


# UPDATED CLASSROOM STUDY MATERIAL-2

(April 2024 to 15<sup>th</sup> May 2024)

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# PT 365 UPDATED PART 2

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CHANDIGARH: 20 JUNE

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**Dear Students,**

PT 365 documents comprehensively covers the important current affairs of last 1 year (365 days) in a consolidated manner to aid Prelims preparation.

In our endeavour to further enhance the document in the interest of the aspirants, following additions have been incorporated:



**Consolidated Maps:** They have been added to provide geographical and contextual information about different places in news. These include-

- Individual maps for each Country or Place mentioned in the news.
- Comprehensive Continent-wise maps for quick reference.
- Maps depicting Multilateral Groupings.
- Maps indicating bilateral military exercises.



**Summarised Infographics:** Indicating important facts to improve ease of understanding, provide for smoother learning experience and ensure enhanced retention of the content.



**Institutions/Organizations in News:** Important information about major Institutions and Organizations which have been recurring in news has been provided.



**Quiz:** QR based Smart quiz has been added to test the aspirant's learnings and understanding.

Also, the **PT 365 Updated 2 contains a section of Schemes in news** (an **update** to the document – **Government Schemes in News**). To read the document – Government Schemes in News, kindly scan the QR code.

**SMART QUIZ**

You can scan this QR code to practice the smart quiz at our open test online platform for testing your understanding and recalling of the concepts.

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
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# 1. POLITY AND GOVERNANCE

## 1.1. FISCAL FEDERALISM

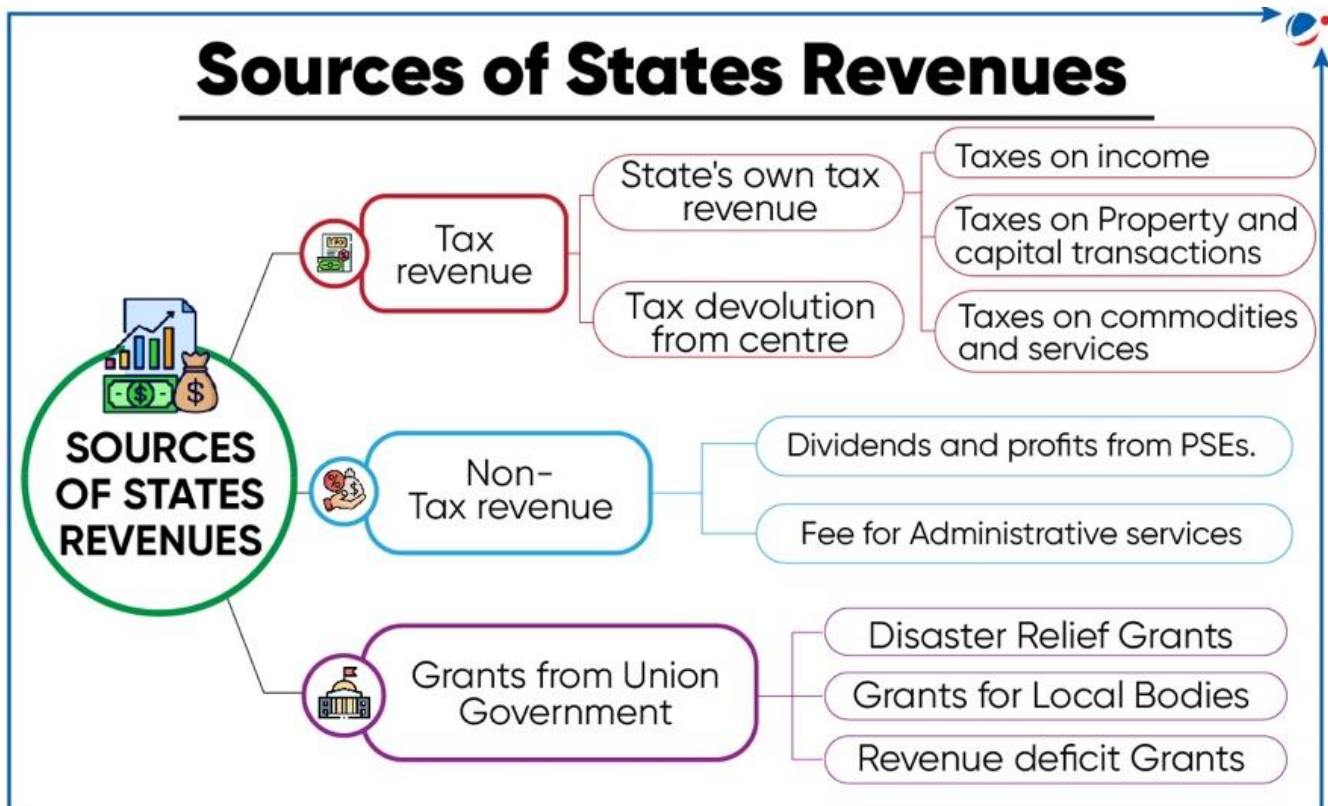
### Why in the news?

