protectionist lobby, India's long-term interests align with a more open global trading system.
- **Exploring Free-Trade Agreements:** India is considering free-trade agreements with major economies like the UK, EU, and potentially the US, to enhance its trade prospects.

### Mains point: The major challenges facing the World Trade Organization (WTO) and

**how global trade dynamics have evolved after the global financial crisis.**

## 6. US-UK agreement on AI safety testing.

### Context:

The United States and the United Kingdom have recently signed an agreement to collaborate on creating tests for the most advanced artificial intelligence (AI) models. The agreement is following the commitments made at 2023 Bletchley Park AI Safety Summit.

### The key details of the agreement:

#### Sharing of information:

- a. Both countries will exchange important information regarding the abilities and risks of AI models and systems.
- b. They will also exchange basic technical AI safety and security research and collaborate to ensure safe deployment of AI systems.

**Joint Testing and Personnel Exchanges-** They plan to conduct at least one collaborative testing exercise on a model accessible to the public. Additionally, they aim to leverage their combined expertise by considering personnel exchanges between the Institutes.

**Collaboration with other countries-** They have also pledged to establish comparable collaborations with other nations to advance global AI safety.

### About Bletchley Park AI Safety Summit:

**The Bletchley Declaration**, signed at the UK AI Safety Summit, focuses on AI safety and security risks.

It specifically addresses the potential dangers of advanced AI models, including issues related to public safety, privacy, and bias, highlighting the need for global action on AI risks.

**Prelims point: Bletchley Park AI Safety Summit.**

## 7. India-Israel G2G mobility agreement.

### Context:

India has asked Israel to guarantee the safety of Indian citizens being sent to the conflict-affected country under a government-to-government (G2G) mobility agreement to work as blue-collar workers.

### Blue-collar workers:

Blue-collar workers are people who do manual labor, usually in industries like manufacturing, construction, maintenance, or farming. They often don't need a lot of formal education and usually have jobs that involve physical work.

### India- Israel G2G mobility agreement:

**Background-** Israel sought to recruit a minimum of 100,000 Indian workers to fill the positions left vacant by Palestinian workers who were previously employed across various sectors of the Israeli economy.

In November 2023, the **Ministry of Skill Development and Entrepreneurship** inked a pact with Israel to dispatch caregivers and construction workers for a three-year term spanning from 2023 to 2026.

Israel and India had entered into an agreement to transport approximately 42,000 workers from India to different locations in Israel.

This led to a recruitment campaign in Uttar Pradesh and Haryana, attracting a considerable number of workers who registered to depart for Israel.

Recently the first batch of 60 Indian workers flew to Israel.

**Prelims point: India- Israel G2G mobility agreement**

## 8. Concerns in Myanmar: For peace, Myanmar needs outside help.

### Context:

The article discusses the ongoing conflict in Myanmar, involving **the military government (SAC) and the**

**Resistance.** The UN is worried about rising violence, and there's a need for external aid and peace efforts. India, as a neighboring country, could help resolve this crisis. For peace Myanmar needs outside help

### The current situation in Myanmar:

- Myanmar is divided post-2021 military coup, with areas controlled by the military government (SAC) and the Resistance.
- The United Nations is deeply concerned about escalating conflict and civilian risks.
- About 2.7 million people are displaced, with a prediction of 1 million more by end of 2024.
- An estimated 18.6 million people, including 6 million children, need humanitarian assistance.

### The main concerns in Myanmar:

- Escalation of Conflict:** The UN has expressed deep concern over the worsening situation and the increased conflict in Myanmar.
- Risk to Civilians:** Civilians are seriously at risk due to the ongoing violence.
- Expansion in Rakhine State:** Conflict is expanding in Rakhine State, known for existing vulnerabilities and discrimination, potentially inciting more communal tensions.
- Forced Military Recruitment:** A new conscription law leads to the forcible recruitment of youth, exacerbating the crisis.
- Increased Air Strikes:** There's been a fivefold increase in air strikes by the military in the last five months.
- Aid Delivery Challenges:** The flow of aid is minimal and hindered by logistical challenges in the conflict-ravaged nation.
- Lack of Consensus:** There is a significant challenge in de-escalating violence and delivering humanitarian aid due to

the animosities between the SAC and the Resistance.

### Way forward:

- Establishing Dialogue:** There's a need for an innovative dialogue mechanism among all relevant parties.
- Humanitarian Corridor:** Thailand considers creating a "humanitarian corridor" inside Myanmar.
- External Assistance:** Aid from ASEAN countries, China, India, and Bangladesh is crucial. India and other neighbors should develop practical, context-aware proposals to advise policymakers.
- Addressing the Constitution Issue:** Finding a middle ground between SAC's 2008 constitution and the Resistance's demand for a new constitution is important.
- Ensuring Regional Stability:** Addressing Myanmar's crisis is vital for the peace and progress of the region.

**Mains point: The escalating conflict in Myanmar is impacting civilian safety and regional stability.**

## 9. Sittwe Port- India's second overseas port.

### Context:

Recently, India has gained the right to operate its second overseas port, Sittwe in Myanmar. India Ports Global (IPGL), a company fully owned by the Ministry of Ports, Shipping, and Waterways, is set to take charge of operations at the Sittwe port.

### About Sittwe Port:

- Sittwe Port is situated in Sittwe, the capital of Rakhine State in Myanmar.
- It is situated at the mouth of the Kaladan River, which flows into the Bay of Bengal.
- The port was constructed by India as part of the Kaladan Multi-Modal Transit Transport Project.



### Importance of the port

- Its coastal location provides access to maritime trade routes, making it a crucial gateway for regional and international commerce.
- **Being a deepwater port**, it is capable of accommodating large vessels. Its depth allows for efficient loading and unloading of cargo, facilitating trade and transportation.

### Strategic Implications for India:

- **Alternative route for Goods Transport-** Sittwe port serves as an essential outlet for goods from India's northeastern region. It offers a smoother and more cost-effective alternative to the congested traditional land routes.
- **Enhances India's Maritime Connectivity-** The port is positioned close to the Indian Ocean and near the Strait of Malacca. The strategic location of the Sittwe Port enhances India's maritime connectivity and trade routes, while also bolstering regional security.
- **Countering Chinese Agressiveness-** The move of acquisition of the Sittwe Port supports India's economic ambitions, strengthens its naval capabilities, and demonstrates its commitment to protecting its strategic interests in the Indian Ocean amidst China's growing assertiveness in the region.

### Prelims point: About Sittwe Port

## 10. EU-India start-up collaboration on Recycling of E-Vehicles Batteries

### Context:

Recently, the European Union (EU) and India launched an Expression of Interest (EoI) for startups working in Battery Recycling Technologies for Electric Vehicles (EVs) for a matchmaking event.

## About the EU-India Battery Recycling Technologies Matchmaking Event:

- **About:** It is a short-term action under Working Group 2 on Green and Clean Energy Technologies.
- a) This initiative was announced by India and the European Commission in 2022. The event is scheduled for June 2024.
- b) Twelve innovators (six from India, six from the EU) will pitch their solutions.
- c) Six finalists (three from each region) will be selected for further opportunities, including visits to India and the EU.

**Co-chaired:** It is being co-chaired from the Indian side by the Office of the Principal Scientific Adviser to the Government of India and from the EU side by the Directorate-General for Research and Innovation of the European Commission.

**Purpose:** To enhance cooperation between EU and Indian SMEs and startups in clean and green technologies, focusing on battery recycling for EVs.

### Objectives:

- a) Identifying and promoting startups/SMEs specializing in EV battery recycling technologies.
- b) To facilitate cooperation, deepen customer relations, and explore trade and investment avenues.

### Significance for India and the EU:

- **Sustainable Development:** The initiative is aligned with global efforts towards sustainability and the efficient use of resources through advanced recycling technologies.
- **Economic Relations:** The initiative strengthens economic ties between India and the EU through collaborative innovation and shared technological advancements.

- **Circular Economy:** It also enhances the lifecycle of rare materials and supports both regions' transitions towards carbon neutrality.

### About the Trade and Technology Council:

- **The India-EU Trade and Technology Council (TTC)** was officially set up on February 6, 2023 by India and the EU.
- The TTC stands as a principal forum for strengthening the strategic alliance between India and the EU, particularly in trade and technology.
- The India-EU TTC is organized into three main Working Groups:
  - (i) Working Group 1:** It focuses on Strategic Technologies, Digital Governance, and Digital Connectivity.
  - (ii) Working Group 2:** It is dedicated to Green and Clean Energy Technologies.
  - (iii) Working Group 3:** It targets Trade, Investment, and Resilient Value Chains.

## 11. Needed an Apple encore: India can do better in electronics exports.

### Context:

The World Trade Organization (WTO) has lowered its forecast for global trade growth in 2024 from 3.3% to 2.6%.

### The US-China trade war affected global trade:

- **US-China Trade War:** The US-China trade war started with the U.S. imposing a 25% tariff on about \$350 billion worth of Chinese intermediate goods in 2018. Some products like laptops and mobile phones were initially excluded from tariff increases.
- **Impact on Supply Chain:** Despite tariffs, mobile phone imports from China to the U.S. grew by 10-15%. However, imports from other parts of the world increased by over 70%, indicating diversification away from Chinese suppliers.

- **India's Position:** India's electronics exports grew from \$1.3 billion in 2018 to \$8.9 billion in 2023, capturing only 5.5% of the total increase in non-Chinese electronics imports to the U.S.

- **Other Countries' Success:** Countries like Vietnam benefitted significantly, with electronics exports rising from \$12.1 billion in 2018 to \$51.2 billion in 2023, making up 28% of the total non-Chinese incremental electronics imports into the U.S.

### The other countries outperforming India:

- **India's Tariff Strategy:** India increased tariffs to boost domestic production, which could deter foreign investors and companies looking for stable, low-cost manufacturing bases.
- **Export Statistics:** Vietnam exports electronics to 123 countries, compared to India's exports to just a couple of dozen, highlighting its broader market reach.

**Mains point: The factors contributing to the outperformance of countries like Vietnam over India in terms of capturing a larger share of non-Chinese electronics imports into the U.S.**

## 12. Defence Attache .

### Context:

India has started to post military and defence attachés to several new countries. This is being done to expand strategic ties with key regions across the globe.

### About Defence Attache:



Source-Getty Images

- . **Description-**A Defence Attache is a member of the armed forces who serves in an embassy as a representative of his/her country's defence establishment abroad.
- . **Representation-**A Defence Attaché (DA) can represent all branches of the military, but in bigger countries, they may represent an individual service branch, such as an air force or naval attaché.
- . **Duties-**
  - They have to protect, develop, and promote the defence interests of their country in the nation they are assigned,
  - They have to protect, develop, and promote the defence interests of their country in bilateral military and defence relations as well.
  - They may be deployed to work on specific issues, like migration.
  - They may serve as part of a military mission with organisations such as NATO, the EU, or the UN.

- . **Designation-**They usually operate as the head of the mission or a military adviser.
- . **Diplomatic immunity-**The Vienna Convention on Diplomatic Relations of April 18, 1961, gives immunity to individuals based on their position in a diplomatic mission. Article 7 of the convention defines the legal status of the Defense Attaché.

#### **Vienna Convention on Diplomatic Relations of 1961:**

- . **Objective-** To ensure that diplomats can conduct their duties without threat of influence by the host government.

#### **Provisions-**

- . It outlines the rules of diplomatic relations to facilitate friendly relations between States and to enable States to develop economic, cultural and scientific relations.
- . It provides the legal basis for diplomatic immunity.

**Prelims point:Defence Attache.**

# ECONOMY

## 1. Firms in a tough global environment

### Context:

Major concerns in global economics  
Global economic integration previously spurred growth, but now, trends towards de-integration are impacting the economy. These include changes in trade rules, environmental taxes, shifts in China's economy, and various government actions, all are affecting the world economy and business strategies.  
Major concerns in global economics

### The third globalization different from the early one

#### Economic Engagement:

Third globalization involves more restricted economic engagement for countries misaligned in foreign policy and military affairs. Earlier, global access was more open, regardless of such alignments.

#### Case of Russia and China:

The belief that integrating countries like Russia and China into globalization would lead them to freedom didn't hold; they now face restrictions due to differing policies.

#### Capital Destruction:

This phase involves tangible and intangible capital destruction, like factory closures in China and oil extraction issues in Siberia, impacting global GDP.

### Some major concerns in global economics

#### Carbon-Border Taxes Impacting Global Production:

Carbon-border taxes, like the European Carbon Border Adjustment Mechanism, aim to equalize the cost of production inside and outside Europe. These taxes are not protectionist but ensure fair

competition and are similar to VAT on imports.

The shift towards renewable energy, especially in China (33% renewables), affects countries like India with less developed energy policies.

#### Nationalistic Policies:

Since 2013, under President Xi Jinping, China has seen centralized power, nationalism, and hostility towards foreigners. Their economy, previously boosted by credit, infrastructure, and construction, is struggling.

China's attempt to subsidize exports conflicts with global trade rules and impacts other economies.

#### Unsystematic Movements in Trade Policy:

The erratic and unpredictable changes in trade policies by various countries have disrupted global trade norms established by agreements like GATT/WTO. An example is the looming threat to international digital service trade agreements, influenced by shifting political climates and elections.

#### Situation of Indian Internationalization

- Indian internationalization has faced challenges, with modest growth in foreign direct investment (FDI) and exports in the last decade.
- From 2012 to 2022, total exports grew by about 3% per year in real dollars.
- Services exports have been a strong component, showing significant success.
- Government policies have been somewhat positive, like reducing import duties for phone parts and electric vehicles, benefiting companies like Apple, Xiaomi, and Tesla.



However, the overall strategy lacks focus, leading to underperformance in international markets compared to potential.

Indian firms are increasingly integrating into the global economy through exports and FDI.

### Way forward

There is a need to be more proactive in understanding and adapting to the economic and political landscape. In the era of the third globalization, diversification and envisioning potential risks are crucial for firm survival. Understanding the implications of carbon-border taxes, Chinese subsidies, and the unpredictable nature of global trade policies is vital.

### Mains Point: Major concerns in global economics

## 2. Viksit must be inclusive

### Context:

New Indian Agriculture Challenges for Viksit Bharat

The article discusses the challenges and necessary strategies for New Indian Agriculture Challenges for Viksit Bharat by 2047.

### Indian agriculture has grown over the years

- Indian agriculture's growth has been steady, with an average annual growth rate of 3.3% from 1991-92 to 2023-24.
- Under the Modi government (last 10 years), agriculture grew at 3.6%, slightly better than the 3.5% during the Manmohan Singh era.
- Agriculture, engaging about 45% of India's workforce, contributes around 18% to the GDP. However, the Agri-GDP growth for 2023-24 is just 0.7%.
- By 2047, agriculture's GDP share might drop to 7-8%, but it could still involve over 30% of the workforce.

### Challenges for Indian agriculture to realize its aspiration of a Viksit Bharat by 2047

#### Climate Change Impact:

Agriculture is vulnerable to climate risks, like rising temperatures and unseasonal rains that dropped growth to 0.7% in 2023-24.

#### Workforce Imbalance:

Despite contributing about 18% to GDP, agriculture employs 45% of the workforce, indicating low productivity. This discrepancy could lead to economic imbalances.

#### Resource Management:

Challenges in water consumption, soil degradation, and greenhouse gas emissions need urgent attention.

#### Technology and Innovation Lag:

Modernization in farming practices and infrastructure is crucial for coping with climate challenges and increasing productivity.

#### Policy Limitations:

Current policies, including export controls and stocking limits, resemble outdated strategies of the 1960s, indicating a need for reforms in areas like subsidies, research, and market access.

### Should be done

#### Increase Investment in Agriculture R&D and Innovation:

Allocate more resources to agricultural research and innovation to enhance productivity.

#### Promote High-Value Agriculture:

Shift focus to sectors like poultry, fishery, dairy, and horticulture, which offer higher economic returns.

#### Improve Market Access for Farmers:

Develop policies and institutions to connect farmers to national and international markets, potentially through digital platforms like E-NAM and ONDC.

#### Rationalize Subsidies:

Redirect funds from food and fertilizer subsidies towards more sustainable agricultural practices.

**Enhance Skill Development:**

Focus on training rural populations for better job opportunities in a rapidly urbanizing India.

**Mains Point: New Indian Agriculture Challenges****3. Next phase for RBI: Central bank should be empowered further****Context:**

The Reserve Bank of India's (RBI) 90th anniversary and its role in economic growth

Recently PM Narendra Modi attended the opening ceremony of RBI@90, a program marking 90 years of the Reserve Bank of India, in Mumbai, Maharashtra. He also released a commemorative coin to mark 90 years of RBI.

The article discusses the Reserve Bank of India's (RBI) 90th anniversary and its role in economic growth. It also highlights areas needing improvement, such as banking regulation and adapting to new financial technologies.

**RBI establishment and history****Established**

The RBI was founded on April 1, 1934, after suggestions from the Royal Commission on Indian Currency and Finance to ensure the country's monetary stability.

**Commencement of operations**

It started functioning on April 1, 1935, with Sir Osborne Smith as its first Governor.

**Headquarter**

The RBI's main office was first in Kolkata but moved to Mumbai in 1937

**RBI has evolved****Inflation-targeting central bank:**

RBI evolved into an inflation-targeting central bank, enhancing monetary policy transparency and boosting investor confidence.

**Foreign exchange reserves:**

Managed the external sector skilfully, accumulating large foreign exchange reserves to reduce currency volatility.

**Macroeconomic stability:**

Improved macroeconomic stability, evident in recent years through effective management.

**Reduction in NPAs:**

Non-Performing Assets (NPAs) in banks reduced significantly, with the banking system in its best position in over a decade.

**Technology in payments:**

The RBI's role in facilitating technology adoption in payments, making India a leader in this area, is acknowledged.

**Central bank digital currency:**

Pioneered experiments with central bank digital currency, indicating readiness for future financial challenges.

**Significant achievements of RBI****Balance sheet and liquidity support**

As of March 31, 2023, the RBI's balance sheet is at a remarkable Rs 63 lakh crore, surpassing the government's annual budget. With this robust balance sheet, the RBI offered liquidity support equivalent to nearly 9% of GDP (US\$ 227 billion) after the COVID-19 pandemic.

**Foreign Exchange Reserves**

India's foreign exchange reserves have now reached a significant USD 642 billion, ranking fourth globally. These reserves are vital for stabilizing the value of the rupee and have supported India during global crises like the 1997 East Asian currency crisis and the 2008 financial crisis.

**Inflation Management**

Over time, the RBI's responsibility for managing inflation or price stability has changed. In 2016, a flexible inflation targeting system was introduced. This involves a six-member Monetary Policy Committee (MPC) determining interest

rates to keep inflation within a target range of 2-6%, with 4% as the goal.

### Financial Sector Regulation

The RBI has taken steps to lower non-performing assets (NPAs) in banks and keep a healthy capital adequacy ratio between 15-16%. It has also acted as a lender of last resort, helping troubled banks such as Yes Bank and Lakshmi Vilas Bank.

### Challenges that RBI facing

#### Banking Regulation and Supervision:

The RBI needs to enhance its regulatory and supervisory mechanisms, as demonstrated by the problems at YES Bank and Infrastructure Leasing & Financial Services Ltd.

#### Transparency with Regulated Entities:

There's a challenge in maintaining transparency, specifically highlighted by the RBI's dealings with Paytm Payments Bank.