Recently, some states have moved the Supreme Court against the Centre for disputes over sharing of financial resources by the Central Government.

### Fiscal Federalism

- Refers to how **Union, state, and local governments share funding and administrative responsibilities within India's federal system.**

### Constitutional Provisions defining India's Fiscal Federalism



- Seventh Schedule:** Constitution delineates tax bases between the Union and States listing them in the Union List and the State List respectively (**Article 246**).
- Distribution of Revenue**
  - Taxes levied and collected by the centre, but wholly assigned to the states (Article 269).
  - Levy and Collection of Goods and Services Tax (GST) in course of **Inter-State Trade or Commerce (Article 269A)**, which is distributed between Centre and States based on **recommendations of GST Council**.
  - Taxes levied and collected by the union and distributed between the union and the states (**Article 270**) based on the **recommendations of Finance Commission**.
- Grants-in-Aid**
  - Statutory Grant (Article 275):** Grants-in-aid of the revenues of such States as Parliament may determine to be in need of assistance.
    - ✓ Different sums may be fixed for different States.
  - Discretionary Grants (Article 282):** Union or a State may make any grants for any public purpose, even beyond their legislative competence.

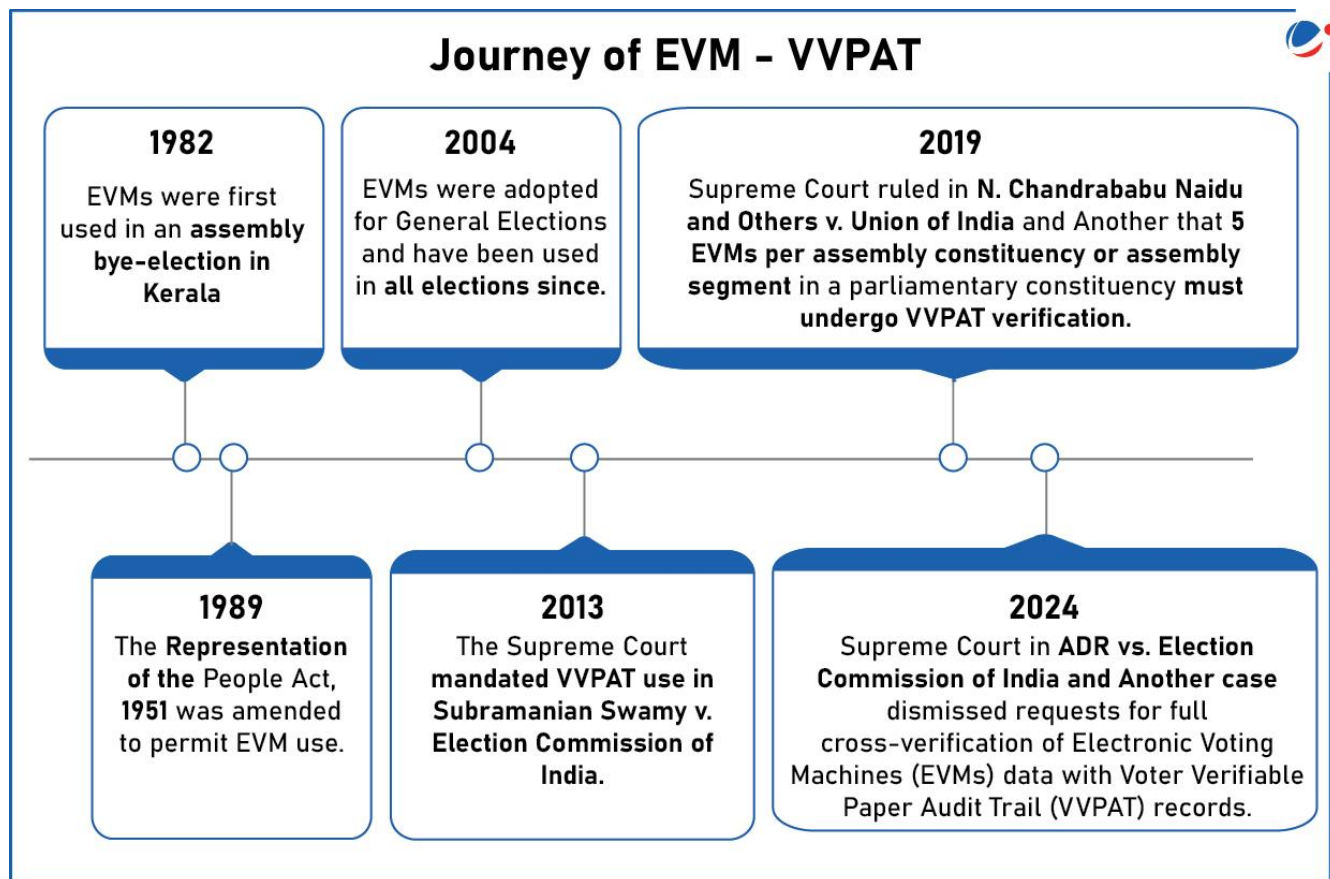
- **Borrowings:** As per **Article 292**, the union government has powers to borrow money either **within or outside the country** while under **Article 293**, a **state government can borrow within India (and not abroad)**.
  - Also, if a **state is indebted to the Union**, it may not resort to further borrowing without the prior consent of the **Union Government**.
- **Finance Commission:** Article 280 provides for a Finance Commission (constituted by President after every five years, or earlier) to **adjudicate sharing of resources** between Union and States.

## 1.2. EVM-VVPAT

### Why in the News?

In **Association for Democratic Reforms vs Election Commission of India and Another** (2024) the Supreme Court dismissed requests for full cross-verification of Electronic Voting Machines (EVMs) data with Voter Verifiable Paper Audit Trail (VVPAT) records.

### About EVM-VVPAT



- **Electronic Voting Machine (EVM)** is a **portable microcontroller-based instrument** designed to modernize the Election process.
  - It is manufactured and supplied to the ECI by **Bharat Electronics Limited** (under the Ministry of Defense) and **Electronic Corporation of India Limited** (under the Department of Atomic Energy).
- **It consists of 3-units**
  - **Ballot unit:** Functions like a keyboard with 16 buttons/ key.
  - **Control unit:** Also called as the master unit, remains with the polling/presiding officer
  - **VVPAT:** Allows the voters to **verify that their votes are cast as intended**.
    - ✓ When a vote is cast, a **slip is printed** containing the **serial number, name and symbol of the candidate**
    - ✓ This **slip is visible through a transparent window for 7 seconds** before it automatically **cuts and drops into a sealed box**.



- ✓ It was introduced to have the **fullest transparency in the voting system** and to restore the confidence of the voters by ensuring the accuracy of the voting system using EVMs.
- **Note:** Goa was the first state to use VVPATs with all EVMs during its 2017 Legislative Assembly election.
  - VVPATs were fully deployed in the 2019 Lok Sabha General Elections.

**Advantages of the EVM-VVPAT**

- It runs on battery and **does not require any external power supply.**
- **Negating a scenario of an invalid vote** akin to an invalid paper ballot.
- It does not permit more than 4 votes per minute, thereby **detering booth capturing.**
- After pressing the 'CLOSE' button on the control unit, there is **no possibility of voting.**
- By pressing the 'TOTAL' button on the control unit at any time, the **total number of votes polled up to the time** of pressing the button is displayed, without indicating the candidate-wise result of votes.
- It is **not possible to pre-program the EVM** in a spurious manner.