#### Regulating New-Age Fintech Firms:

The RBI faces the challenge of effectively regulating emerging fintech firms while balancing the need for innovation.

#### Limited Powers over Public-Sector Banks:

The RBI's constrained ability to regulate public-sector banks is mentioned, indicating a need for legal changes to empower the institution more effectively.

#### Potential Fiscal Dominance of Monetary Policy:

The government's role in fiscal policy could overshadow the RBI's monetary policy, stressing the need for the government to maintain low fiscal deficits.

**Mains Point: Reserve Bank of India's (RBI) 90th anniversary and its role in economic growth**

**4. Defence exports touch record Rs 21,083 crore in FY 2023-24, an increase of 32.5% over last fiscal**

### Context:

Defence exports hit a record high

Defence exports hit a record high of Rs 21,083 crore (approximately US\$ 2.63 Billion) in FY 2023-24, marking a 32.5% increase from the previous fiscal year's Rs 15,920 crore.

These recent numbers show a 31-times growth in defence exports in the last 10 years compared to FY 2013-14.

### Recent figures of defence exports states that Private sector and DPSU contribution

Approximately 60% of these exports come from the private sector, while Defence Public Sector Undertakings (DPSUs) contribute around 40%.

### Significant rise in defence exports from 2014-15 to 2023-24-

During 2004-05 to 2013-14, total defense exports amounted to Rs 4,312 crore. However, this figure surged to Rs 88,319 crore from 2014-15 to 2023-24, marking a remarkable 21-times increase.

### Future projection

India is projected to reach an annual defense production of Rs 3 trillion by 2028-29, with exports of military hardware potentially hitting Rs 50,000 crore.

**Prelims Point: Defence exports**

**Mains Point: Defence exports**

## 5. India's atmanirbhar defense sector

### Context:

Development of India's defense ecosystem:

This article discusses India's efforts to strengthen its defense industry. It mentions policy changes, increased domestic production, and growth in exports. There's also a focus on innovation and involving women in defense roles, aiming for a self-reliant and developed India.

**Current status of India's defense ecosystem**

India was ranked 23rd among arms exporters by SIPRI, for the first time, in 2019.

**Investments in Defence Corridors:**

Tamil Nadu and Uttar Pradesh corridors attracted Rs 7,000 crore in investments.

**Growing Defence Production:**

The defence production target for 2023-24 is Rs 1,35,000 crore and India expects the value of its defence production to reach Rs 1,75,000 crore by 2025.

**Initiatives have been taken for the development of India's defense ecosystem****Policy Initiatives:**

Defence Acquisition Procedure (DAP) 2020 ensures 50% indigenous content in procurement.

**New Procurement Category**

Buy (Global-Manufacture in India): Encourages foreign companies to set up maintenance and manufacturing in India.

Positive Indigenisation Lists (5,000 items in this list) mandate domestic sourcing for certain defense items.

**Financial Investments:****The Swedish Arms Major SAAB's Announcement:**

First 100% FDI project for manufacturing Carl Gustav M4 rocket system in India.

**Increased Domestic Procurement Budget:**

From 40% to 75% of the total capital procurement budget dedicated to domestic procurement.

**Increasing Private Contributions:**

Private sector's defense production contribution reached Rs 21,083 crore, about 20% of the total.

**DRDO:****Review of Defence Research and Development Organisation (DRDO):**

A committee established for a holistic review to align DRDO with contemporary challenges.

**Building "Fit to Purpose" Capabilities:**

Focus on developing domestic defence R&D and innovation, with substantial budget allocation.

**Participation of women:**

Initiatives like Nari Shakti and the opening of Sainik Schools and the National Defence Academy to women have significantly increased the participation of women in the armed forces.

**Naval Platform Development:**

The development of naval platforms includes significant projects like the INS Vikrant, which is the largest warship built in India, showcasing advanced maritime capabilities.

Additionally, under Project 17A, frigates such as the INS Vindhyagiri have been launched, further enhancing India's naval strength with modern warships.

**Other Developments**

The Srijan Indigenisation Portal:

Facilitates the indigenisation of around 34,000 imported items.

**Way forward**

To propel India towards becoming a developed nation by 2047, it's essential to maintain momentum in indigenous defence production and elevate private sector involvement. Simultaneously, forging strong global strategic partnerships is key to securing India's place in the global defence value chains.

**Mains Point: Development of India's defense ecosystem****6. India dismisses allegations of abusive conditions at shrimp farms****Context:**

Shrimp farming in India



Recently, a human rights organization based in Chicago has accused India of human rights and environmental violations in the shrimp farming sector.

### Shrimp farming

Shrimp farming is the practice of cultivating shrimp in controlled environments such as ponds, tanks, or enclosures, typically in marine or freshwater settings. This is done through aquaculture methods to produce shrimp for human consumption.

### About Shrimp Farming in India

#### Second Largest producer

India is the second-largest producer of Whiteleg Shrimp (*Litopenaeus vannamei*).

#### Top Exporter to US

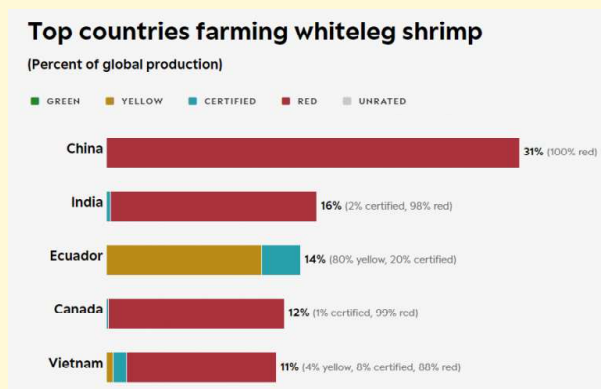
India has become one of the world's top shrimp exporters. Its share in the U.S. market increasing from 21% to 40% in 2022-23.

#### Shrimp dominates seafood exports

In 2022-23, Out of the \$8.09 billion exported seafood, shrimp's share was \$5.6 billion.

#### Top producing State

Andhra Pradesh alone account for almost 70% of India's shrimp output.



**Prelims Point: Shrimp farming in India**

**Mains point: Shrimp farming in India**

## 7. The weird tax club has a new entry from Toronto

### Context:

Unusual taxes around the world

The article discusses unusual taxes around the world. It mentions Toronto's proposed 'stormwater charge', historical examples like Russia's beard tax, and modern oddities like Switzerland's dog tax and Sweden's baby name tax. These taxes often aim to change behaviour or raise funds.

### The unusual taxes around the world

#### Historical Unusual Taxes:

##### Russia's Beard Tax:

In 18th century Russia, a tax was levied on beards to encourage a more Western, clean-shaven appearance.

##### Britain's Window Tax:

In the same era, British homes were taxed based on the number of windows, a strategy aimed at the wealthy.

#### Modern Unusual Taxes:

##### Toronto's 'Stormwater Charge':

This proposed tax in Toronto is based on the ratio of permeable to impermeable surfaces on properties, intending to mitigate flooding.

##### Switzerland and Germany's Dog Tax:

Depending on the breed and weight of the dog, owners can be taxed differently, with larger breeds like Bull Terriers and Great Danes incurring higher taxes.

##### Sweden's Baby Name Tax:

A tax is imposed on families choosing names that are deemed confusing, offensive, or hard to pronounce, such as the case of a family who named their daughter Metallica.

### Purpose of these taxes

#### Influence Behavior:

Taxes like Toronto's 'stormwater charge' aim to encourage changes in land use to reduce urban flooding.

**Raise Funds:**

The dog tax in Switzerland and Germany generates revenue for public provisions for pets.

**Promote Social Norms:**

Russia's beard tax was implemented to encourage a clean-shaven appearance, considered more modern at the time.

**Target Specific Groups:**

Britain's window tax was designed to tax the wealthy based on the number of windows in their homes.

**Regulate Choices:**

Sweden's tax on baby names like 'Metallica' is intended to control the naming of children with unusual or challenging names.

**Mains point: Unusual taxes around the world**

## 8. RBI defers exchange traded currency derivatives norms

**Context:**

Exchange traded currency derivatives (ETCD) norms

Recently, the RBI postponed its new norms for the exchange-traded currency derivatives (ETCD) market from April 5 to May 3.

**Exchange Traded derivative**

- Exchange-Traded Derivatives (ETDs) are financial instruments traded on regulated exchanges, offering transparency, liquidity, and centralized clearing mechanisms.
- They must follow regulations set by market regulators like the Securities and Exchange Board of India (SEBI) in India.
- They get their value from assets like stocks, bonds, commodities, currencies, or indices.

Examples:

- a. Futures contracts- They involve an agreement to buy or sell an asset, such

as wheat or oil, at a set price on a future date.

- b. Options contracts- Options contracts let the holder decide whether to buy or sell an asset at a set price within a specific timeframe, without being obligated to do so.

New norms say that

- Now, rupee-denominated currency contracts traded on the National Stock Exchange (NSE) and the BSE require underlying exposure.
- While traders aren't obligated to provide evidence of underlying exposure for positions up to \$100 million, they must confirm the presence of such exposure.

Note- The "underlying" in derivatives contracts refers to the order bill or receipt for exporters or importers, and supporting documents for remittances. For example, if an Indian exporter is expecting payment in US dollars in three months, this can be considered as the underlying contracted exposure.

- The RBI stated that participation in rupee-involved ETCs follows the Foreign Exchange Management Act (FEMA), 1999, and its regulations. These regulations allow currency derivative contracts involving the rupee, both over-the-counter (OTC) and exchange-traded, solely for hedging exposure to foreign exchange rate risks.

**Previous practice**

- Until now, currency traders had the liberty to engage in derivative market trading, whether they disclosed their underlying exposure or not.
- Currency derivatives serve as a means to hedge forex risk.

**Prelims Point: Exchange traded currency derivatives (ETCD) norms**

## 9. RBI introduces two new UPI features! From cash deposit to PPI wallet interoperability

### Context:

RBI proposed two new UPI features. RBI recently announced two new features for Unified Payments Interface (UPI) users, aiming to enhance ease of transactions and cash deposits.

### The new UPI features

#### Cash deposit facility through the use of UPI

Customers will now have the option to deposit cash at cash deposit machines (CDMs) in banks and ATMs using the UPI app. Presently, cash deposits at CDMs typically necessitate the use of a debit card, whether at banks or ATMs.

#### Allowing third-party apps to access UPI for Prepaid Payment Instruments (PPIs)

Currently, UPI payments from Prepaid Payment Instruments (PPIs) require using the web or mobile app provided by the PPI issuer. It's now suggested to allow using third-party UPI apps for making UPI payments from PPI wallets.

### Other measures announced by RBI

#### Permit FPIs to invest in Sovereign Green Bonds (SGrBs)

To encourage broader participation of non-residents in Sovereign Green Bonds (SGrBs), the RBI has decided to authorize eligible foreign investors in the International Financial Services Centre to invest in these bonds.

Currently, foreign portfolio investors (FPIs) registered with SEBI can invest in Sovereign Green Bonds (SGrBs) through various investment routes available for FPIs in government securities.

#### Mobile app for Retail Direct scheme

The RBI will introduce a mobile app for its Retail Direct scheme, launched in November 2021. This scheme allows individual investors to hold gilt accounts with the RBI and invest in government securities.

Note- Gilt Account means an account opened and maintained for holding Government securities.

### Mains Point: two new UPI features

### Prelims Point: Sovereign Green Bonds, Gilt Account

## 10. Express View on PM's 'guarantee' for Indian economy: Goal worth setting

### Context:

Importance of Per Capita GDP

The article discusses India's economic growth under present government. It moved from the world's 10th largest economy to 5th, but the growth rate was slower than before.

### India's economic growth during the last 10 years

- Over the last 10 years, India's economy has grown, moving from the 10th to the 5th largest globally.
- However, the annual GDP growth rate averaged 5.9% under the present Indian government, slower than the previous 6.8% under the previous Indian government.
- Despite this growth, India's per capita GDP remains low at just over \$2,500, compared to China's \$13,000.

### Per Capita GDP importance

#### Measure of Living Standards:

Per capita GDP indicates the average income per person, directly relating to the population's living standards.

#### Beyond Poverty Elimination:

It provides a more comprehensive economic goal than just reducing poverty, focusing on overall improvement in quality of life.

#### Policy Making Tool:

Setting targets for per capita GDP helps policymakers in planning and implementing strategies for sustainable and inclusive economic growth.

**Long-term Vision:**

India's aim to quadruple its per capita GDP by 2047 is an example of using these targets for long-term economic planning and development.

**Should be done**

- Prioritize policies that boost income and quality of life, not just the overall economy size.
- Aim for a broader development than just GDP size, ensuring benefits reach all sectors of society.
- Address the gap in economic growth compared to countries like China; India's per capita GDP growth has lagged behind.
- Align goals with developed nation status: Strive to reach the 'high income' status as defined by the World Bank, moving beyond the current 'lower-middle income' classification.

**Prelims Point: Importance of Per Capita GDP**

**Mains Point: Importance of Per Capita GDP**

### 11. Bets from big global VC firms fall 80% in India in 2023 amid funding winter

**Context:**

Funding Winter

Investments from large foreign investors in Indian startups has declined by 80% in 2023. This is because of Indian startup ecosystem's funding winter.

**About Funding Winter**

It is a term used to describe a period of reduced capital inflows to startups. It is a cyclical effect that happens due to multiple factors which impact the free flow of investments in the market.

**Duration**

The duration of a funding winter is unpredictable. It may last for a long time depending on the multiple factors acting upon it.

**Factors responsible for funding winter**

It can take place due to geopolitical unrest, or monetary policies and financial irregularities in a country. It can also be centric to the relevant sectors.

**Effect of Funding Winter**

- 1) It is difficult to raise funding and achieve sky-high valuations during funding winter for founders.
- 2) It requires business owners to reset their priorities in terms of profit maximization.
- 3) During funding winter, start-ups take measures to save their working capital.
- 4) Expenditures like the advertisement expenses, capital expenditures, and expansion plans are put on hold in order to increase the sustainability of the firm.

**Note-****Capital Expenditure**

It is money invested by a company to acquire or upgrade fixed, physical or non-consumable assets.

**Prelims Point: Funding Winter**

### 12. Unauthorised FX platforms: Need enhanced vigilance by banks

**Context:**

Electronic Trading Platforms (ETP)  
Reserve Bank of India (RBI) Governor has raised concerns over unauthorised Electronic Trading Platforms (such as forex trading platforms) and has asked banks to maintain vigil against such illegal activities.

**About electronic trading platforms (ETPs)****Electronic Trading Platforms**

Electronic Trading Platforms (ETPs) are digital systems where transactions involving various eligible instruments such as securities, money market instruments, foreign exchange instruments, or derivatives can be executed.



It is distinct from traditional stock exchanges.

#### Issues related to ETPs-

- a) Unauthorized ETPs engaged in false advertising, promising forex trading opportunities to people living in India.
- b) Scams and significant financial damage to individuals by the agents of these unauthorised ETPs who enticed users with promises of lucrative returns from forex trading or investment plans.

#### Actions Taken:

- a) RBI framework for authorisation of electronic trading platforms 2018 (ETPs) for financial market instruments regulated by it.
- b) RBI maintains and updates a list of unlicensed forex trading platform and creates awareness among the public regarding the same.

#### Prelims Point: Electronic Trading Platforms (ETP)

### 13. NBFCs' co-lending book set to touch Rs 1 lakh crore

#### Context:

NBFC co lending book

The co-lending book of non-banking finance companies (NBFCs) is projected to hit Rs one lakh crore by June 2024 as per CRISIL Ratings.

#### About the 'Co-Lending Model'

##### Introduction

The Reserve Bank of India (RBI) introduced the Co-Lending Model (CLM) in September 2018 to encourage joint loans by banks and Non-Banking Financial Companies (NBFCs) for priority sectors.

##### Extension of credit to priority sectors

This model promotes collaboration between banks and non-bank financial entities to extend credit to the priority sector, which includes agriculture, MSMEs, social infrastructure, and economically weaker sections.

#### Improve Credit Access

The Co Lending Model aims to improve credit access to traditionally under-served sectors, ensuring more affordable loans.

#### About NBFC

NBFC is a company that provides loans, leases, insurance, and other financial services. It is registered under the Companies Act, 1956.

There are two types of NBFCs based on their liability structure:

- a) Deposit-taking NBFCs (NBFC-D) accept deposits from customers and use that money to provide loans and other financial services.
- b) Non-deposit taking NBFCs (NBFC-ND) don't accept deposits from customers but raise funds through other means, such as issuing bonds or borrowing from banks.

#### Prelims Point: NBFC co lending book

### 14. Can the rupee go global without convertibility?

#### Context:

Globalisation of Indian rupee

Prime Minister has recently asked the Reserve Bank of India (RBI) to prepare a 10-year strategy to make the Indian rupee a globally "accessible and acceptable" currency. Globalisation of Indian rupee

#### Advantages of globalized currency

- 1) The overseas demand for globalized currency for trade and reserves would cheapen credit within the country.
- 2) After attaining global currency status, there would be more demand for rupee denominated bonds. This will push their yields down, which will ensure availability of funds at lower rates.

#### The hurdles in the globalization of Indian currency

##### Lack of full rupee convertibility

India will have to turn the rupee fully convertible to make it a global currency. Currently, Indian currency is partially convertible.

### Asian currency crisis

Policy makers were worried after the Asian currency crisis of 1997. Many open economies suffered from capital flight. Since then, India has maintained restrictions on converting rupees into foreign currencies. There's an annual limit on conversion and specific channels for settling commercial trades. Steps can be taken to make to ensure globalization of Indian currency

### Fiscal discipline

It is important to ensure that India's currency doesn't lose its value due to inflation. This requires maintaining fiscal discipline.

### Robust banking system

India needs a strong banking system that can withstand shocks. This requires transparency and efficiency throughout the financial sector.

### External balance stability

There should be stable external balances to ensure sustainability. India must prevent its trade gap from widening due to unforeseen events

### Role of RBI

It is important that the market sets the external value of the rupee, with the RBI playing a non-distortive role.

### The way forward

#### Leveraging Technology

Technology may give RBI's e-rupee an advantage as a central bank digital currency (CBDC) for global use. It should be designed not only for low costs but also for ensuring maximum privacy.

#### Expansion of e-rupee usage

Indian diaspora should be encouraged to use e-rupee for making low-cost cross-border transfers. However, it is

important to ensure that this expansion is not affected by geopolitical sanctions.

### Ease of programming of e-rupee

It is directly issued by RBI and doesn't involve intermediary risks. Thus, it may attract international users if it is able to offer users an easy way to program it. For ex-for making routine payments. This is indeed one of the unique features of CBDC software.

Currently, the e-rupee is only an experiment, with online bank-to-bank UPI transfers being given too much importance. However, it's also RBI's best bet for a global play

**Prelims point: Globalisation of Indian rupee**

**Mains Point: Globalisation of Indian rupee**

## 15. Indo-Pacific Economic Framework for Prosperity (IPEF) to organise Clean Economy Investor Forum in Singapore

### Context:

IPEF's Clean Economy Investor Forum Recently, the IPEF organized a Clean Economy Investor Forum in Singapore.

### About IPEF Clean Economy Investor Forum

- The IPEF Clean Economy Investor Forum is one of the initiatives under the IPEF. The Forum aims to mobilize investments into sustainable infrastructure, climate technology and renewable energy projects.
- It brings together the region's top investors, philanthropies, financial institutions, innovative companies, start-ups and entrepreneurs.

### Managed by:

Invest India (India's National Investment Promotion Agency).

### Available opportunities for the Indian industry

The Forum will have opportunity for the Indian industry in the two following track:

### Climate Tech Track:

This track is open for top climate tech companies and startups from member countries, including India, to present their innovations to global investors. It focuses on recognizing leading enterprises in climate technology.

### Infrastructure Track:

This track highlights ready-to-invest sustainable projects in energy (solar, wind, hydrogen), transport (EVs, charging stations), and waste management, to be showcased at the 2024 Forum in India.

### About Indo-Pacific Economic Framework for Prosperity (IPEF)

The Indo-Pacific Economic Framework for Prosperity (IPEF) is an economic initiative launched by U.S.A President Joe Biden in 2022.

### Objective:

It provides a platform for countries in the region to collaborate on advancing resilient, sustainable, and inclusive economic growth, and aims to contribute to cooperation, stability and prosperity in the region.

### Members:

It has 14 partners – Australia, Brunei Darussalam, Fiji, India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, U.S.A and Vietnam.

### Nodal agency:

Department of Commerce for the IPEF engagements

The IPEF comprises four pillars of cooperation namely:

Trade, Supply Chain, Clean Economy and Fair Economy.

### Prelims Point: IPEF's Clean Economy Investor Forum

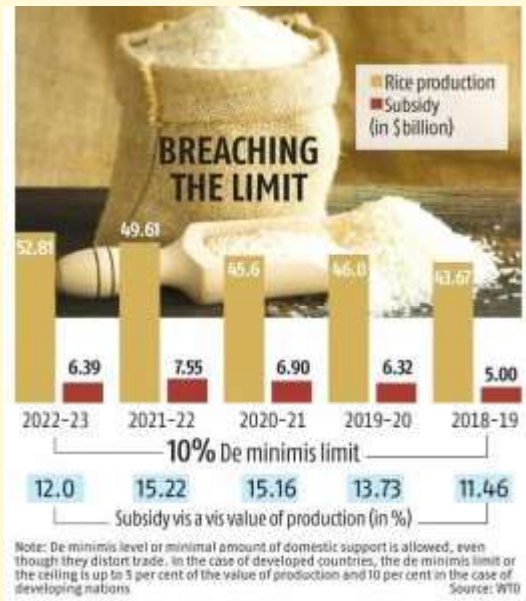
### 16. Fifth time in a row: India invokes the peace clause for rice in WTO

#### Context:

Peace Clause at WTO

India has invoked the peace clause at the World Trade Organization (WTO) for the fifth consecutive time. This is because India has breached the prescribed subsidy limit for rice offered to its farmers.

### About Peace Clause



### Introduction

At the Bali ministerial meeting in December 2013, WTO members agreed to temporarily implement a mechanism known as the Peace Clause. They also pledged to work on a permanent solution through negotiations.

### Description

According to global trade rules, a WTO member country's food subsidy bill shouldn't exceed 10% of the value of production, based on the reference price of 1986-88. Subsidies over and above the prescribed ceiling are seen as trade-distorting.

### Concerns

India has been complaining that 10 per cent subsidy ceiling is calculated on the basis of the reference price of 1986-88. This reference price has become outdated long ago.

### Note-De minimis

This is the minimal amounts of domestic support that is allowed, even

though it may distort trade. In case of developed countries, the de minimis limit or ceiling is up to 5 % of value of production and 10 % in case of developing nation.

### **Prelims Point: Peace Clause at WTO**

## **17. India can learn from Japan's 'Womenomics' reforms**

### **Context:**

Womenomics reforms- Lessons for India

Despite Japan facing challenges such as low birth rates, a shrinking population, and slow economic growth, reforms promoting "womenomics" were implemented during the "Abenomics" (Tenure of PM Shinzō Abe) period. Now, these reforms are yielding positive outcomes

The women's labour force participation rate (WLFPR) in Japan has increased by ten percentage points, rising from 64.9% in 2013 to 75.2% in 2023. This marks the fastest growth in Japan's WLFPR in recent decades and stands as the highest among G7 countries over the past decade. It's estimated that this rise in women's labour force participation rate could boost Japan's GDP per capita by 4% to 8%.

### **Following reforms were undertaken by Japan to enhance participation of women in labour force**

#### **Investment in care economy**

The government's investment in expanding daycare capacity from 2.2 million in 2012 to 2.8 million in 2018 has decreased daycare waiting lists. Further, in 2023, Japan's government announced an additional investment of \$26 billion for childcare measures from 2023 to 2026.

#### **Rebalancing of gender norms**

From 2022, the government has introduced greater flexibility in paternity leave provisions such as

reduced notice periods, and allowing men to break up their paternity leave. This has resulted in boosting paternity leave uptake from 2 per cent in 2012, to 17 per cent in 2023.

Lessons that India can learn from Japan to boost its Female Labour Force Participation Rate

- 1) India can also invest in long-term public support for care infrastructure and services, particularly childcare.
- 2) India can enhance paternal leave uptake among men by adopting an employer-led approach that dispels gender stereotypes around care work. However, this would also require change in people's mindsets.
- 3) India can invest in various care services like childcare, elder care, domestic assistance, and long-term care for those with high needs. This helps decrease dependency and taps into the growing market for elder care services. For example, Japan has collaborated with the private sector to invest in affordable senior living and care. With India's elderly population expected to double by 2050, it can also make similar investments in elder care infrastructure.

### **Some policy changes that can be made by India to improve its Female Labour Force Participation Rate**

There is a need to adopt a five-pillar strategy to unlock business opportunities in India's care economy, such as-

- 1) There should be formulation of gender-neutral and employee friendly paternity leave policies.
- 2) Government should provide subsidies for availing/providing care services.
- 3) Public and private sector should enhance investment in care infrastructure and services.
- 4) There should be skill development programmes for care workers.



- 5) Government should pay attention to quality assurance for care services and infrastructure.

**Mains Point: Womenomics reforms**

**18. Borrowing to consume**

**Context:**

Concerns related to savings in India  
The article discusses how India saves a lot of money, but most is not in banks and is instead in things like gold and property. This makes borrowing expensive for businesses and the government. Also, households are borrowing more, often for spending rather than investing, which could harm the economy in the long term.

**Current state of savings in India**

**High rate of domestic savings:**

India's savings rate has historically been strong, peaking at 35% of GDP in 2012 and currently around 30%.

Recent trends show a significant increase in household borrowing, from 3.1% of GDP in 2019 to an expected 4.8% in 2024, primarily for consumption, which diverts funds from investment

**Preference for Physical Assets:**

A significant portion of these savings, over 60% of household gross domestic savings, is invested in physical assets such as housing, land, agriculture, and gold.

**Major concerns related to savings in India**

**Reduced Funds for Borrowing:**

The preference for physical savings means less money is available in the financial system for borrowing by the government and organized sectors.

**Increased Cost of Capital:**

With fewer financial savings, the cost of borrowing increases for businesses and the government, impacting economic growth and investment.

**Interest Rate Management:**

To manage this, the Reserve Bank of India (RBI) keeps interest rates low, which affects the value of financial savings and encourages more physical savings.

**Middle-Income Trap Concern:**

The low ratio of mortgage lending and high ratio of consumption-based borrowing indicate a narrow base of market-based real estate activity, especially in rural areas. This consumption-oriented debt pattern makes investment capital more expensive and could potentially lead to a middle-income trap, where economic growth stagnates, and the country struggles to move to a higher income bracket.

**Way forward**

**Increase Financial Savings:**

Encourage the growth of financial savings over physical ones to ensure more capital is available for economic development, reducing the reliance on administratively managed interest rates.

**Managing Household Debt:**

Government policies should focus on curbing non-essential borrowing and promoting savings.

**Strengthen Financial Policy:**

Adapt the financial repression and credit-rationing systems to handle the increased household debt effectively and prevent further rise in capital costs.

**Focus on Mortgage Debt:**

Support mortgage lending to channel debt towards housing, which is lower at 10% of GDP compared to non-mortgage debt at 25% of GDP, promoting long-term financial stability.

**Mains Point: Concerns related to savings in India**

## 19. Decoding state budgets: Can growth projections keep pace with reality?

### Context:

Decoding State Budgets

In India, the central government's finances are closely examined whereas state governments' fiscal health often receives less attention. However, there is a renewed interest in the financial status of states because of the rise in market borrowing by state governments.

### Publicly available information on state government finances

#### State Budgets

They are a good source of publicly available information on state government finances.

#### CAG

There is publication of monthly fiscal indicators by the CAG. This is useful in assessing emerging trends in state finances.

#### Other important source

They are states' usage of ways and means advances and overdraft facilities extended by the Reserve Bank of India.

### Analysis of the 2024-25 budgets or votes on account (VoA)

An analysis of the data suggests that states expect a 9.2 % growth in their combined revenue receipts this year.

#### Revenue side of states-

- A) About half of the total income for states comes from their own taxes.
- B) Another 40-45 per cent of the revenues of the states comes from transfers by the Centre, taxes and grants. States saw an increase in their revenues due to higher-than-expected tax sharing for three years in a row during FY2022-24.

#### Expenditure sides of states-

States plan to increase their revenue spending by 7% and their capital spending by 11%. However, due to elections this year, there will be less

capital spending by states till final budget is presented in July 2024.

### Issues with grants from the Centre to the states

#### Uncertainty in transfer of additional devolution-

In many cases, states may have deviated from their planned borrowing because they had no prior knowledge about the timing of inflow of such additional devolution by Centre.

#### Multiple factors

There are many factors on which center gives grants to states for Centrally Sponsored Schemes (CSS). For ex-submitting utilization certificates. Thus, actual grants from the Centre to the states differ a lot from what the states expect.

#### Reason behind larger market borrowing by states

- 1) States may have preferred to hold larger cash before the model code of conduct period, driving some states to expand their borrowings.
- 2) Some states may have decided to utilize more of their borrowing limit for 2023-24 before the year ends.

### Mains Point: State Budgets

## 20. India to face most impact if high U.S. interest rates persist

### Context:

How Interest Rates in US impacts India  
The US Federal Reserve has decided to hike interest rates that will impact the Indian economy.

## Interest Rates in US impact India in the following way

**Higher for longer**  
India could face significant economic pressure if the EU and the U.S. delay cutting interest rates beyond 2024



- ADB expects currency depreciation will provide some gains for India due to increased export competitiveness
- Positive effects of depreciation could turn negative in 2025, 2026 once monetary easing begins in U.S. and EU
- It sees growth at 7% in FY25, before recovering to 7.2% in FY26

1. With the U.S. Federal Reserve and the European Central Bank maintaining 'higher for longer' interest rates, the consequent strength of the U.S. dollar and the euro leads to an initial depreciation of emerging economies' currencies, including the Indian rupee.
2. The depreciation of the rupee directly affects India's import, increasing the prices of imported goods, particularly oil and other commodities that are crucial for India's economy. This would add approximately 0.4 percentage points to India's inflation through 2024 and 2025 which would exacerbating the cost of living and production costs within the country.
3. As per ADB's projections, India's GDP growth may slow slightly (by under 0.2 percentage points in 2025) compared to baseline projections. This is partly due to increased costs of borrowing and investments, as global capital shifts towards higher yielding U.S. assets, reducing the amount of foreign investment flowing into emerging markets like India.
4. On the positive side, a weaker rupee could make Indian exports more competitive on the global market, potentially boosting export volumes. This could add about 0.05 percentage points to India's GDP growth this year. However, this effect might reverse in 2025 and 2026 as global monetary

conditions stabilize and the rupee potentially strengthens, making exports less competitive again.

5. Higher interest rates in the U.S. could lead to a wider gap between U.S. and Indian interest rates, affecting the flow of capital. India might have to increase its own interest rates to manage inflation and prevent further depreciation of the rupee, which could have its own set of consequences on the domestic economy.

**Prelims Point: Interest Rates in US impacts India**

**Mains Point: Interest Rates in US impacts India**

# ENVIRONMENT

## 1. Genetic profiling of captive elephants of Kerala to begin shortly

### Context:

#### Genetic profiling

The genetic profiling of around 400 captive elephants in Kerala will start soon. The Wildlife Institute of India (WII) is conducting the profiling to include the elephants' information in a national database-Gaja Suchana.

#### About Genetic profiling

Genetic profiling, or genetic testing, involves examining an individual's DNA to detect variations or mutations linked to traits, diseases, or conditions.

#### Significance

This analysis offers insight into individual genetic composition and serves multiple purposes, including assessing disease susceptibility, tracing ancestry, and informing personalized medical care.

## Genetic profiling of Captive elephants in Kerala

### Reason for genetic profiling

Kerala, which was previously known for having the largest captive elephant population, is experiencing a significant decline in numbers.

### Gaja Suchana mobile app:

- The Wildlife Institute of India has developed a mobile application called Gaja Suchana, allowing officials from all state forest departments to access the data.
- This initiative aims to monitor the movement of captive elephants within and between states.
- The database will aid in identifying elephants lacking valid ownership certificates.

## About Wildlife Institute of India (WII)

It is an internationally acclaimed Institution, which offers training program, academic courses and advisory in wildlife research and management.

Established in 1982 as an attached office of the Ministry of Environment and Forests. Subsequently, it was granted autonomous status in 1986.

### Mandate

It carries research in areas of Biodiversity, Endangered Species, Wildlife Policy, Wildlife Management, Wildlife Forensics, Spatial Modelling, Eco-development, Habitat Ecology, Climate Change, Forensics, Remote Sensing and GIS, Laboratory, Herbarium, and an Electronic Library are the spheres of research too.

### Prelims Point: Genetic profiling

## 2. Clean Energy Transitions Programme 2023

### Context:

Clean Energy Transitions Programme Recently, the International Energy Agency (IEA) launched the Clean Energy Transitions Programme annual report 2023.

### About the Clean Energy Transitions Programme

- It is the flagship programme launched by IEA in 2017 for taking action to achieve a clean energy transformation worldwide.
- The program utilizes the Agency's expertise and influence to offer analysis, technical assistance, and capacity building to developing countries for Clean Energy transition.



3. The CETP's work is structured across three pillars of activity:
- i) supporting emerging and developing countries to establish clean energy transition goals, in line with the objectives of the 2015 Paris Agreement and the Sustainable Development Goals established by the United Nations.
  - ii) facilitating coordination among multilateral organisations such as the Group of 20 (G20) and UN-affiliated collaborations.
  - iii) to enable and accelerate clean energy transitions at global level.

### About IEA

It was established in 1974 as an autonomous intergovernmental organization under the OECD framework.

#### Aim:

To ensure reliable, affordable and clean energy for its member countries and beyond.

#### Headquarters:

Paris, France.

#### Focus areas:

It has four main areas of focus:

- a) Energy security
- b) Economic development
- c) Environmental awareness and
- d) Engagement worldwide.

#### Members:

It has 31 member countries and eight association countries. India became an associate member in 2017.

#### Reports:

World Energy Outlook report is released annually.

### Prelims Point: Clean Energy Transitions Programme

### 3. Protect India's scrublands to save the caracal: Dharmendra Khandal & Ishan Dhar

#### Context:

Caracals wild cat

It has been observed that caracal is on the verge of extinction and thus needs conservation.

#### About caracal

- 1) It is a medium-sized wild cat native to Africa, Middle East, Central Asia, and South Asia including India.
- 2) In India, Caracal is called Siya gosh, a Persian name that translates as 'black Ear'.
- 3) A Sanskrit fable (short story) exists about a small wild cat named deergha karn or 'long-eared'.

#### Characteristics

- 4) The caracal has long legs, a short face, long canine teeth. It has distinctive ears that are long and pointy with tufts of black hair at their tips.
- 5) It is an elusive, primarily nocturnal animal. Its sightings are not common.
- 6) It is a carnivore. It typically preys upon small mammals, birds, and rodents.
- 7) It has traditionally been valued for its flexibility and its extraordinary ability to catch birds in flight.

#### Habitat

- 1) Earlier they could be found in arid and semi-arid scrub forest regions of 13 Indian states.
- 2) The most significant potential habitat for caracals is in Rajasthan, followed by Gujarat, Madhya Pradesh, Haryana, Uttar Pradesh and Maharashtra.

**Threats** Large-scale hunting, illegal trading and loss of natural habitats are major threats.

#### Conservation status

IUCN Red List: Least Concern

#### Wildlife Protection Act, 1972:

Schedule I

#### CITES: Appendix I



**Prelims Point: Caracals**

**4. Climate engineering carries serious national security risks – countries facing extreme heat may try it anyway, and the world needs to be prepared**

**Context:**

Climate engineering - Potential & Concerns

African countries have called for a moratorium on climate engineering at the recently held United Nations Environment Assembly in March 2024. Further, nations like United States have highlighted the need for scientific group to undertake studies regarding potential risks and benefits of Climate engineering.

**Negative impact of climate change**

- 1) Heat records are routinely broken.
- 2) Wildfire seasons have become more extreme.
- 3) There has been an increase in the strength of Hurricane.
- 4) Due to rise in sea level, small islands national and coastal areas are submerging.
- 5) Climate change can pose a threat to food and energy security. This may lead to climate-induced migration and can threaten the security of any nation.

**About climate engineering**

**Description**

It is a set of proposed actions to deliberately change the climate. It is also

called geoengineering, sunlight reduction methods or solar climate intervention.

**Strategy**

- 1) It will mimic the cooling effects of large volcanic eruptions by placing large amounts of reflective particles in the atmosphere.
- 2) It will make low clouds over the ocean brighter. This would reflect a small amount of sunlight back to space to cool the planet.

**Potential advantages of climate engineering**

**Preventing temperature rise**

Activities like fossil fuel use and industrialization are currently emitting 37 billion tons of carbon dioxide into the atmosphere annually. However, existing carbon dioxide removal projects that includes growing trees and direct air capture devices remove only 2 billion tons of carbon dioxide. Thus, it may take a long time to achieve the target of Net Zero emissions. Climate engineering may help in the interim.

**Climate Modification**

It can allow countries with increasingly dangerous heat waves to cause deliberate cooling. For ex- Australia is currently exploring the feasibility of rapidly cooling the Great Barrier Reef to prevent its demise.

**Concerns associated with climate engineering**

**Regional conflicts**

The climate doesn't respect national borders. So, a climate engineering project in one country may affect temperature and rainfall in neighboring countries. The countries may blame climate engineering for extreme events such as hurricanes, floods and droughts without any scientific evidence.

**Endanger interest of poor countries**

Climate change can leave the poorest regions most vulnerable to harm, and climate engineering should not

accentuate that harm. Poorer countries may get negatively impacted by climate engineering solutions of rich countries.

### High Cost

Building a fleet of airplanes to carry megatons of reflective particles into the stratosphere each year is a very costly process. It will be difficult to get funding for this scientific project.

### Limitation of climate models

Current information about climate engineering relies heavily on climate models. However, they cannot address questions of geopolitics and conflict.

Climate engineering may provide solutions to the challenges posed by climate change. Nevertheless, there is a need for more research that may help policy makers to make informed decisions.

**Mains Point: Climate engineering**

**Prelims Point: Climate engineering**

### 5. Criollo: This breed of cattle developed in the New World can withstand climate change, say Irish scientists

#### Context:

Criollo Cattle breed capable of withstanding climate change

Recently, Irish researchers found that Criollo cattle have adapted well to climate change by thriving in hot and humid conditions, a trait they have developed over many years.