**1.3. NATIONAL HUMAN RIGHTS COMMISSION (NHRC)**

**Why in the news?**

Recently, the United Nations-linked Global Alliance of National Human Rights Institutions (GANHRI) **deferred the accreditation of the NHRCI for the second year** in a row.

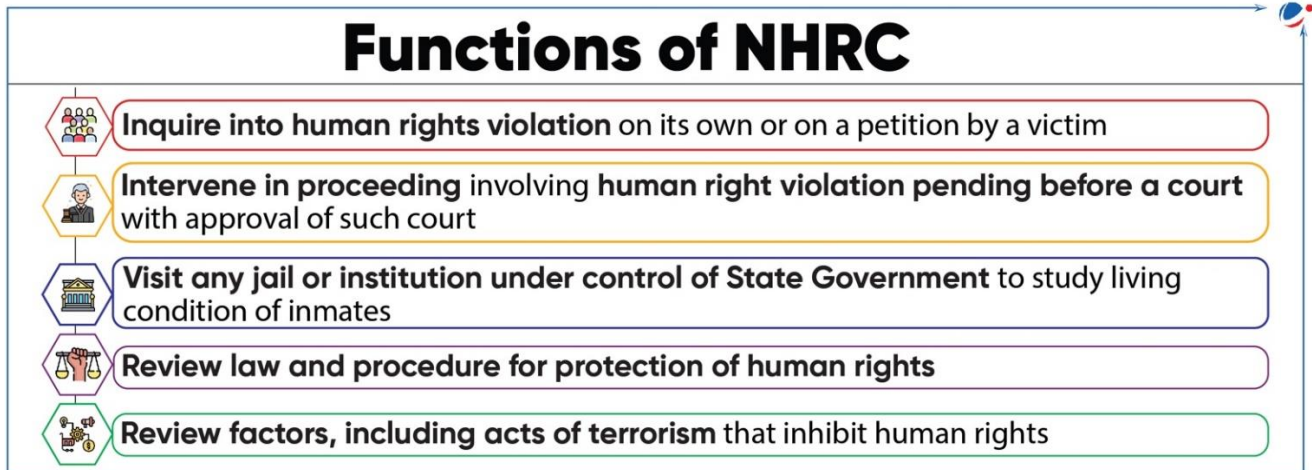
**About National Human Rights Commission (NHRC)**

- **Headquarters:** New Delhi
- **Genesis:** It is a statutory body, established **under the Protection of Human Rights Act (PHRA), 1993** as amended in 2006 and 2019.
  - **PHRA defines Human Rights** as the rights relating to life, liberty, equality and dignity of the individual. These rights are **guaranteed by the Constitution** or embodied in International Covenants and are **enforceable by courts in India.**
- **Appointment:** Chairperson and Members of the Commission are **appointed by the President of India**, on the recommendations of a **committee, headed by the Prime Minister**, consisting of:
  - Speaker of Lok Sabha
  - Minister-in-Charge of Union Ministry of Home Affairs
  - Leader of Opposition in Lok Sabha and Rajya Sabha
  - Deputy Chairman of Rajya Sabha

Composition of NHRC		
Chairperson	5 full-time Members	7 deemed Members
<ul style="list-style-type: none"> <li>▶ Retired Chief Justice of India or a Judge of the Supreme Court</li> </ul>	<ul style="list-style-type: none"> <li>▶ Retired or serving Judge of the Supreme Court</li> <li>▶ Retired or serving Chief Justice of a High Court</li> <li>▶ 3 other members to be appointed from persons having <b>knowledge and practical experience</b> in matters of human rights, <b>one of whom shall be a woman.</b></li> </ul>	<ul style="list-style-type: none"> <li>▶ Chairpersons of                             <ul style="list-style-type: none"> <li>▷ National Commission for Minorities</li> <li>▷ National Commission for Backward Classes</li> <li>▷ National Commission for Scheduled Castes</li> <li>▷ National Commission for Scheduled Tribes</li> <li>▷ National Commission for Protection of Child Rights</li> <li>▷ National Commission for Women</li> </ul> </li> <li>▶ Chief Commissioner for Persons with Disabilities</li> </ul>