#### About Criollo cattle

##### Origin

1. Originating in the Americas, Criollo cattle descended from cattle introduced by Spanish explorers during colonization.
2. The First cattle in the Americas, from La Gomera in the Spanish Canary Islands, were transported to Hispaniola (now Haiti and the Dominican Republic) during Christopher Columbus's second voyage in 1493.

### Physical attributes

1. Compact-bodied cattle of small to medium size.
2. Sporting short, glossy coats, typically found in shades like black, brown, or red.

### Adaptability

Capable of thriving in various climates, including tropical and subtropical regions, as well as hot and humid areas, and arid, rugged terrains.

### Disease Resistance

Developed natural immunity to common diseases like ticks and parasites in their native habitats.

### Significance

Criollo cattle serve as a sustainable food source, providing meat and dairy for local communities, while also contributing to sustainable agriculture and conservation efforts in the Americas.



**Prelims Point: Criollo Cattle breed**

**Mains Point: Cattle breed capable of withstanding climate change**

### 6. A battle to save Ladakh, and all of humanity

#### Context:

Fragility of Himalayan Ecosystem

Ramon Magsaysay award winner and climate activist Sonam Wangchuk has recently announced 21-day climate fast to highlight the larger issue of the fragility of the Himalayan ecosystem.

Ladakh comprises 97% indigenous tribes and tribes depend on farming and animal rearing for a livelihood.

Apart from border issues, it also faces the damaging effects of climate change through floods, drought, landslides, greenhouse gases, and other pollutants.

### Some of the recent disasters in the Himalayan region

There have been several disasters in the Himalayan region since 2010 causing loss of lives and livelihoods.

For ex-

- A) In 2013, a cloudburst in the upper reaches of the Himalayas led to flash floods at Kedarnath that claimed 6,000 lives
- B) In January 2023, disaster struck Joshimath, when water gushed down a lower slope of the mountain, submerging parts of the town.
- C) In November 2023, 41 workers were trapped in the collapsed Silkyara tunnel project in the Himalaya.

### The reasons behind these tragic events

#### Infrastructure boom

Since Ladakh became a Union Territory, many big infrastructure projects have been launched. For ex- the Zojila tunnel (14.15 km long), the Kargil-Zaskar National Highway (230 km long) etc. Incidentally, all these areas are vulnerable to climate change-related disasters.

#### Disregard for scientific warning

Despite continued warning from geologists and ecologists, Uttarakhand, where all these tragedies occurred, has started many infrastructure projects. Further, an expert committee constituted by the Supreme Court has suggested limiting the number of pilgrims visiting the Char Dam Himalayan shrines. However, pilgrim numbers have only increased every year.

#### Lack of due diligence

There is no proper scientific risk assessment, safety measures and geological and seismic analysis before starting infrastructural projects.

#### Role of NMSHE

National Mission for Sustaining the Himalayan Ecosystem (NMSHE) was started with the objective to develop a capacity to scientifically assess the vulnerability of the Himalayan region to climate change and continuously assess the health status of the Himalayan ecosystem. However, it could not fulfill its objective effectively.

Pursuit of development should not upset the fragile balance in the Himalayan ecosystem and its biodiversity.

### Mains Point: Fragility of Himalayan Ecosystem

#### 7. How invasive species threaten natural ecosystems

##### Context:

Invasive alien species threatening Natural ecosystem

In order to manage the rising chital population on Ross Island (now Netaji Subhash Chandra Bose Island), the Andaman and Nicobar administration has sought assistance from the Wildlife Institute of India.

##### About Invasive Alien Species:

- Invasive alien species (IAS) are the species which are introduced and/or spread outside their natural past or present distribution threatens biological diversity.
- These include animals, plants, fungi, and even microorganisms. It can influence all kinds of ecosystems.
- Characteristics of Invasive Alien Species is described as "arrive, survive and thrive."

These species are introduced either through natural or human intervention. They survive on native food resources, reproduce at a fast rate and edge out native species in the competition over resources.

##### Example of Invasive Alien Species in India:

The list of invasive wildlife in India is dominated by certain species of fish such as the African catfish, Nile tilapia,



red-bellied piranha, and alligator gar, and turtle species such as the red-eared slider.

### Impact on Flora:

In habitats where there is no competition, invasive species can dominate the entire ecosystem. For ex- The increased population of chital in the Andamans has affected the regeneration of native vegetation, as the deer are known to consume seeds and seedlings.

### Impact on Fauna:

Invasive species act as disruptors in the food chain and disturb the balance of the ecosystem. For ex- In Keoladeo Park, Bharatpur in Rajasthan, the African catfish has been known to prey on waterfowls and migratory birds as well.

### Impact on economy:

In September 2023, the IPBES reported that 37,000 alien species have been introduced globally, adding around 200 new species annually and costing over \$423 billion each year in economic damages. For ex- the cotton mealybug from North America has significantly impacted India's cotton yields.

## Mains Point: Invasive alien species threatening Natural ecosystem

### 8. IISc researchers design novel hydrogel to remove microplastics from water

#### Context:

Novel hydrogel removes microplastics from water

Researchers at the Indian Institute of Science (IISc) have developed a sustainable hydrogel specifically designed to tackle the menace of microplastics in water.

#### About hydrogel

- The hydrogel utilizes a complex interpenetrating polymer network (IPN) architecture composed of chitosan, polyvinyl alcohol, and polyaniline.

- This structure is infused with nanoclusters of copper substitute polyoxometalate (Cu-POM), which act as catalysts under UV light irradiation to degrade microplastics.

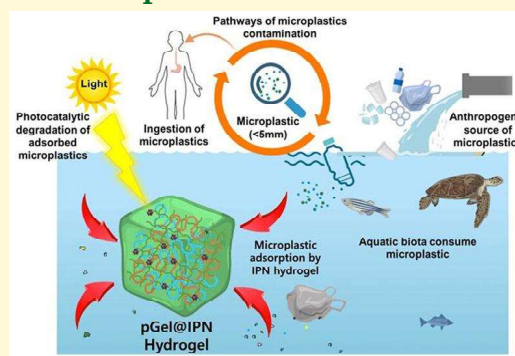
- The synergistic effect of the polymers intertwined with the catalytic nanoclusters enhances the hydrogel's stability across various temperatures and also enables it to adsorb and degrade large quantities of microplastics efficiently.

- This hydrogel efficiently removes about 95% and 93% of two different types of microplastics in water, highlighting its potential as a significant solution in water purification technologies.

- The hydrogel could last for up to five cycles of microplastic removal without significant loss of efficacy.

- This hydrogel can also be converted into carbon nanomaterials that are capable of extracting heavy metals, such as hexavalent chromium, from contaminated water.

### About Microplastic



- Microplastics are small plastic particles in the environment that are generally smaller than 1 mm to the 1 micrometer range. Microplastics can be formed by fragmentation of large plastic waste material.

### Danger of Microplastics to humanity and overall biodiversity:

- Microplastics pass the filtration and treatment processes for wastewater resulting in significant global impacts on wildlife from marine environment pollution.

- b) Microplastics kill biodiversity and other organisms' fish before they reach reproductive age. It lead to stunted growth and behaviour change in some organisms.
- c) Large amounts of plastic are not recycled and end up in landfills, posing a threat to human health.
- d) The durable properties of plastics make them persistent and slow to degrade in the environment entering the food chains. It holds the potential for both bioaccumulation and biomagnification.

**Prelims Point: hydrogel removes microplastics from water**

**Mains Point: hydrogel removes microplastics from water**

## 9. Mange outbreak reported among Asiatic wild dogs in Mudumalai

### Context:

Manga disease among Asiatic wild dogs

The forest department is monitoring an outbreak of mange among a pack of Asiatic wild dogs in the Mudumalai Tiger Reserve (MTR) in the Nilgiris.

### About Manga disease

It is a skin disease of animals caused by mite infestations.

### Caused by

Sarcoptes scabiei mite, which also causes human scabies.

### Contagious

1. They are transmitted between animals by direct contact and by objects that have been in contact with infected animals.
2. Humans can contract certain types of mange from infected dogs and can temporarily infest human skin, leading to itching and discomfort.

### Symptoms

Inflammation, itching, thickening of the skin, and hair loss.

### Prevention

Prevention includes maintaining a clean environment, disinfect belongings, and

avoid contact with infected or stray animals.

### Treatment

Treatment options aim to eliminate the mites, alleviate symptoms, and promote skin healing. Topical medications are commonly prescribed to target localized mange areas.

### About Asiatic Wild dogs

- 1) It is a member of the family Canidae and the class Mammalia.
- 2) Asiatic Wild dogs also known as Dhole (Cuon alpinus).

### Distribution

- 1) It is an apex social carnivore in the tropical forests of South and Southeast Asia.
- 2) In India, Dholes are found in three clusters namely the Western and Eastern Ghats, central Indian landscape and North East India.
- 3) According to a 2020 study, Karnataka, Maharashtra and Madhya Pradesh rank high in conservation of dhole.

### Habitat

Dense jungles, steppes, mountains, scrub forests, and pine forests.

### Threat

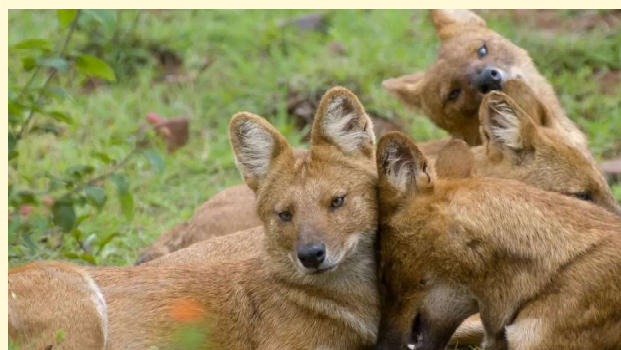
Competition and disease transmission from domestic dogs are a threat to this species.

### Conservation status

IUCN Status: Endangered

CITES: Appendix II

Wildlife Protection Act: Schedule II



**Prelims Point: Manga disease among Asiatic wild dogs**

# SCIENCE AND TECHNOLOGY

## 1. Statins

### Context:

A study by a group of researchers in China has found that administering ursodeoxycholic acid (UDCA) can stave off the tendency of statins to induce glucose intolerance and diabetes.

### About Statin:

- Statin is a medicine prescribed to people with a high risk of cardiovascular disease.
- They are commonly prescribed cholesterol-lowering drugs and are also known as HMG-CoA reductase inhibitors.
- High cholesterol can lead to arterial plaque accumulation, which may harden or narrow arteries, increasing the risk of heart attacks or strokes due to sudden blood clots.
- Statins are capable of lowering LDL (low-density lipoprotein or “bad” cholesterol) by up to 50% or more, thus mitigating artery blockage and enhancing blood flow.
- These drugs are associated with a decreased risk of heart disease, stroke, and certain blood clots.
- However, many studies have found statins could increase the risk of developing diabetes.

### UPSC Prelims point: Statins

## 2. Havana syndrome

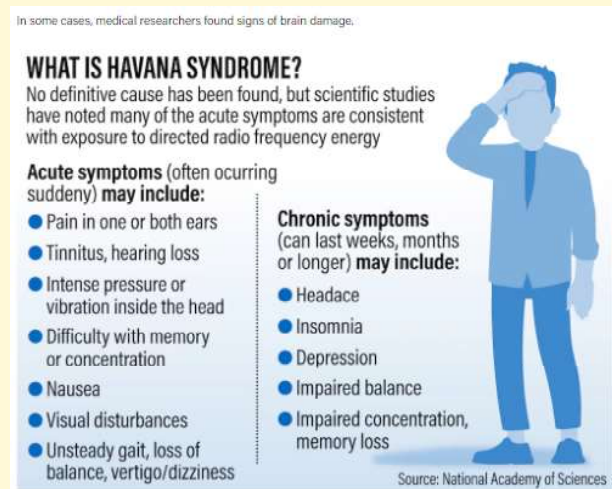
### Context:

Recently, Russia dismissed claims from a joint media investigation linking a Russian military intelligence unit to the ‘Havana syndrome’ which affected US diplomats and spies globally.

## About Havana syndrome:

### About

It is a term used to describe a set of mental health symptoms reportedly experienced by US intelligence and embassy personnel in different countries.



Source- The national news

### History of origin

1. In late 2016, American diplomats and other personnel stationed in Havana reported feeling unwell after encountering peculiar sounds and experiencing unusual physical sensations.
2. These symptoms, including nausea, intense headaches, fatigue, dizziness, sleep disturbances, and hearing impairment, have since been labeled as “Havana Syndrome.”

### What are its causes:

- Initial speculation leaned towards a sonic attack by Cuban intelligence, but later the National Academy of Sciences suggested that pulsed microwaves could be responsible for these symptoms.
- Microwaves, a type of electromagnetic radiation with frequencies between 300



megahertz (MHz) and 300 gigahertz (GHz), might have affected victims' nervous systems.

- There are suspicions of high-powered microwaves being delivered via a "microwave weapon."

#### Note

Microwave weapons are a form of direct energy weapons. They employ beams of high-frequency electromagnetic radiation to heat the water in a person's skin, causing pain and discomfort.

#### Havana Syndrome in India

- In India, the first case was reported in 2021 when a US intelligence officer travelling to New Delhi with a CIA director reported its symptoms.

#### UPSC Prelims point: Havana syndrome

### 3. 125 years of Kodaikanal Solar Observatory

#### Context:

This year (2024) marks the 125th Year of the Kodaikanal Solar Observatory (KoSO).

#### Kodaikanal Solar Observatory (KoSO):



Source- Wikipedia

- **About**- It is a solar observatory owned and operated by the Indian Institute of Astrophysics.
- **Origin**- The concept of an Indian solar observatory began in the late 19th century, and the government approved the establishment of the Solar Physics

Observatory in Kodaikanal in August 1893.

- **Location**- Kodaikanal in the Palani hills of Tamil Nadu was picked for the observatory because of its good atmospheric conditions, based on surveys by Charles Michie Smith (a Professor of Physics at the Madras Christian College).
- **Foundation**- Lord Wenlock, the Governor of Madras at the time, laid the foundation stone for KoSO in 1895.
- **Systematic observations** at KoSO commenced on March 14, 1901.
- **Instruments at KoSO**- Initially, KoSO had telescopes to study sunspots, prominences, and solar radiation. Now, it has advanced instruments like the H-alpha telescope and the White Light Active Region Monitor (WARM) for high solar imaging.

#### Need for such observatory:

- **Great Drought of 1875-1877**- The event, caused by low rainfall, highlighted the need for thorough solar studies to understand its effects on weather patterns.
- **India's Geographical significance**- India's drought was part of a broader global issue, impacting multiple countries and resulting in widespread famine.
- **Significant achievements of KoSO**
- The observatory played a crucial role in solar physics, such as identifying the radial motion of sunspots, referred to as the Evershed Effect.
- Over the years, KoSO broadened its research scope to encompass cosmic rays, radio astronomy, ionospheric physics, and stellar physics.

#### Additional facts

1. During its early years, the Bhavnagar Telescope, named after the Maharaja of Bhavnagar, stood out as one of KoSO's notable instruments.



2. A 15cm telescope was employed to photograph solar images onto film or plates, enabling the recording of solar magnetic plages and prominences since 1911.

### UPSC Prelims point: Kodaikanal Solar Observatory

#### 4. Bridge fuel

##### Context:

Natural gas is often referred to as a 'Bridge Fuel' for nations aiming to move away from coal and oil dependence while progressing towards renewable energy and electrification.



Source- DownToEarth

##### About Bridge Fuel:

- **About-** A "bridge fuel" is a term used for a fuel that helps power society with minimal environmental impact while transitioning to clean, renewable energy sources.
- **Objective-** The aim of using a bridge fuel is to substitute the majority of current fossil fuel-dependent energy sources as we shift towards a cleaner, more renewable energy economy devoid of greenhouse gas emissions.
- **Factors considered for bridge fuel-** Many view natural gas as a bridge fuel due to its lower greenhouse gas emissions during combustion. However, other factors for a bridge fuel includes enhancing national energy independence and reducing pollution costs.

##### What is Natural gas:

- **About-** Natural gas is a non-renewable resource and is classified as a fossil fuel. It comprises a mixture of gases abundant in hydrocarbons.
- **Constituents-** It primarily consists of colorless and odorless methane (CH<sub>4</sub>), typically ranging from 70% to 90% in composition. Further, it has components like ethane (C<sub>2</sub>H<sub>6</sub>) and propane (C<sub>3</sub>H<sub>8</sub>).
- **Impurities** Include carbon dioxide (CO<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S), and nitrogen (N).

##### Uses of Natural gas

- Natural gas undergoes processing to be converted into cleaner fuel before consumption. During this process, various by-products such as propane, ethane, butane, carbon dioxide, and nitrogen are extracted, which can be further utilized.
- **Power generation:** Natural gas powers electricity generation.
- **Heating:** It warms homes, buildings, and water.
- **Cooking:** It fuels stoves, ovens, and other cooking appliances.
- **Industrial processes:** Many industries use it for manufacturing, drying, and chemical reactions.
- **Transportation:** It fuels vehicles, including buses, trucks, and cars, often in compressed or liquefied form.
- **Fertilizer production:** Natural gas is a key ingredient in the production of ammonia-based fertilizers.

**Note-** Natural gas emits 50% less CO<sub>2</sub> than coal, making it a cleaner energy source.

### UPSC Prelims point: Natural gas and Bridge fuel

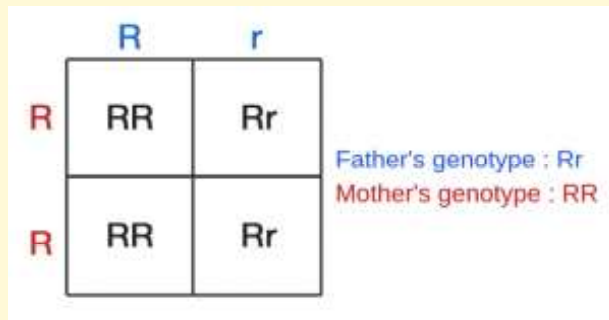
#### 5. Punnett square

##### Context:

This article explains Punnett squares, which predict the genetic combinations

of offspring from two individuals with known genotypes.

### About Punnett square



### Source- The Hindu

- The name "Punnett Square" originates from the British geneticist Reginald Punnett who devised the approach in 1905.
- Biologists use this diagram to figure out the chance of an offspring having a specific genotype.

### How does it work:

- The potential genetic traits of one parent listed on one side, and the traits of the other parent listed on the other side.
- Each square is filled by combining the traits from each parent. Each square represents a potential combination of traits that their offspring might inherit.
- It provides a straightforward method for visualizing the likelihood of various traits appearing in the offspring.

### Applications

- It finds frequent applications in biology to understand inheritance patterns, such as the study of dominant and recessive genes typically encountered in school settings.
- This valuable tool aids in forecasting the potential variations and probabilities arising from crossbreeding.

### UPSC Prelims point: Punnett square & Mendelian principles

## 6. White Rabbit Collaboration

### Context:

Recently, the European Organization for Nuclear Research (CERN) launched the White Rabbit Collaboration.



### Source- Cern

### About Rabbit (WR):

#### About:

- It is a technology created at CERN, with input from various institutes and companies, to precisely synchronize devices in accelerators to sub-nanosecond accuracy. It addresses the challenge of establishing a unified time standard across a network.
- Originally introduced in 2012, this fully open-source technology has rapidly expanded beyond the realm of particle physics.