- **Tenure:** Chairperson and members of NHRC will hold office for **three years or till the age of seventy years**, whichever is earlier.
  - The Chairperson and members both are **eligible for reappointment.**
- **Removal:** Both Chairperson and members can be removed from office **by order of the President on the ground of proved misbehaviour or incapacity** after consultation with the **Supreme Court.**
- **Powers of NHRC:** It has all the **powers of a civil court trying a suit under the Code of Civil Procedure, 1908** and in particular in respect of the following matters, namely:

- **Summoning and enforcing the attendance of witnesses** and examining them on oath;
- **Discovery** and production of any document;
- **Receiving evidence** on affidavits;
- **Requisitioning any public record** or copy thereof from any court or office;
- Issuing commissions for the examination of witnesses or documents.
- **Limitations of NHRC**
  - Cannot investigate cases if the **complaint was made more than one year after the incident**.
  - For **violation of human rights by armed forces**, NHRC can seek report from the Union Government and then issue recommendations.
    - ✓ **State Human Rights Commissions**, however, **cannot even call for information from the Union Government** regarding violation of human rights by armed forces.



## 1.4. MISLEADING ADVERTISEMENTS

### Why in the News?

Supreme Court (SC) asked the Government to **act on FMCG (Fast-Moving Consumer Goods) firms using misleading advertisements**.

### About Misleading Advertisements

- Misleading advertising is **any published claim** that gives a consumer an **incorrect understanding of the product or service**.
- Under **Consumer Protection Act 2019**, an advertisement is misleading if it
  - Falsely describes a product/service,
  - Gives a false guarantee to nature, quantity or quality of product/service,
  - Represents unfair trade practice, or
  - Deliberately conceals important information.

### Initiatives taken to combat misleading advertisements

- **'Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022'** issued by Central Consumer Protection authority (CCPA).
- **Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954**: It prohibits advertisement for remedies alleged to possess magic qualities.
- **Consumer Protection Act, 2019**: Establishes CCPA to regulate matters relating to misleading advertisements.
- **Food Safety and Standards Act, 2006**: Penalty for misleading advertisements pertaining to food.

#### Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954

- Misleading claims are prohibited under the **Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954**.



- **Section 4** of the Act **prohibits advertisements** that give **false impressions** regarding the true character of the drug.
- **Section 5 prohibits the Advertisement of Magic Remedies** for treatment of certain diseases and disorders.
  - ✓ magic remedies are defined as **any charm** (talisman, mantra, kavacha, etc.), **alleged to possess miraculous powers** for diagnosis, cure, mitigation etc.

## 1.5. OTHER IMPORTANT NEWS RELATED TO ELECTIONS

### 1.5.1. DISCLOSURE OF ASSETS BY ELECTION CANDIDATES

- Supreme Court, while hearing an appeal on election petition, held that **election candidates have right to privacy** as regards to matters which are of no concern to voters or are irrelevant to candidature of public life.
  - It is **not necessary that a candidate declare every item of movable property** that he or his dependent family members own, such as clothing, shoes, crockery, stationery and furniture, etc.
- **Statutory provisions regarding declarations by Election candidates**
  - **Section 33 of the Representation of People's Act (RPA), 1951:** Deals with nominations for election of candidates and presentation of valid information.
  - **Section 36 of RPA, 1951:** Provides for scrutiny of nomination and empowers returning officer to reject nominations on grounds of any **defect of 'substantial character'**.

### 1.5.2. HOME VOTING

- Election Commission of India (ECI) for the first time provides facilities of home voting in coming 2024 election.
- **About Home Voting Facility**
  - Under this, **voting from home takes place** with involvement of a full contingent of polling staff and security personnel with **secrecy of voting** diligently maintained.
  - **Beneficiaries**
    - **Persons with disabilities (PwDs)** meeting **40% benchmark disability**.
    - Senior citizens aged **above 85 years**.

### 1.5.3. RE-POLLING

- Election Commission of India conducted re-polling for the ongoing Lok Sabha General Elections in various polling stations of Manipur and Arunachal Pradesh.
- **Provisions related to Re-polling under the Representation of the People Act (RPA), 1951**
  - **Circumstances under which re-polling is needed**
    - ✓ **Section 57:** On account of natural calamity, violence, etc.
    - ✓ **Section 58(2):** Due to damage or destruction of voting machines.
    - ✓ **Section 58A:** Countermanding of election on account of Booth capturing.
    - ✓ **Section 52:** On account of death of candidate of recognised political party (National party/ State party).

### 1.5.4. RIGHT TO CONTEST ELECTION AND RIGHT TO VOTE OF PRISONERS

- **Contesting:** A convicted person, **sentenced to imprisonment for 2 years, cannot contest election** (Section 8 (3) of Representation of People Act or RPA, 1951).
  - Such person shall **continue to be disqualified for a further period of six years since his release**.
  - Even if such convicted person is on bail, they cannot contest election.
- **Voting:** **A person confined in a prison cannot vote** (Section 62(5) of the RPA, 1951).
  - It is applicable to persons under a **sentence of imprisonment or transportation or is in the lawful custody of the police**.
  - A **person under preventive detention is entitled to vote** in an election (Section 62(5) of the RPA, 1951 and Rule 18 of Conduct of Elections Rules 1961).

## 1.6. OTHER IMPORTANT NEWS

### 1.6.1. CURATIVE PETITION

- Supreme Court (SC) quashes arbitral award against Delhi Metro Rail Corporation.
- **Curative Petition:** It's the last constitutional remedy available to a person whose review petition (Article 137) has been dismissed by SC.
- Given shape in **Rupa Ashok Hurra v. Ashok Hurra & Anr. Case (2002)**
  - The curative power of the Court flows from Articles 129 (Court of Record) and 142 (power to do complete justice).
- **Supreme Court could entertain a curative petition under the following grounds**
  - Violation of principles of natural justice.
  - Question of bias against the presiding judge.
  - Abuse of the process of the court.

### 1.6.2. DOCTRINE OF HARMONIOUS CONSTRUCTION

- While refusing to condone the delay, **Supreme Court laid down principles to provide harmonious construction** to Sections 3 and 5 of **Limitation Act, 1963.**
  - Notion of Condonation of delay encompasses **discretionary power of a court to extend prescribed time limit for filing an appeal/application.**
- **About Doctrine of Harmonious Construction**
  - It means that when there arises a **conflict between different statutes or between the statutes**, in such circumstances, courts try to **interpret them in a way that makes them work together smoothly** instead of declaring other statutes void.
  - Its **origin is traced back to first amendment** made in judgment of **Shankari Prasad v. Union of India (1951).**

**फाउंडेशन कोर्स  
सामान्य अध्ययन  
प्रारंभिक एवं मुख्य परीक्षा 2025**

**इनोवेटिव क्लासरूम प्रोग्राम**

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करेंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- सीसैट कक्षाएं
- PT 365 कक्षाएं
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- PT टेस्ट सीरीज
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- निबंध टेस्ट सीरीज
- सीसैट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

नोट: ऑनलाइन छात्र हमारे पाठ्यक्रम की लाइव वीडियो कक्षाएं अपने घर पर ऑनलाइन प्लेटफॉर्म पर देख सकते हैं। छात्र लाइव चैट विकल्प के माध्यम से कक्षा के दौरान अपने संदेह और विषय संबंधी प्रश्न पूछ सकते हैं। वे अपने संदेह और प्रश्न नोट भी कर सकते हैं और दिल्ली केंद्र में हमारे कक्षा सलाहकार को बता सकते हैं और हम फोन/मेल के माध्यम से प्रश्नों का उत्तर देंगे।

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Master

# UPSC PRELIMS CHALLENGES in CURRENT AFFAIRS with VISIONIAS PT365



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## 2. INTERNATIONAL RELATIONS