#### Features:

- White Rabbit enables sub-nanosecond accuracy within Ethernet-based networks.
- These networks can be used solely for timing and synchronization in distributed electronic systems or for both timing and real-time data transfer.
- One of the key features of White Rabbit is its open-source nature and adherence to standards.

- **Applications**– White Rabbit is utilized in both the finance sector and various research facilities. It's also being considered for potential use in the future quantum internet.

**About White Rabbit Collaboration:**

- **About-** It is a worldwide community that operates on a membership basis, aiming to uphold a high-performance open-source technology that meets user requirements and encourages its adoption by industry.
- **Significance-** The WR Collaboration will offer specialized support and training. It will also promote joint R&D projects between organizations with shared interests and complementary skills, while creating a testing environment that builds confidence in products using the open-source technology.

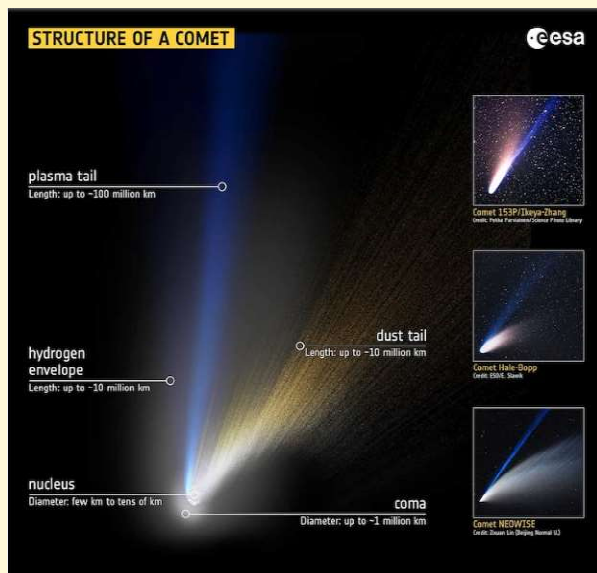
**UPSC Prelims point: White Rabbit and CERN**

**7. Mother of Dragons Comet**

**Context:**

The “Mother of Dragons” comet, formally designated as Comet 12P/Pons-Brooks, is currently making a rare appearance in the skies of the Northern Hemisphere.

**About Mother of Dragons Comet**



**Source- India Today**

- **Type-** It is as a ‘Halley-type’ comet, orbiting roughly every 71 years.
- **Naming-** It is named by the European Space Agency (ESA).

- **Classification-** It falls under the classification of a Jupiter-family comet. Its orbit is affected by the gravitational force of Jupiter.
- **Composition-** It is made up of ice, dust, and rocky elements. When it approaches the Sun, the heat transforms the comet’s ice from solid to gas.
- **It’s Nearest approach to Earth** will occur in June 2024.

**Comet**

1. Comets are cosmic bodies made mainly of ice, dust, and rocky material, travelling around the Sun in elongated, oval orbits.
2. Originating from the outer reaches of the solar system, they come from either the Kuiper Belt or the Oort Cloud.

**UPSC Prelims point: Comet and Dragon comet**

**8. NexCAR19: India’s first indigenous CAR T-cell therapy**

**Context:**

The President of India recently launched India’s first indigenous anti-cancer CAR-T cell therapy, NexCAR19, at IIT Bombay.

**NexCAR19:**

**TREATMENT FOR SPECIFIC B-CELL CANCERS**

NexCAR19 is a prescription drug for B-cell lymphomas, lymphoblastic leukaemias when other treatments have been unsuccessful

**PATIENT'S WHITE** blood cells are extracted by a machine through a process called leukapheresis and genetically modified, equipping them with the tools to identify and destroy the cancer cells.

**NEXCAR19 IS** manufactured to an optimal dose for the patient, and typically administered as a single intravenous infusion. Prior to this, the patient is put through chemotherapy to prime the body for the therapy.

**HOW NEXCAR19 WORKS**

**T-cells** are naturally made by the body as an advanced defence against viruses and cancer cells. As T-cells mature, they develop specific connectors (receptors) to target key signals on cancer cells.

**However, cancers** can limit the inbuilt extent and efficiency with which T-cells are able to seek and fight them. This results in an increase in cancer burden.

**Scientists have** identified certain proteins that are abnormally expressed on the surfaces of specific types of cancer cells. Specially designed receptors can find and bind to these cells.

**A safe shell** of a virus is used to genetically engineer T-cells so they express Chimeric Antigen Receptors – connectors that target a protein called CD19 on B-cell cancer.

Source: ImmunoACT

**Source- Indian Express**



Aspect	Details
<b>About</b>	It is India's first indigenously-developed CAR-T cell therapy.
<b>Developed by</b>	IIT Bombay, Tata Memorial Centre and ImmunoACT
<b>Purpose</b>	Designed to target cancer cells carrying the CD19 protein.
<b>Recommended for</b>	People with B-cell lymphomas who didn't respond to standard treatments like chemotherapy, leading to relapse or recurrence of the cancer.
<b>Treatment Process</b>	<ol style="list-style-type: none"> <li>1. Patient donates blood at a transfusion centre. The blood goes to the lab, where the T-cells are genetically modified.</li> <li>2. In a week to 10 days, these cells return to the clinic for patient reinfusion.</li> </ol>
<b>Recovery</b>	<ol style="list-style-type: none"> <li>1. Recovery typically occurs within two weeks after one cycle of the treatment.</li> <li>2. In the study conducted, approximately 70% of patients respond to the treatment, with variations between leukemia and lymphoma cases. About 50% of these responsive patients achieve a complete response.</li> </ol>
<b>Significance</b>	India is one of the first developing countries to have its indigenous CAR-T and gene therapy platform.
<b>About ImmunoAct:</b>	<ul style="list-style-type: none"> <li>· <b>About-</b> Founded in 2018 as a spin-off from IIT-Bombay, ImmunoACT leads the way in pioneering India's development of its first indigenous Cell &amp; Gene Therapy.</li> </ul>

- **Mission-** To ensure affordable access to innovative autologous CAR-T cell therapies.

**UPSC Prelims point: NexCAR19 and ImmunoAct**

## 9. Agni-Prime Missile

### Context:

The Strategic Forces Command (SFC) and the Defence Research and Development Organisation (DRDO) successfully tested the new generation ballistic missile Agni-Prime from Dr APJ Abdul Kalam Island off the coast of Odisha.



Source- Business Standard

### Agni-Prime Missile:

- **About-** It is a medium-range, nuclear-capable surface-to-surface ballistic missile. It was tested for the first time in June 2021.
  - **Developed by-** Defence Research and Development Organisation (DRDO).
  - **Range:** The missile has a range capability between 1,000 and 2,000 km.
  - **Features:**
    - a. The missile is a two-stage canisterised solid propellant ballistic missile with dual redundant navigation and guidance system.
    - b. It is lighter than all the earlier Agni series of missiles.
- Canisterisation** of missiles reduces the time required to launch the missile while improving the storage and ease of handling. **Redundancies** involve the introduction of extra components on the principle that if one functionality suffers



a failure, then a backup feature would still enable the objective to be achieved.

### About Agni missiles:

- **About-** Agni missiles are long-range ballistic missiles designed for surface-to-surface attacks and capable of carrying nuclear payloads.
- **First Variant-** The first missile in the series, Agni-I, was developed as part of the Integrated Guided Missile Development Programme (IGMDP) and tested in 1989.

### UPSC Prelims point: Agni-Prime missiles & Agni missiles

## 10. Shallow fakes

### Context:

With Lok Sabha elections starting on April 19, social media is flooded with misinformation, mostly in shallow fakes forms.



Source- Odishatv

### Shallow fakes:

- **About-** Shallowfakes, similar to deepfakes, involves altering people's images, videos, and voice clips for malicious purposes. However, unlike deepfakes, which requires advanced AI software, shallowfakes can be made using basic editing software like Photoshop.
- **Why term "shallow"?** - Shallow Fakes are called so because they involve lower-quality image and video editing compared to the sophisticated techniques used in Deep Fakes.
- **Used for:**

- To fabricate false proof of identity or address, such as photo ID documents like passports and driver's licenses.
- To produce counterfeit supporting evidence for claims or transactions, such as contracts, agreements, invoices for services, no claims discount certificates, etc.
- Spreading political narratives and defaming opponents, for example, a video depicting AIMIM leader Asaduddin Owaisi singing Shiv Tandav stotra.
  - **Impact-** Due to their simpler creation process, many experts see shallowfakes as posing greater threats than deepfakes.

### Deepfakes:

- Deepfakes are fake content in the form of videos, pictures and audio which are created using powerful artificial intelligence tools. The origin of the word "deepfake" can be traced back to 2017 when a Reddit user, with the username "deepfakes", posted explicit videos of celebrities.

### Difference between deep fakes and shallow fakes

- **Technology used-** Deepfakes use advanced AI and machine learning algorithms, while shallowfakes are less advanced, involving basic editing techniques like cropping, splicing, or adjusting video speed. Shallowfakes can be created with common editing software and may not require AI or machine learning.
- **Accessibility-** Shallow fakes are easier for regular people to make and are used more widely compared to deepfakes, which need AI and machine learning.
- **Detection-** Deepfakes are typically difficult to detect with the naked eye and may require specialized software or expertise. Shallowfakes are usually easier to spot than deepfakes because

they can show visual mistakes or differences.

## UPSC Prelims point: Shallow and Deepfakes

### 11. Kala Azar Disease

#### Context:

According to data from the National Centre for Vector Borne Diseases Control (NCVBDC) Programme, India has successfully met its goal of eradicating visceral leishmaniasis, commonly referred to as kala-azar.



Source- Research Matters

The National Vector Borne Disease Control Programme (NVBDCP) started in 2003-04 to prevent and control diseases like Japanese Encephalitis (JE), Dengue, Kala-azar, Lymphatic Filariasis, Malaria, and Chikungunya.

#### Decline in Kala Azar Cases in India

- According to the most recent data from NCVBDC, India recorded a total of 520 cases of kala-azar in 2023 nationwide, thus fulfilling the elimination criteria established by the World Health Organization (WHO).
- WHO criteria stipulates that no area within the country should report more than one case per 10,000 people.
- According to WHO, in 2020, India represented 18% of the world's kala-azar cases.

#### What is Kala-Azar:

Aspect	Details
<b>About</b>	<ol style="list-style-type: none"> <li>1. Kala-azar, also known as visceral leishmaniasis, is a parasitic disease caused by Leishmania parasites (Leishmania donovani in India).</li> <li>2. It is a neglected tropical disease and is the second-largest parasitic killer in the world (after malaria).</li> </ol>

#### Transmission

It is transmitted through the bite of infected sandflies.

#### Symptoms

Fever, weight loss, enlargement of the spleen and liver, and anemia

#### Impact

Kala-azar primarily affects the spleen, liver, and bone marrow.

#### Fatality rate

95%, if left untreated.

#### Treatment

1. Injectable liposomal amphotericin B is administered.
2. 12-week course of Oral Miltefosine is prescribed for PKDL (Post Kala-Azar Dermal Leishmaniasis).

**Note- Post Kala-Azar Dermal Leishmaniasis (PKDL)-** It occurs when Leishmania donovani invades and multiplies in skin cells, causing skin lesions. PKDL typically appears after kala-azar treatment.

#### Strategies Adopted to Eliminate Kala Azar in India

- **Spraying:** Intensive indoor residual spraying to target and reduce sandfly breeding grounds.
- **Wall Plastering:** Coating walls with a specific soil (Gerrard Soil) to deter sandflies from nesting.
- **Treatment Compliance:** Engaging the ASHA (Accredited Social Health Activist) network to oversee treatment completion for PKDL patients.

#### Three mains form of the Kala-azar

- **Visceral leishmaniasis (VL)**- Impacts multiple organs and represents the most severe illness.
- **Cutaneous leishmaniasis (CL)** is the most common form, causing skin ulcers, mainly on exposed body parts, which can result in lifelong scars and disability or stigma.
- **Mucocutaneous leishmaniasis** destroys mucous membranes in the nose, mouth, and throat, leading to severe damage.

### UPSC Prelims point: Kala-azar

## 12. Vaping raises heart failure risk by 19%, reveals study

### Context:

A recent extensive study conducted in the US indicates that vaping at any stage of life is associated with a 19% rise in the likelihood of heart failure.



Source- The Indian Express

### Vaping:

- Vapes or e-cigarettes use electronic heating to vaporize a mixture of glycerine, flavors, and nicotine, the addictive component found in traditional cigarettes.
- It is also known as electronic nicotine delivery systems (ENDS).
- **Impact:**
- Nicotine in e-cigarettes might lead to addiction rather than helping quit regular cigarettes. Accidental exposure to the liquid could also result in acute nicotine poisoning.
- Due to the lack of standardized liquid, numerous vapes emit

chemicals that can lead to lung diseases and contain cancer-causing substances and heavy metals.

- E-cigarette or vaping product use-associated lung injury (EVALI) can cause shortness of breath, chest pain and severe difficulty in breathing.

### The recent study:

- The study examined 170,000 individuals over 45 months. Among them, 3,242 experienced heart failure.
- The findings revealed that individuals who used e-cigarettes at any time had a 19% higher risk of developing heart failure compared to non-users.
- The study also discovered that vaping raised the chances of a specific type of heart failure known as heart failure with preserved ejection fraction (HFpEF). This condition involves stiffening of the heart muscles, leading to improper filling between contractions.

### Regulations on the Use of E-cigarettes Worldwide:

- Thirty-four countries have banned the sale of e-cigarettes, 88 countries have no minimum age at which e-cigarettes can be bought and 74 countries have no regulations in place for these harmful products.
- In India, the possession of e-cigarettes and similar devices is a violation of the Prohibition of Electronic Cigarette Act, 2019.

### UPSC Prelims point: E-cigarettes and Vaping

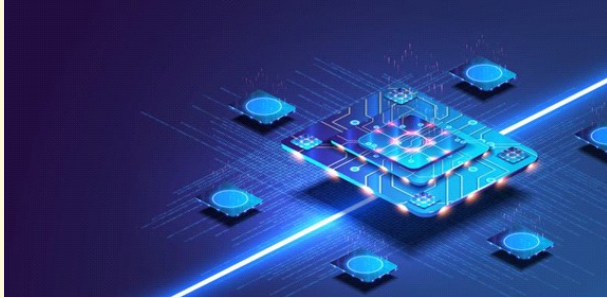
## 13. Technology behind Semiconductor chip manufacturing

### Context:

Recently, a rise in semiconductor global capability centres (GCCs) has been seen in India with a focus on design, testing and validation. The TATA group has partnered with Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC) to set-up a 300mm

wafer fabrication plant in Gujarat. It will roll out its first 28nm chip in 2026. Two assembly and test plants in Gujarat and Assam have also been recently approved by the Government of India.

### About semiconductor chip



Source: The Hindu

- Semiconductors have electrical properties between conductors and insulators.
- Its electrical properties can be changed by adding small amounts of certain substances called 'dopants'.
- By taking a pure semiconductor and carefully injecting certain parts with specific dopants, complex circuits can be 'printed' on the semiconductor.

### What is transistor and how it is used:

- The transistor is one of the earliest electronic components to be built using a semiconductor. It is an extremely versatile device. For ex- It can function as an electronic switch.
- A typical semiconductor chip can have millions/billions of these interconnected switches that work together to perform various logical and computational operations.
- Millions of these tiny switches can be found on a single chip, which work together to perform complex tasks.
- Transistors are essential for devices that need to process signals, like those used for WiFi.

### Advances made in the fabrication technology:

- Technology has progressed at a relentless pace since the semiconductor

chip was first conceptualised, more than six decades ago.

- **Impressive gains in the switching capability of the transistors-** The transistors are able to switch on-and-off faster (more computations per second) and with lesser power consumption (longer battery life and lesser heat dissipation).
- **New manufacturing technology-** The industry has used labels like '45nm', '28nm' and '16nm' to introduce each new manufacturing technology. These numbers convey the level of miniaturisation that is achievable using a particular technology (so smaller is better).
- **Researchers aiming for decreased sizes-** Researchers are aiming to stacking entire circuits on top of one another is another way to continue to shrink semiconductor chip sizes.

### Wafer

- Wafer is a circular piece of semiconductor on which an array (typically 300-400) of chips are printed. This is then diced to create individual chips. A larger wafer size allows more chips to be printed on a single wafer which makes chip production faster and cheaper.
- Wafer sizes used in the industry have constantly been increasing. The current size if the wafer is 300mm which is approximately 12 inches. Efforts are ongoing to move to a 450mm wafer size.
- While moving to a larger wafer size has its technical challenges and capital expenses, it has proven to be economical in the long run.

### Assembly and test plant

- A chip is tested for its functionality and stress (subjecting the chip to high temperature and voltages) to ensure reliability during its lifetime. This is done in assembly and test plant.



### About India's semiconductor ecosystem

- India's chip design sector has been booming since the 1990s, leveraging computer-aided design to create semiconductor chips entirely in software.
- This involves outlining the chip's functions, converting these into electronic circuits, and refining them for efficiency, power, and size by skilled engineers using desktops.
- The finalized design is then sent as a file to a manufacturing plant for production, akin to sending a digital graphic novel to a publisher.
- Semiconductor production opens doors for a broader range of experts, including process and control engineers, data scientists, material scientists, physicists, and chemical engineers, to significantly contribute to the industry.

### UPSC Prelims and Mains point: Semiconductor & Wafer

#### 14. Coordinated Lunar Time

##### Context:

US government has asked NASA to develop a time system for the Moon to ensure that international groups and private companies working in the moon, can synchronize their activities.

##### About Coordinated Lunar Time:



Source-RNZ

- **Description**-It will provide a time-keeping benchmark for lunar spacecraft and satellites that require extreme precision for their missions. It will also

synchronize the communication between satellites, astronauts, bases and the Earth.

- **Importance**-A unified time standard would ensure coordinated operations, reliability of transactions and managing the logistics of lunar commerce.

##### How does Earth's time standard work:

- Most of the world's clocks and time zones follow Coordinated Universal Time (UTC), which is a globally accepted standard for time. UTC is established by the International Bureau of Weights and Measures in Paris, France.
- **Measurement-**
- It is tracked by a weighted average of more than 400 atomic clocks placed in different parts of the globe. Atomic clocks measure time in terms of the resonant frequencies. Resonant frequency is the natural frequency of an object where it tends to vibrate at a higher amplitude of atoms such as cesium-133.
- In atomic time, a second is defined as the period in which a caesium atom vibrates 9,192,631,770 times. As the vibration rates at which atoms absorb energy are highly stable and ultra-accurate, atomic clocks make for an excellent device for gauging the passage of time.

##### What is the need to develop a time system for the moon:

- UTC cannot be used to determine time on the Moon. Since there is less gravity on the Moon, time ticks slightly faster as compared to time on the Earth. For ex- an Earth-based clock will appear to lose on average 58.7 microseconds per Earth day with "additional periodic variations. However, even a small difference in time can cause issues for things like spacecraft docking on the moon, timing data transfers, communication, and navigation.

- With the rise in number of moon missions in future, it will be difficult to synchronize their mission operations standard with each other, and it may lead to collisions. Thus, it is important to have Coordinated Lunar Time.

**UPSC Prelims and Mains point: Coordinated Universal Time**

## 15. God Particle

### Context:

Nobel prize-winner Physicist Peter Higgs, known for proposing the Higgs boson or the God particle, has passed away at 94.

### About Higgs Boson:

- **Introduction**-The Higgs boson is the fundamental force-carrying particle of the Higgs field, which is responsible for granting fundamental particles their mass.
- **Discovery**-The particle was finally discovered on July 4, 2012, by researchers at the Large Hadron Collider (LHC). LHC is the most powerful particle accelerator in the world which is located at the European particle physics laboratory CERN, Switzerland.
- **Conformation of Higgs Field**-The LHC confirmed the existence of the Higgs field and the mechanism that gives rise to mass, and thus completed the standard model of particle physics.
- **Standard Model of particle physics**-The Higgs boson is one of the 17 fundamental particles in the Standard Model. This is the best theory about the behaviours of the universe's most basic building blocks.

### Features:

- It has a mass of 125 billion electron volts, meaning it is 130 times more massive than a proton.
- It is also chargeless with zero spin, a quantum mechanical equivalent to angular momentum.

- It is the only elementary particle with no spin.

### About boson:

- It is a "force carrier" particle that comes into play when particles interact with each other, with a boson exchanged during this interaction. For example-when two electrons interact, they exchange a photon, the force-carrying particle of electromagnetic fields.

**UPSC Prelims point: Boson particles**

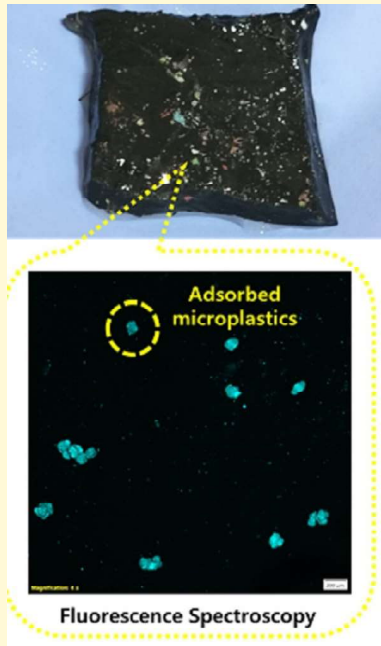
## 16. Novel hydrogel removes microplastics from water

### Context:

Researchers at the Indian Institute of Science (IISc) have developed a sustainable hydrogel specifically designed to tackle the menace of microplastics in water.

### About hydrogel:

- 1) The hydrogel utilizes a complex interpenetrating polymer network (IPN) architecture composed of chitosan, polyvinyl alcohol, and polyaniline.
- 2) This structure is infused with nanoclusters of copper substitute polyoxometalate (Cu-POM), which act as catalysts under UV light irradiation to degrade microplastics.

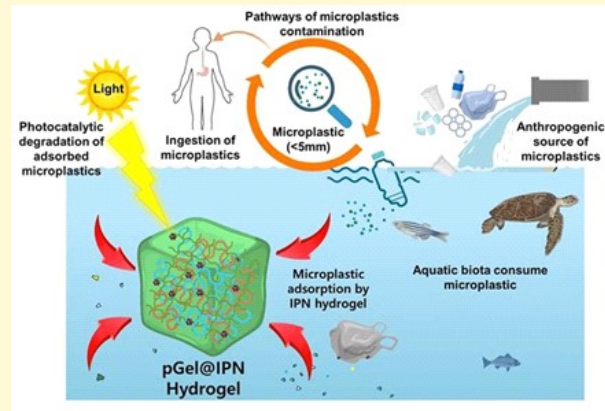


Source: PHYS.ORG

- 3) The synergistic effect of the polymers intertwined with the catalytic nanoclusters enhances the hydrogel's stability across various temperatures and also enables it to adsorb and degrade large quantities of microplastics efficiently.
- 4) This hydrogel efficiently removes about 95% and 93% of two different types of microplastics in water, highlighting its potential as a significant solution in water purification technologies.
- 5) The hydrogel could last for up to five cycles of microplastic removal without significant loss of efficacy.
- 6) This hydrogel can also be converted into carbon nanomaterials that are capable of extracting heavy metals, such as hexavalent chromium, from contaminated water.

#### About Microplastic:

- Microplastics are small plastic particles in the environment that are generally smaller than 1 mm to the 1 micrometer range. Microplastics can be formed by fragmentation of large plastic waste material.
- **Danger of Microplastics to humanity and overall biodiversity:**



Source: The Hindu

- Microplastics pass the filtration and treatment processes for wastewater resulting in significant global impacts on wildlife from marine environment pollution.
- Microplastics kill biodiversity and other organisms' fish before they reach reproductive age. It lead to stunted growth and behaviour change in some organisms.
- Large amounts of plastic are not recycled and end up in landfills, posing a threat to human health.
- The durable properties of plastics make them persistent and slow to degrade in the environment entering the food chains. It holds the potential for both bioaccumulation and biomagnification.

#### UPSC Prelims point: Hydrogel and Microplastics

#### 17. Manga disease

##### Context:

The forest department is monitoring an outbreak of mange among a pack of Asiatic wild dogs in the [Mudumalai Tiger Reserve \(MTR\)](#) in the Nilgiris.

##### About Manga disease:

Aspects	Details
Description	It is a skin disease of animals caused by mite infestations.

**Caused by**

Sarcoptes scabiei mite, which also causes human scabies.

**Is it contagious?**

1. They are transmitted between animals by direct contact and by objects that have been in contact with infected animals.
2. Humans can contract certain types of mange from infected dogs and can temporarily infest human skin, leading to itching and discomfort.

**Symptoms**

Inflammation, itching, thickening of the skin, and hair loss.

**Prevention**

Prevention includes maintaining a clean environment, disinfect belongings, and avoid contact with infected or stray animals.

**Treatment**

Treatment options aim to eliminate the mites, alleviate symptoms, and promote skin healing. Topical medications are commonly prescribed to target localized mange areas.

**About Asiatic Wild dogs:**

Aspects	Description
<b>About</b>	<ol style="list-style-type: none"> <li>1) It is a member of the family Canidae and the class Mammalia.</li> <li>2) Asiatic Wild dogs also known as Dhole (Cuon alpinus).</li> </ol>
<b>Distribution</b>	<ol style="list-style-type: none"> <li>1) It is an apex social carnivore in the tropical forests of South and Southeast Asia.</li> <li>2) In India, Dhols are found in three clusters namely the Western and Eastern Ghats, central Indian landscape and North East India.</li> <li>3) According to a 2020 study, Karnataka, Maharashtra and Madhya Pradesh rank high in conservation of dhole.</li> </ol>




**Habitat**

Dense jungles, steppes, mountains, scrub forests, and pine forests.

**Threat**

Competition and disease transmission from domestic dogs are a threat to this species.

**Conservation status**

IUCN Status: Endangered  
CITES: Appendix II  
Wildlife Protection Act: Schedule II

**UPSC Prelims point: Manga disease****18. PSLV Orbital Experimental Module (POEM)- ISRO's Zero Debris Milestone****Context:**

ISRO's PSLV-C58/XPoSat mission successfully deployed the XPoSat satellite and converted the PSLV's last stage into the POEM-3 module, leaving no debris in Earth's orbit.

**About PSLV Orbital Experimental Module (POEM)**

- The PSLV Orbital Experimental Module is a platform that will help perform in-orbit experiments using the final stage of the Polar Satellite Launch Vehicle (PSLV).
- It was developed by the Vikram Sarabhai Space Centre (VSSC).
- It was used for the first time in the PSLV-C53 mission in June 2022. ISRO had POEM orbit the earth to perform in-orbit scientific experiments with various payloads onboard.

**How it works:**

- POEM is powered by solar panels mounted on the fuel tank of the rocket's fourth stage and a lithium-ion battery.
- It has a navigation, guidance, and control (NGC) system to stabilise its altitude along with helium control thrusters.
- The NGC system has four Sun sensors, a magnetometer, and gyroscopes. It also



has a telecommand system to communicate with the ground station.

- It communicates to ISRO's NavIC satellite constellation for navigation.

### Earlier use of PS4 rocket junk:

- ISRO first demonstrated the capability of using PS4 as an orbital platform in 2019 with the PSLV-C44 mission that injected Microsat-R and Kalamsat-V2 satellites into their designated orbits. The fourth stage in that mission was kept alive as an orbital platform for space-based experiments.

### Achievement of POEM-3

- ISRO's PSLV C-58 mission successfully launched the XPoSat satellite into a 650 km orbit and converted its fourth stage into the POEM-3 module at 350 km for experiments.
- It features nine payloads. POEM-3 completed 400 orbits and conducted several experiments over 25 days.
- After two months, POEM-3 re-entered Earth's atmosphere on March 21, 2024, disintegrating successfully with all objectives met.

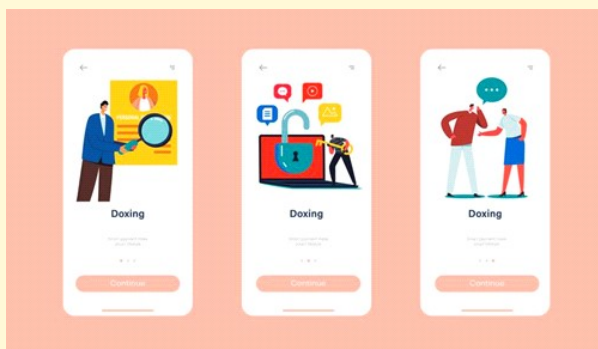
### UPSC Prelims point: POEM & PSLV-C58/XPoSat

## 19. Doxing

### Context:

Recently, there has been a rise in cases of doxing.

### About doxing:



Source: The hindu

Doxing is a form of online harassment where someone's private details are publicly disclosed.

- This includes sensitive data such as phone numbers, private emails, medical records, government ID numbers, live locations, insurance details, and confidential employment information.
- Doxing also involves the release of private or semi-private content without the consent of the individual, who did not intend for it to be shared publicly.
- This information is often acquired through unlawful means, including **hacking and theft**.

### Measures to prevent doxing:

- It is recommended to create strong passwords that vary between platforms, incorporating a mix of letters, numbers, and symbols.
- One should add an extra layer of security by setting up multi-factor authentication on your accounts whenever it's available.
- One should avoid sharing images that could reveal sensitive information like your home location, house keys, or identifiable landmarks near you.
- Use resources such as the [National Cyber Crime Reporting Portal](#) to report any suspicious or malicious cyber activities.

### UPSC Prelims point: Doxing

## 20. Man Portable Anti-tank Guided Missile (MPATGM) Weapon System

### Context:

Recently, DRDO & Indian Army conducted successful trials of indigenous Man Portable Anti-tank Guided Missile Weapon System.

## About Man Portable Anti-Tank Guided Missile Weapon System



Source: The statesman

### Aspects

### Description

#### About

The MPATGM (Man Portable Anti-Tank Guided Missile) Weapon System is a portable missile launcher to engage and destroy enemy tanks and armoured vehicles.

#### Developed by

It was indigenously designed and developed by Defence Research & Development Organisation (DRDO).  
Components MPATGM, Launcher, Target Acquisition System, and the Fire Control Unit

### Features

1. It is lightweight and portable. Its design allows it to be easily carried and operated by a single soldier. This enhances the mobility of infantry units.
2. The MPATGM system can effectively hit armored targets from a considerable distance, providing infantry with crucial anti-tank functionality on the battlefield.
3. It has versatility and equipped with day/night and top-attack capabilities which enhances its effectiveness across a wide range of operational scenarios.
4. It has dual mode seeker functionality which is a great value addition to the missile capability for tank warfare.

Note: The **dual-mode seeker** combines imaging IR and SAL capabilities into a single system.

**UPSC Prelims point: MPATGM (Man Portable Anti-Tank Guided Missile) Weapon System**

# SOCIAL ISSUES

## 1. Bet on human resources for Viksit Bharat by 2047.

### Context:

The article highlights the importance of long-term planning. The author argues that whether market-oriented or not, an economy's path is guided by variables that can take around 7 years to vary and adjust. This is the reason that the Viksit Bharat goal set by Prime Minister assumes significance. It encouraged Indian minds to achieve developed country status by 2047.

### The problems with India's labour market:

- India has low female labour force participation in the overall labour force (especially of women)
- There are few jobs in formal sectors and so many self-employed workers.
- There is the issue of joblessness and slow growth in wage rises.
- There is transition of workers from farm to low-skill service.
- Thus, to avoid middle income trap and achieve developed country status, India must step up investment in education and healthcare. Like infrastructure, it can't be left to market forces.

**Mains point: The issues with India's labour market. How can this be addressed.**

## 2. People care more about poverty than inequality: Don't Lose Sleep Over Inequality

### Context:

The article discusses how people care more about poverty than inequality. It explains that inequality doesn't bother most people unless it affects them personally and argues that reducing poverty is more important than

reducing inequality in developing countries. People Care More About Poverty Than Inequality

### The Gini Coefficient show about India:

- **Gini Coefficient Increase:** In India, the Gini coefficient, a measure of inequality, increased from 0.30 in 1993-94 to 0.36 in 2011-12.
- **Rising Inequality:** This rise indicates a growth in income or wealth inequality over the years.
- **Contrast with Poverty Reduction:** While the Gini coefficient rose, indicating higher inequality, India also saw a significant reduction in extreme poverty during the same period.

### The people care more about poverty than inequality:

- **Personal Impact:** People are more affected by their immediate financial situation, like poverty, rather than abstract concepts of national or global inequality.
- **Awareness:** The general public is often unaware of the technical measures of inequality, like the Gini coefficient.
- **Economic Priorities:** In developing countries like India, the focus is more on wealth creation and escaping poverty, as demonstrated by the significant reduction in extreme poverty alongside rising inequality.

### The wealth creation important:

- **Poverty Reduction:** Wealth creation is crucial for reducing poverty, as seen in India's progress where extreme poverty significantly declined alongside economic growth.
- **Economic Growth:** When wealth is generated, it contributes to overall

economic development, benefiting society broadly.

- **Wealth Disparity:** As wealth is created, even if the wealthy retain a small portion, their share of total wealth can increase, as evidenced by the rise of billionaires in India.
- **Investment and Entrepreneurship:** Wealthy individuals often invest in high-return ventures, promoting economic activity.

### The problem with wealth Tax:

- **Discouraging Investment:** A heavy wealth tax could deter wealthy individuals from investing in high-return ventures, vital for economic growth.
- **Impact on Entrepreneurship:** Such a tax might discourage new entrepreneurship, particularly important for first-generation entrepreneurs.
- **Government Efficiency:** There's a risk that wealth managed by the government may not be as effectively invested as in private hands.
- **Economic Growth:** Overall, a hefty wealth tax could potentially slow down economic growth and innovation.

**Mains point: people tend to prioritize poverty reduction over addressing inequality.**

### 3. Factors behind declining fertility

#### Context:

The article talks about a Lancet paper showing global population trends are changing, with declining birth rates instead of overpopulation. It highlights India's situation and suggests policy changes for a better future. Factors behind declining fertility

#### The major findings in a paper on global population trends in the Lancet:

- **Global Population Decline:** The Lancet paper projects a significant decrease in the global population. Most countries,

including India, are expected to see lower birth rates.

- **China's Population Halving:** By 2100, China's population might drop by up to 50%.
- **Contrast in Africa:** Sub-Saharan Africa is the exception, likely to experience population growth.
- **Ageing Population:** The decline in birth rates suggests a future with more elderly people and fewer young ones.
- **Economic and Social Impact:** The change could affect job markets, healthcare, and social systems, as there will be more old people needing care but fewer young people to support them.

#### The factors behind declining fertility:

- **Education and Empowerment:** Higher education levels and increased empowerment among women lead to smaller family sizes.
- **Economic and Job Security:** The high cost of child-rearing and lack of job security discourage having children. This trend is observed even in wealthy countries with generous parental support policies.
- **Climate Change Concerns:** Young people are reluctant to bring children into a world threatened by environmental issues like climate change.
- **India's Economic Challenges:** In India, 90% of the youth are in low-paying, informal jobs, contributing to uncertainty about the future.
- **Wealth Inequality:** India's extreme wealth inequality, with the richest 1% owning 40% of the wealth, creates societal instability.
- **Declining Happiness and Democracy Health:** India's low ranking in the World Happiness Report and concerns about its democratic status further impact decisions about starting a family.

#### Way forward:



- . **Restore Hope:** Policies should focus on instilling hope in young people about their future.
- . **Promote Education and Job Security:** Enhancing education and ensuring job security can address economic uncertainties.
- . **Reform Taxation and Social Security:** Implement progressive taxation and improve social security systems to create a more equitable society.
- . **Ensure Universal Healthcare:** Universal health coverage should be provided, especially for long-term care of chronic conditions.
- . **Address Environmental Concerns:** Tackling issues like climate change can alleviate young people's fears about the future world for their children.
- . **Strengthen Democracy:** Improving the democratic health of a country can positively impact societal outlook and stability.

**Mains point: The factors contributing to declining fertility rates globally, with a focus on India, as discussed in Lancet's findings.**

#### 4. Falling Fertility Rate in India - Blessing in disguise for India.

##### Context:

- . The Lancet has recently released a report where it estimated that the Total Fertility Rate (TFR) for India will go down to 1.29 by 2051. This estimate is based on a complex demographic modelling that was done for 204 countries as part of the global burden of disease study.
- . The TFR used for projecting the population by the government's technical group is 1.94 for the period 2021-2025 and declining to only 1.73 during 2031-2035. Further, as per UN Population Division, India will have a population of close to 1.7 billion by 2065, before it starts declining. These predictions are higher than those given

by the study in The Lancet. All these imply that India's population may stabilize below the 1.7 billion mark much before 2065.

#### The reasons for demographic transition in India:

**There are several factors that have triggered a demographic transition in India such as-**

- . There has been the rapid pace of economic development in India in past 2 decades.
- . There has been a significant reduction in infant and child mortality rates. It has reduced the need to have a large family for old age support.
- . Participation of women in workforce has increased due to improvement in education level.
- . The old-age security system and improvement in housing conditions have also contributed to demographic transition in India.

#### The significance of falling fertility rate for India:

- . Accelerated economic growth- With declining fertility rate, there will be a fall in the dependency rate and a larger share of working adults in the population. This will generate surplus income, which can enhance the pace of economic growth and lead to positive intergenerational transfers.
- . Improved labor productivity:
  - A) **The decline in population growth** would increase the amount of capital resources and infrastructure available in per capita terms.
  - B) **The reduction in fertility rate** would permit the relocation of resources for the education and skill development of children. A young skilled workforce would improve labor productivity.
  - C) **Declining fertility rate** will change the age distribution of the population. There would be an increase in the fraction of the labor force in the population.

**Improvement in quality of education-** With falling fertility rate, there would be a decline in the number of children enrolling in schools. This may improve educational outcomes as there will be more resources and infrastructure availability per capita.

**Enhanced participation of women in workforce-** Women are engaged in childcare at a productive period of their life. With declining fertility rate, there will be less time needed for childcare which may enhance the participation of women in workforce. For ex-improved share of women in MNREGA employment in the southern states.

**Redistribution of workforce-** Industrially developed states like southern states, and Gujarat and Maharashtra that have low fertility rates, can get cheaper labor from the northern states. This may result in improved working conditions, elimination of wage discrimination for migrant workers and the mitigation of security concerns in the receiving states through institutional safeguards.

### **The negative implications of declining fertility rate:**

India must accept the challenges of declining fertility rates and optimize the opportunity if it comes a bit ahead of the predicted time.

**Mains point: The falling fertility rate prove to be blessing in disguise for India.**

## **5. Living wills - A dignified way to death.**

### **Context:**

Recently, 30 people in Thrissur in Kerala have executed living wills. The Supreme Court has legalized living wills since 2018 to allow terminally ill patients, with no hope of a cure or recovery, to withdraw treatment and die with dignity.

### **A living will:**

It is a legal document that outlines preferences for medical treatment for terminally ill patients who are unable to communicate their decisions, particularly regarding life-sustaining measures and end-of-life care.

### **The existing procedure for executing living will:**

**Streamlined procedure-** The Supreme Court has streamlined the procedure to overcome the challenges posed by previously recommended complicated procedure-

Under this, living wills must be handed over to a **"competent officer"** in the local government after being signed in the presence of two witnesses and attested before a notary or a gazette officer. The competent officer will serve as a custodian of living will.

If the patient is terminally ill and can't make decisions anymore, the doctor will check the living will either against the copy kept by the custodian or against digital health records of concerned patients.

**Certification by medical board-** The decisions on withholding or withdrawing treatment are certified first by a primary medical board and then confirmed by a secondary medical board. The secondary board should have a doctor who is nominated by the chief medical officer.

Further, as per the Supreme Court, if the patient does not have a living will then the primary medical board will have to obtain the written consent of the 'next of kin' for withdrawing/withholding treatment.

### **The issues in the implementation of living will in India:**

**Lack of custodians for living wills-** State governments have not designated custodians for living wills. For ex- a public interest litigation had to be filed

in the High Court of Bombay to appoint custodians across the State recently.

**Absence of protocol-** The National Health Authority has not produced protocols that could allow living wills to be authenticated through digital health records.

**Complicated Procedure-** As per guidelines, the secondary board must have a doctor nominated by the chief medical officer. This implies that hospitals cannot have secondary medical boards unless the chief medical officer has nominated a doctor in the hospital where the concerned patient is admitted. Therefore, terminally ill patients, even those who have made living wills, are not able to make critical decisions about medical care

**Ambiguous guidelines-** Indian law does not have a clear definition for 'next of kin'. Further, there is lack of clarity when any family members disagree about the best course of action. Due to all this, officials will refrain from taking decisions on such a sensitive subject.

**Lack of state government willingness-** This area is complex and requires attention from medical and legal experts, therefore state governments are reluctant to implement it with determination.

### The way forward:

The Central government can bridge the gap in expertise by developing and publishing model orders and protocols. These protocols can provide the State governments with the necessary confidence and the guidance to effectively implement the Supreme court judgment.

**Mains point:** The impediments in the smooth implementation of living will in India.

## 6. Data on what Indians earn does have plenty to reveal of poverty.

### Context:

This article discusses how despite official reports, many Indian workers, especially casual ones, earn less than the minimum wage and poverty line, indicating that a significant number of Indians still live in poverty. It also highlights the issue of declining job quality and low wages in India.

### The new Consumption Expenditure Survey (CES) say:

- The new Consumption Expenditure Survey (CES) has a different survey design, sparking debate on setting the right poverty line.
- It's unclear if this new CES accurately reflects poverty levels without a revised poverty line by experts.
- The CES indirectly indicates poverty through wages of the poorest workers.

### The poverty levels be estimated:

- Poverty levels can be estimated by looking at the wages of the poorest group of wage workers, a method used for initial poverty lines.
- The minimum wage for unskilled workers, crucial for this estimation, was Rs. 424 per day in 2023 and Rs. 449 in 2024.
- The Rangarajan poverty line for 2022-23 is set at Rs. 1,837 and Rs. 2,603 monthly per person for rural and urban areas, respectively.
- This method considers actual working days from the Periodic Labour Force Survey, suggesting a daily earning need of Rs. 390/Rs. 552 in rural/urban areas to cross the poverty line.
- A family poverty line of Rs. 9,185 in rural and Rs. 13,015 in urban areas is assumed for a five-member family.

### The issues with the minimum wage in India:

- The government notified minimum wages are often lower than what is needed to meet the poverty line. For

example, the **2024 minimum wage is Rs. 449 per day**, below the Rs. 483 recommended by the labour ministry.

According to the **India Employment Report 2024**, over half of casual workers didn't receive the minimum wages.

Specifically, 76% of agricultural workers and 70% in construction earned below minimum wages.

Additionally, 41% of regular workers earned less than the minimum wage.

This situation points to a widespread issue of wages being insufficient to lift workers above the poverty line.

### The poverty and unemployment in India:

The data suggests that a significant portion of Indians live in poverty, with low wages and poor job quality.

Even though poverty might have reduced since 2011-12, many workers, including those in better positions, still face meager earnings.

This challenges claims of India eliminating extreme poverty, highlighting the reality of poorly paid workers and deteriorating job quality.

**Mains point: The implications of the discrepancy between government-notified minimum wages and the wages needed to meet the poverty line, as outlined in the India Employment Report 2024.**

## 7. Universal Health Coverage-Indias path to inclusive health care

### Context:

The World Health Day is observed every year on April 7 by The World Health Organization (WHO). The theme this year is "My Health, My Right". It highlights the significance of health equity. Health equity ensures that every person has an equal opportunity to achieve their highest health potential irrespective of their circumstances. It is determined by social norms, political, legal and other structural determinants.

Further, the National Health Policy also talks about Universal Health Coverage as one of its goals. **Universal health coverage (UHC)** signifies universal accessibility to comprehensive, high-quality health services, without financial hardship.

### The challenges before India to attain health equity:

**Health Disparities-** As per 2011 census, more than 17% of Indias metropolitan area are slums, which face significant health disparities. According to the Indian Council of Medical Research, infectious diseases like tuberculosis are 1.5 times more prevalent in slums compared to non-slum areas.

**Social discrimination-** As per the National Family Health Survey (NFHS)-5 (2019-21) data, Scheduled Castes and Scheduled Tribes experience higher child mortality and lower immunization rates.

Further, 59% of poor women suffer from anemia which is almost double the rate in the higher income groups.

**Rise of non-communicable diseases (NCDs)-** It account for more than 60% of all fatalities in India. As per The Public Health Foundation of India, economic effect of NCDs could cross \$6 trillion by 2030.

**Paucity of doctors-** WHO data indicates that India has only 0.8 doctors per 1,000 people, which is below the advised ratio. Rural areas have an acute shortage of doctors.

**Right to health-** India does not have a constitutional provision for the fundamental right to basic health. The constitutional right to health is critical to break the vicious cycle of poverty and poor health.

**Issues faced by migrant workers-** India has a large migrant population. According to UN-Habitat/World Bank, 49% of the urban population lives in



urban slums. Urban slums do not have access to clean drinking water and sanitation.

### The way forward:

- **Ensure portability of health care services**– Access to health care should be made more mobile and portable for migrant workers.
- **Minimize out-of-pocket expenditure**– There is a need to simplify reimbursement processes for reducing out-of-pocket expenditure. The design of cash transfers and reimbursement in India's public healthcare system should be adapted as per the needs of migrant and marginal communities.
- **Inclusive health systems**–In order to overcome language barriers and diversity in the urban context, there is a need to integrate health management information system dashboards with both public and private systems. This will make the health system more inclusive to all sections of society.
- **Strengthening primary health care**– There is a need to strengthen and implement community-based primary healthcare in urban and peri-urban areas with seamless referral systems.
- **Health Literacy**–In order to achieve the target of Universal Health coverage and health equity, there should be more focus on health literacy. India should include health education in National Health Mission. This would empower the people to make educated health decisions.
- **Leveraging the role of NGOs**– Organizations with a strong local presence are essential for ensuring health equity. In this context, it is important to leverage the role played by the non-governmental organizations and civic societies because they engage directly with grass roots community. They can help in tailoring health initiatives that

are culturally sensitive to the community's unique needs.

• **Evidence-based practices**–Research institutes and academic institutions can offer insights into health inequalities and the efficacy of health interventions. This will assist in creating evidence-based practices.

**Mains point: The impediments to achieve health equity in India.**

## 8. "The climate crisis is not gender neutral"

### Context:

This article explains how climate change impacts women and girls more, especially in poor and rural areas. It discusses the need for climate action that includes women, as they can offer important solutions and should be seen as agents of change, not just victims. Climate crisis is not gender-neutral

### The climate crisis not gender-neutral:

- **Higher Risk in Disasters:** Women and children are 14 times more likely to die in disasters, as noted by the UNDP. This shows gender disparities in vulnerability and mortality rates during climate crises.
- **Increased Domestic Burden:** In India, climate-induced crop failures lead to increased workload for women in agriculture, alongside health issues and domestic violence. Men face social stigma from unpaid loans, but women bear the brunt of increased domestic responsibilities.
- **Gender-Based Violence:** Studies link natural disasters to a rise in gender-based violence. Women living in disaster-prone areas experience more intimate partner violence and undernourishment.
- **Health Risks in Heatwaves:** Women, especially pregnant ones, are more vulnerable to health risks during heatwaves. Prolonged heat exposure

leads to higher risks of preterm birth and other health complications.

**Water Scarcity Impacts:** Climate change affecting water availability increases the burden on women, who typically manage water resources in households. This impacts their time for productive work and health care.

### The women important in climate action:

**Effective Agricultural Practices:** When given the same resources as men, women can increase agricultural yields by 20-30%. This shows their potential in enhancing food security under changing climatic conditions.

**Local Knowledge and Solutions:** Women, particularly from tribal and rural areas, have been at the forefront of environmental conservation. Their involvement can lead to more effective, locally-relevant climate solutions.

**Empowering Women Benefits All:** Empowering women with knowledge, tools, and resources enables them to contribute significantly to climate action. This helps in creating sustainable, community-based solutions.

**Gender-Specific Needs and Strengths:** Recognizing the unique needs and strengths of women in climate action plans leads to more comprehensive and effective strategies. It ensures a gender-balanced approach to climate adaptation and resilience building.

### Way forward:

**Prioritize Vulnerable Groups in Heat-wave Protection:** Implement measures to protect groups like outdoor workers, pregnant women, infants, and the elderly from extreme heat, as cities experience excess deaths during heatwaves.

**Enhance Water Resource Management:** Revitalize traditional rainwater harvesting systems, as exemplified by the work in Tamil Nadu by the M.S.

Swaminathan Research Foundation, to combat water scarcity.

**Empower Local Communities:** Enable village-level decision-making and action, particularly empowering women in panchayats and Self-help Groups, for effective local climate resilience.

**Adopt Gender-Inclusive Climate Policies:** Integrate a gender perspective in State Action Plans on Climate Change, moving beyond stereotypes and acknowledging women as key agents of change.

**Urban Planning for Heat Mitigation:** Adopt strategies like painting roofs with reflective paint, improving tree cover, and enhancing green spaces, as demonstrated by the Mahila Housing Trust in Udaipur, to reduce urban heat effects.

**Mains point: The climate change impacts women and girls differently.**

## 9. Providing better medical assistance to survivors of gender-based violence"

### Context:

This article discusses the need for better medical care and legal support in India for survivors of gender-based violence. It highlights the importance of privacy, survivor-centered care, and changes in the health system and legal policies to support survivors.

### Gender-Based Violence in India:

**Gender-Based Violence (GBV)** includes various forms like intimate partner violence, domestic violence, and non-partner sexual violence.

It encompasses physical, sexual, psychological and economic violence perpetrated against girls, women, and gender-diverse persons.

### The Challenges with GBV Survivors:

**Gender-Based Violence (GBV)** survivors face health challenges like unwanted pregnancies, sexually

- transmitted diseases including HIV, and physical injuries.
- They experience mental health issues such as depression, anxiety, shame, and an increased risk of self-harm or suicide.
- The fear of stigma, blame, and legal issues prevents them from seeking medical care, with only one in 5,000 survivors doing so.
- The medical care system** is not fully survivor-centric, lacking in privacy and comprehensive support.
- Note:** Survivor-centric care involves providing a safe and private space for survivors to get medical and mental health support, with their consent and confidentiality maintained.
- Survivors** often prefer confidential support but are confronted with mandatory police reporting, further deterring them from seeking help.
- Despite One Stop Centers and legal guidelines**, there's still a gap in providing accessible and empathetic care.

#### Way forward:

- Legal reforms** are needed to allow survivors to seek and provide medical care without mandatory police involvement, ensuring their privacy and agency.
- Health system reforms** should focus on simplifying medical protocols at primary care levels, with referral pathways to higher care levels when necessary.
- Survivor-centric care** should be emphasized, moving away from a system overly tied to forensic and legal procedures.
- Training for all healthcare workers** is crucial to equip them with skills for providing empathetic, survivor-centric care. The medical and nursing curriculum should include

comprehensive education on handling GBV cases.

- An exclusive research ecosystem** is necessary to continuously improve health system responses to GBV.
- A collaborative approach** involving medical academia, legal experts, women's rights activists, and policymakers is essential to drive these changes effectively.

**Mains point: The key challenges faced by gender-based violence survivors in India.**

#### 10. Homoeopathy symposium.

##### Context:

Recently, the two-day homoeopathy symposium ended with a call for global collaboration to enhance the efficacy and acceptance of homoeopathy worldwide.

##### About the event:

- The two-day event was inaugurated by President Droupadi Murmu in New Delhi.
- The theme of the event was **"Empowering Research, Enhancing Proficiency the event featured deliberations on homoeopathic research, clinical practice, and market insights."**
- The event highlighted the need for ongoing research, high-quality education, and worldwide cooperation to improve the effectiveness and global acceptance of Homoeopathy.
- Various sessions featured leading homoeopathic practitioners and veterinarians discussing their successful treatments in complex and animal cases.
- Researchers presented significant studies**, while panels addressed topics like translational research, educational reforms, and quality assurance in homoeopathy.
- These discussions among experts and stakeholders led to insightful dialogues

and actionable recommendations for advancing the field.

**International experts shared insights** and success stories in homoeopathy research and practice, motivating attendees to apply these learnings. The event also featured the presentation of STSH/MD Scholarships to students.

### About National Commission for Homoeopathy:

The National Commission for Homoeopathy is a statutory body under the Ministry of AYUSH, Government of India.

**The NCH is responsible for various aspects of homoeopathic education and practice, including:**

- a) Recognition of medical qualifications in homoeopathy.
- b) Establishment of new homoeopathic medical institutions.
- c) Assessment and rating of homoeopathic colleges.
- d) Regulation of professional conduct, etiquette, and code of ethics for practitioners of homoeopathy.

The commission also maintains the National Register for Homoeopathy, a database of certified practitioners.

It is one of the **Professional Councils of University Grants Commission (UGC)**, formed to monitor higher education in India.

### Prelims point: About National Commission for Homoeopathy

#### 11. ASER 2023 Report for better education.

##### Context:

The Annual Status of Education Report (ASER) 2023 was released in mid-January this year. It has highlighted the foundational skill of 14-18-year-old students.

### The findings of the ASER 2023:

**Reading abilities** - The ASER 2023 Beyond Basics survey was carried out in 28 rural districts across 26 States of the country. The report highlighted that overall, 26% of 14-18-year-olds cannot read a standard two-level text in their regional language.

**School Enrollment**-As per the findings of the report, 57% of the 14-18-year-olds surveyed students, who do not have basic reading skills are enrolled in standard 10 or below. 28% of these children are not enrolled in school, college or a vocational institution.

**Fluency and comprehension**-Of the children in standard eight who could not read standard two level text fluently in 2022, almost half could read a standard one level text (i.e., a simple paragraph). Recognizing letters or decoding simple words is not the major challenge most face.

**Access to reading material**-ASER 2022, and later the State of Elementary Education in Rural India Report highlighted that only a small fraction of rural households has reading materials, other than school textbooks.

**Aspiration of students** - The ASER team conducted focus group discussions with children of the 14-18 years old in 3 districts. More than 60% of the surveyed children want to obtain at least a college education, with a higher percentage of girls aspiring for a college education (65%) when compared to boys (59%).

**Vocational Education**- In some places vocational education was looked down upon and perceived to be a last resort for those who couldn't get white-collar jobs whereas in places like Solan in Himachal, it was taken with great enthusiasm due to introduction of relevant e vocational programs like tourism and hotel.



### The reason behind such poor performance of students:

- **Lack of foundational skills in the primary grades-** As per ASER 2018 report, around 32% of standard seven and 27% of standard eight children could not read a standard two-level text. Thus, it becomes extremely difficult for the children to acquire foundational skills in later grades if they have not acquired it in their primary grades.
- **Facing embarrassment-**In 2022, nearly half of the kids in eighth grade who couldn't read at a second-grade level could read at a first-grade level. Recognizing letters or decoding simple words is not the major challenge most face. However, they are often ridiculed and therefore, many of these children start to hate reading.
- **Lack of connections-** As per ASER, almost half of the surveyed 14-18-year-olds who aspire to become a doctor or join the police department, do not have access to anyone working in that profession.

### The way forward:

- **Ending the shame-**There is a need for guidance, practice, and lots of encouragement and motivation to children who are not able to read properly. They must not be ridiculed by anyone.

· **Community libraries-** They can create rich and vibrant spaces that can foster reading, creativity and critical thinking. They need to be managed effectively to rekindle an interest in reading.

· **Leveraging Technology-**There is a need to leverage digital technology to equip youth with the foundations of their aspired professions and bridge connections with relevant professionals. For ex-A student who wants to become nurse can undertake online foundational courses on nursing and related subjects.

· **Utilizing data-** Data provided by various surveys can provide crucial pointers for action. It can help in policy formulation and suggesting corrective actions.

**Mains point: The findings of the ASER 2023? How can these findings help in taking corrective actions.**

## MISCELLANEOUS ISSUES

### 1. Vibrant Villages Programme.

#### Context:

Finance Minister Nirmala Sitharaman has announced the allocation of Rs. 1050 crore for FY25 towards Vibrant Villages Program (VVP) in her interim budget speech.

#### Vibrant Village Programme:



Source- Daily Excelsior

#### About:

- This is a centrally sponsored scheme introduced in the Union Budget 2022-23, to be continued until 2025-26.
- It aims to enhance the living standards of residents in identified border villages by focusing on their development, improving their quality of life, and addressing outmigration along the northern border.

#### Nodal Ministry- Ministry of Home Affairs

**States covered-** The scheme will cover the border regions of Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Sikkim, and Ladakh. A total of 2,962 border villages in five states will be developed under this scheme.

**Vibrant Village Action Plans-** The district administration, in collaboration

with Gram Panchayats, will formulate Vibrant Village Action Plans. These plans will guarantee full coverage of both Central and state schemes, avoiding any overlap with the Border Area Development Programme.

**Growth centres-** The scheme will also develop growth centres on the “**hub-and-spoke model**”. It will be done through the promotion of social entrepreneurship, empowerment of youth and women through skill development and entrepreneurship.

#### Significance:

- It will create livelihood opportunities through agriculture, horticulture, tourism, cultural heritage, skill development, and entrepreneurship.
- The program also seeks to enhance road connectivity, housing, rural infrastructure, energy, television, and telecom connectivity in remote areas.

#### Prelims point: Vibrant Village Programme:

### 2. “Paradip Port becomes numero uno among Indian Major Ports in cargo throughput in FY 2023-24.

#### Context:

Paradip Port has become the country’s highest cargo-handling major port, surpassing Deendayal Port, Kandla, for the first time in 56 years during the financial year 2023-24.

#### About Paradip Port:

Aspect	Details
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Type

Paradip Port is a natural, deep-water port.

Location

1. It is located on the East coast of India in Jagatsinghpur district of Odisha.
2. It is located at the confluence of the Mahanadi river and the Bay of Bengal.

**Port Administration**

The port is managed by the Paradip Port Trust (PPT), an autonomous corporation operating under the Ministry of Shipping through the Major Port Trusts Act, 1963.

**Significance**

1. Paradip is one of India’s major ports and the sole major port in Odisha.
2. It holds the distinction of being the first major port on the East Coast to be commissioned after independence.

**Port Administration in India**



Source- ResearchGate

- In India, there are three types of ports: major, minor and intermediate.
- Major ports are managed by the Central Government, while minor and intermediate ports are overseen by nine coastal states of Andhra Pradesh, Goa, Gujarat, Karnataka, Kerala, Mahara-

shtra, Odisha, Tamil Nadu and West Bengal.

India has 205 minor and intermediate ports, along with 13 major seaports (12 government-owned and one private), collectively handling substantial business.

**Difference between Major and Minor ports:**

Major Port	Minor Port
They are overseen by port trusts and the central government.	They are controlled, managed by the state government.
They handle international trade	They handle coastal and fishing trade
Example - Mumbai, Paradip	Example- Kannur (Kerala)

**Prelims point:Paradip Port**

3. **Melting ice sheets may postpone need for ‘negative leap second.**

**Context:**

According to a recent study, **Earth’s changing rotation**, influenced by factors such as climate change and geological shifts, may result in clocks skipping a second, potentially leading to the need for a “**negative leap second**” around 2029.

**Leap Second:**



Source- Time and Date

- **About-** It is a one-second adjustment used to address the gradual slowdown of Earth’s rotation, caused by the continuous melting and refreezing of ice caps.

- Introduced by- International Earth Rotation and Reference Systems Service in 1972.
- Addition of leap second-** It is periodically added to Coordinated Universal Time (UTC) to keep clocks worldwide synchronized with atomic time and to compensate for the Earth's gradually slowing rotation. So far, 27 positive leap seconds have been added.
- Reason for addition-** Earth's rotation on its axis is not consistent; it can speed up or slow down due to factors like the moon's gravitational pull, which leads to ocean tides.
- Usual date of addition-** A leap second is typically added either on June 30th or December 31st.

### Negative leap Second:

- About-** It is a second that is removed from our clocks to maintain synchronization with the Earth's rotation. So far, no negative leap second has been needed because the Earth's rotation has generally been slightly slower over the past few decades.
- Administration-** The International Earth Rotation and Reference Systems Service (IERS) oversees Earth's rotation and determines when to add or subtract a leap second.
- Recent impact-** Recently, because the Earth has been spinning faster than usual, timekeepers thought about using negative leap seconds for the first time.

### Prelims point: Earth's changing rotation, i

#### 4. Kallakkadal: A phenomenon leading to floods in Kerala .

##### Context:

Recently, numerous homes in Kerala's coastal regions have been flooded due to high sea waves, which are referred to as swell waves. These flooding incidents are termed swell surge or Kallakkadal in Malayalam.

### Kallakkadal:



Source- The Hindu

- About- Kallakkadal refers to coastal flooding caused by swell waves during the pre-monsoon season (April-May) and sometimes during post monsoon along the southwest coast of India.

### Meaning:

- The term "Kallakkadal," coined by local fishermen, combines two Malayalam words: "Kallan," meaning thief, and "Kadal," meaning sea. When spoken, these words were combined as "Kallakkadal," signifying the sea arriving like a thief.
- In 2012, UNESCO formally approved this term.

### The causes of Kallakkadal:

#### Ocean swell and distant storms:

- It is caused by waves formed by ocean swells, which originate from distant storms such as hurricanes or prolonged periods of intense gale winds.
  - These storms transfer significant energy from the air into the water, resulting in the formation of extremely high waves.
  - These waves can travel vast distances from the storm centre until they reach the shoreline.
- Formation-** Typically, Kallakkadal occurs due to strong winds in the southern Indian Ocean, where ocean swells are generated. These waves then travel northward, taking around two to three days to reach the coastline.



### Challenges in its Preparedness

- Kallakkadal happens suddenly without local wind activity, making it hard for coastal residents to receive advance notice.
- Yet, systems like the Swell Surge Forecast System, initiated by the **Indian National Centre for Ocean Information Services (INCOIS) in 2020**, provide a seven-day warning.

### The different from Tsunami:

#### Kallakkadal

Kallakkadal is a sudden flash flood event that happens without any apparent change in local winds.

It is caused by strong winds.

#### Tsunami

A tsunami is a massive wave series caused by underwater disturbances.

It is caused by earthquakes.

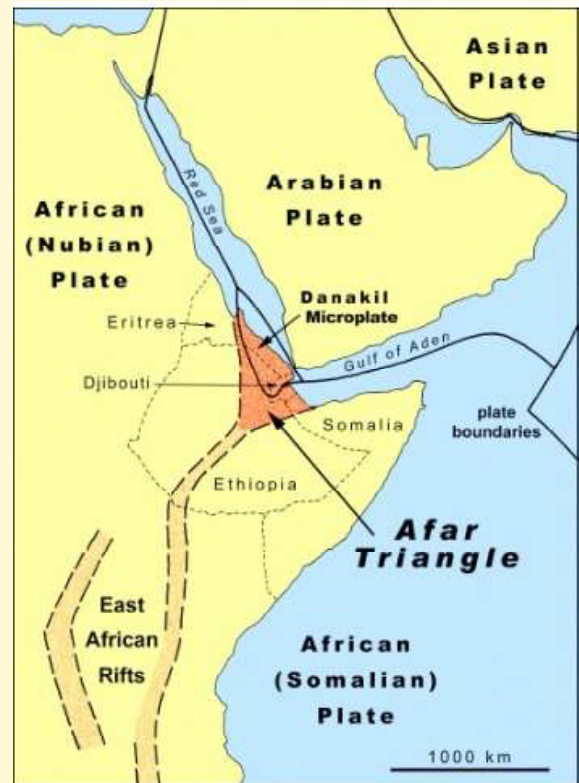
### Prelims point: Kallakkadal

## 5. Africa's Afar Triangle.

### Context:

Recent geological discoveries indicate that the Afar Triangle in Africa may become the origin of a new ocean within the next 5 to 10 million years.

### About Africa's Afar Triangle:



Source- ResearchGate

- **The Afar Triangle**, located in the Horn of Africa, is a geological depression where three tectonic plates- the Nubian, Somali, and Arabian plates- meet.
- In addition to its geological importance, the Afar Triangle has a rich palaeontological history, revealing fossils of some of the earliest hominins.
- It is part of the Great Rift Valley in East Africa.
- It spans across Eritrea, Djibouti, and the Afar Region of Ethiopia.
- It contains Lake Assal, which is Africa's lowest point.
- It is bordered by the Ethiopian Plateau, the Danakil block, the Somali Plateau, and the Ali-Sabieh block.

### The causes for the rift in Afar region:

#### Tectonic movements and rift expansion:

- The Afar region has undergone gradual tectonic shifts over millions of years. In 2005, a big crack appeared in the Ethiopian desert, showing how Africa is still splitting apart due to these forces.

- A significant contributor to the rifting process is thought to be a massive plume of superheated heated rocks ascending from the mantle beneath East Africa.
- The presence of magma in the area, especially around the Erta Ale volcano, provides insights into the tectonic shift.
- **Note-** Rifting is a geological process when the Earth's outer layer gets stretched and thinned, creating rift valleys or basins. This happens mostly at divergent plate boundaries, where tectonic plates move apart.

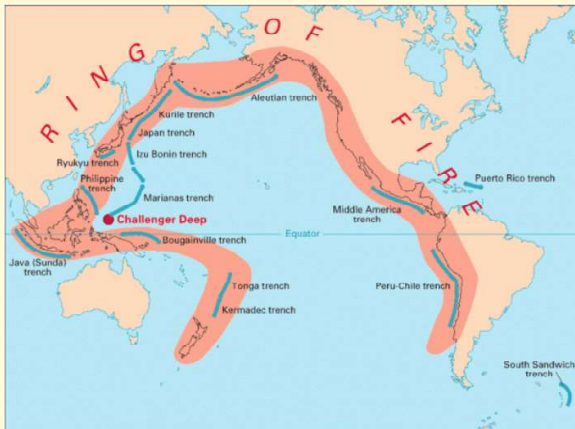
**Prelims point: Tectonic movements and rift expansion**

## 6. Pacific 'Ring of Fire'

### Context:

Recently, a massive earthquake hit Taiwan, resulting in the loss of many lives. Taiwan is prone to earthquakes because it lies along the Pacific "Ring of Fire," where 90% of the world's earthquakes take place.

### Pacific 'Ring of Fire':



Source- The Indian Express

- The Ring of Fire, also known as **the Circum-Pacific Belt**, is a chain of numerous volcanoes and earthquake-prone areas that stretches along the Pacific Ocean.
- It forms a horseshoe-shaped semicircle, spanning approximately 40,250 kilometres in length.

- The Ring of Fire marks the borders between multiple tectonic plates such as **the Pacific, Juan de Fuca, Cocos, Indian-Australian, Nazca, North American, and Philippine Plates**.
- It passes through 15 additional countries, including the USA, Indonesia, Mexico, Japan, Canada, Guatemala, Russia, Chile, Peru, and the Philippines.

### Features of Ring of Fire:

#### Active volcanoes:

- Volcanoes in the Ring of Fire** are caused by the movement of tectonic plates, often through a process called subduction. This occurs when two plates collide, with the heavier one being pushed beneath the other, resulting in the formation of deep trenches.
- The Ring of Fire hosts over 450 active and inactive volcanoes**, making up 75% of the Earth's total volcanoes. These volcanoes form a semicircle or horseshoe shape around the Pacific Ocean rim.
- The majority of active volcanoes along the Ring of Fire are located on its western side, spanning from Russia to New Zealand.

#### Earthquakes:

- The Ring of Fire experiences frequent earthquakes because the tectonic plates continuously slide past, collide with, or move above or below each other.
- 90% of earthquakes happen along the Ring of Fire, including some of the most powerful ones. For example- The Valdivia Earthquake in Chile in 1960, which measured 9.5 on the Richter scale, holds the record as the strongest earthquake ever recorded.

#### 3. Trenches:

- The Ring of Fire includes **the Mariana Trench**, the deepest ocean trench, which reaches a depth of 7 miles.

- b. Other trenches in the area include the Philippine Trench, Challenger Trench, Kuril-Kamchatka Trench, Peru-Chile Trench, and Tonga Trench.

### Prelims point: Pacific 'Ring of Fire'

## 7. Suvidha Portal.

### Context:

Since the announcement of General Elections 2024, over 73,000 applications have been received on Suvidha Portal.

### About Suvidha portal:



Source: PIB

- The Suvidha portal represents a technological advancement dedicated to upholding the principles of openness, fairness, and transparency in elections, ensuring a fair playing field.
- This portal was developed by the Election Commission of India (ECI).
- It operates on first-come-first-served basis.
- It caters to permissions for organizing rallies, opening temporary party offices, door-to-door canvassing, video vans, helicopters, obtaining vehicle permits, distributing pamphlets.
- It provides a convenient online system for political parties and candidates to apply for permissions at any time from anywhere. It has offline submission options also, which guarantee universal access.

- The Suvidha portal enhances the electoral process by offering real-time tracking of applications, updates on status, and SMS notifications. This improves both efficiency and transparency.

- It also supports the scrutiny of election expenditures by making permission data readily available. Thus it fosters greater accountability and integrity.

### Prelims point: The Suvidha portal

## 8. Washington treaty.

### Context:

Foreign Ministers of NATO have recently gathered at its headquarters in Brussels to mark 75 years since the signing of the Washington Treaty.

### About Washington treaty:

- Description-**The Washington Treaty, or North Atlantic Treaty, forms the basis of the North Atlantic Treaty Organization (NATO). It is a short treaty containing only 14 articles.
- Date of signing of treaty-**The Treaty was signed in Washington, D.C. on 4 April 1949, by 12 founding members.
- Authority-**The Treaty derives its authority from Article 51 of the United Nations Charter. This article reaffirms the inherent right of independent states to their individual or collective defence.
- Collective defence-**It means that an attack against one Ally is considered as an attack against all Allies. This is at the heart of the treaty and is enshrined in Article 5.

### The significance of Washington treaty:

- The Alliance has ensured peace, democracy and prosperity for its members, now counting 32 Allies and one billion people on both sides of the Atlantic
- Despite the change in the security environment in the last few decades, the original treaty has remained unchanged, and each ally has the potential to



implement it according to their capabilities and circumstances.

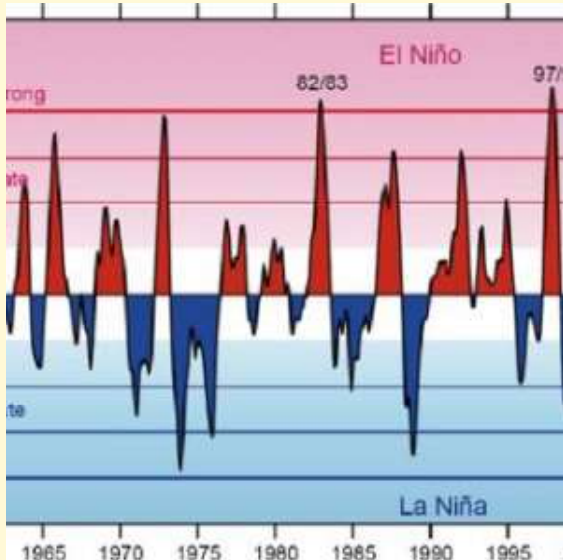
**Prelims point: The significance of Washington treaty**

## 9. Oceanic Niño Index.

**Context:**

The US National Oceanic and Atmospheric Administration (NOAA) has predicted that there is a 83% chance that the Oceanic Niño Index (ONI) will move into a neutral range by April-June 2024. It is predicted that El Niño event will not take place due to ONI moving into neutral range.

**About Oceanic Niño Index (ONI):**



Source-ReserchGate

ENSO is measured by two indices- Oceanic Niño Index and Southern Oscillation Index- Oceanic Niño Index (ONI) is the primary indicator for monitoring the ocean part of El Niño-Southern Oscillation, or "ENSO". Southern Oscillation Index (SOI) is the primary indicator for monitoring the atmospheric part of ENSO.

The ONI tracks the running 3-month average sea surface temperatures in the east-central tropical Pacific between 120°-170°W, near the International Dateline. It also determines whether they are warmer or cooler than average.

ONI values are used to predict El Niño and La Niña-

ONI Value	Meaning	Event Predicted
+0.5 or higher	Surface waters in the east-central tropical Pacific are 0.5 degrees Celsius or more warmer than average.	El Niño
-0.5 or lower	Surface waters in the east-central tropical Pacific are 0.5 degrees Celsius or less cooler than average.	La Niña

## El Niño and La Niña:

**Description-**El Niño and La Niña are two opposing climate trends that deviate from the normal conditions and normally run 9 to 12 months. El Niño is known as the warm phase and La Niña is known as the cold phase of ENSO.

**Frequency-** These events occur every 2 to 7 years on average. El Niño is more frequent than La Niña. They are together referred to as the El Niño-Southern Oscillation (ENSO) cycle by scientists.

**Impacts-** Both El Niño and La Niña have global effects on weather, wildfires, ecosystems and economics.

**Prelims point:El Niño and La Niña**

## 10. Girl Empowerment Mission.

**Context:**

Recently, NTPC launched a new edition of the Girl Empowerment Mission.

**About Girl Empowerment Mission (GEM):**



Source: PIB



- It is the flagship Corporate Social Responsibility initiative.
- The program aligns with the Government of India's Beti Bachao, Beti Padhao initiative.
- It aims to tackle gender inequality by nurturing girls' imaginations and fostering their ability to explore opportunities.
- GEM facilitates** empowerment by conducting a one-month workshop for young girls over the summer break, providing a platform for their comprehensive development and empowerment.
- The Mission is dedicated to empowering girls by identifying and fostering their leadership skills to prepare them for the future. It includes interventions that focus on health, hygiene, safety, fitness, sports, and yoga.
- Success of the initiative:** The GEM Mission has grown into a national movement. Despite COVID-19 setbacks in 2020 and 2021, it has continued to expand, benefiting 7,424 girls to date.
- In 2023, the program reached 2,707 girls across 40 NTPC locations in 16 Indian states.

**Prelims point: About Girl Empowerment Mission (GEM)**

## 11. International Narcotics Control Board.

### Context:

India's Jagjit Pavadia has recently been re-elected for a third term to the International Narcotics Control Board.

### About International Narcotics Control Board:



Source-CRW Flags

**Aspect**                      **Details**

### Description

It was established in 1968. This board is the independent and quasi-judicial monitoring body for the implementation of the United Nations international drug control conventions.

### Members

It consists of 13 members who are elected by the Economic and Social Council. The members serve in their personal capacity and are not government representatives. Out of 13 members, 3 members with medical, pharmacological, or pharmaceutical experience are chosen from a list nominated by the World Health Organization (WHO), and 10 members are chosen from a list nominated by governments.

### Mandate

- 1) It ensures adequate supplies of drugs for medical and scientific uses.
- 2) It ensures that drugs are not diverted from a legal source to illegal ones.
- 3) It monitors Governments' control over chemicals used in the illicit manufacture of drugs and assists them in preventing the diversion of those chemicals into illicit traffic.

**Prelims point: International Narcotics Control Board:**

## 12. Prerana Program.

### Context:

Recently, the Secretary of the Department of School Education and Literacy (DoSEL) addressed the first alumni meeting of the Prerana Program.

### About Prerana Program:



Source: prerana.education.gov.in

- . **About:** Prerana is an experiential and inspirational learning program for students with the best-in-class technology where heritage meets innovation.
- . **Launched by:** Department of School Education & Literacy, Ministry of Education, Government of India
- . **Aim:** To offer a meaningful, unique, and inspiring experience to all participants and empowering them with leadership qualities.

### Salient Features of the programme:

- a) It is a week-long residential program for selected students of class IX to XII.
- b) PRERANA started in the pilot phase from January to February 2024 in the Vernacular school at Vadnagar, Mehsana, Gujarat. The 6th batch will start from 15th April 2024.
- c) In this phase, the Prerana program has been held for five batches of 20 participants each from five states and one Union Territory.
- d) Prerana combines experiential learning with cutting-edge technology, bridging traditional heritage with modern innovation.
- e) **The curriculum is built around nine core values:** Dignity and Humility, Valor and Courage, Hard Work and

Dedication, Compassion and Service, Diversity and Unity, Integrity and Purity, Innovation and Curiosity, Faith and Trust, and Freedom and Responsibility.

- f) These themes aim to instill a deep respect for India's diverse culture and promote the philosophy of "**Vasudhaiva Kutumbakam**" (the world is one family).
- g) **The day-wise program includes yoga, mindfulness, and meditation, alongside thematic experiential learning and engaging hands-on activities.** Evening activities will include visits to ancient and heritage sites, inspirational film screenings, mission life creative activities, talent shows etc. ensuring a holistic learning approach.

### Prelims point: About Prerana Program