### 2.1. MULTILATERAL ORGANISATIONS

#### 2.1.1. AUKUS

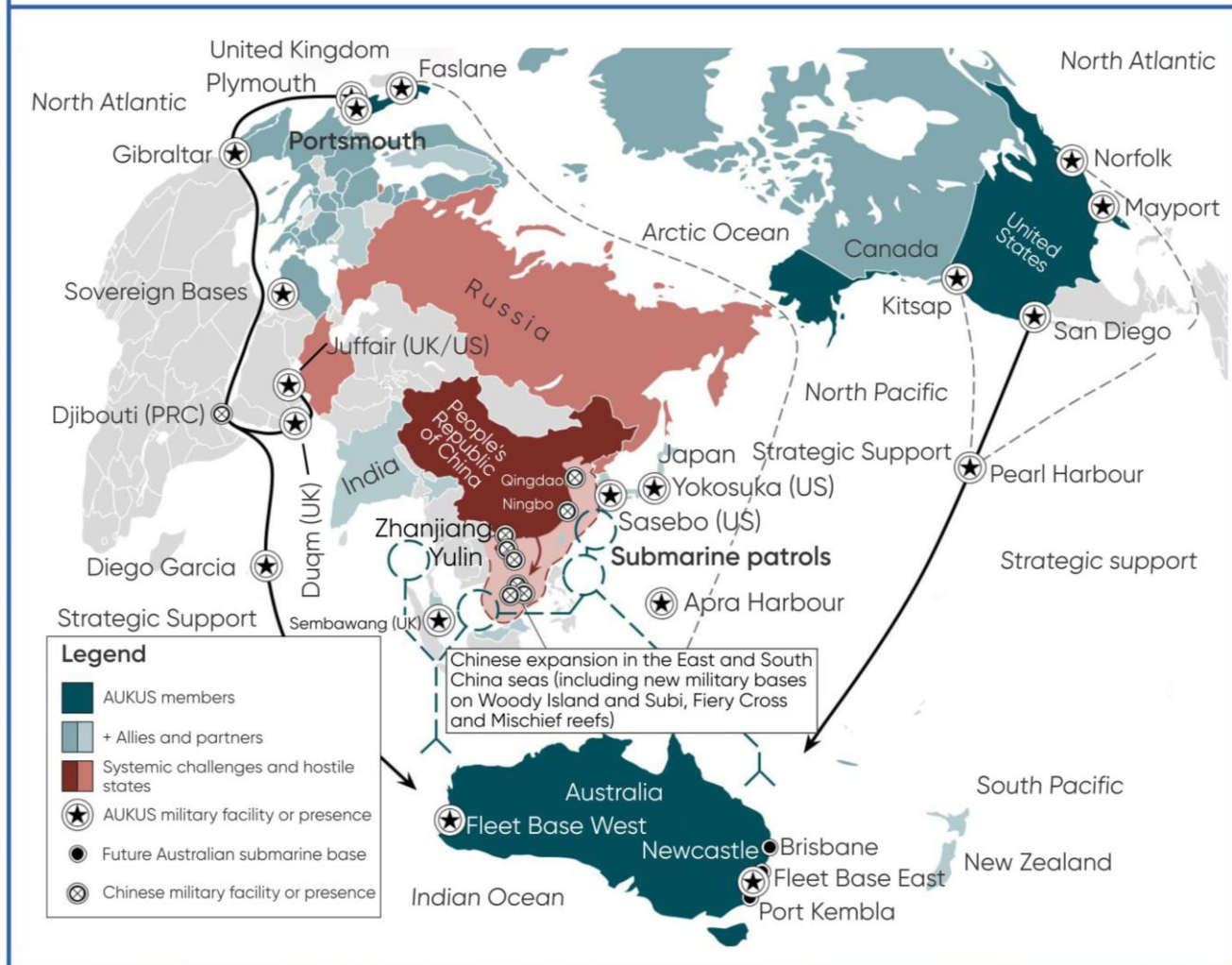
##### Why in the news?

AUKUS members are considering **cooperation with Japan on advanced capabilities projects.**

##### More on news

- Japan's inclusion in Pillar II (not a new full member yet) could enhance alliance partnerships, capability integration and standardisation, as well as potentially rationalise export control and information security regulations among the four countries.
  - Japan already has a close bilateral defense partnerships with all three countries (**Australia, the UK and US**)

### The Geopolitics of AUKUS



##### About AUKUS

- **Genesis:** Announced in 2021.

- **Nature:** It is a new three-way strategic defence alliance between **Australia, the UK and US.**
- **Aim:** To boost defense capabilities, accelerate technological integration, and expand the industrial capacity of all three countries.
- AUKUS partnership is composed of **two pillars:**
  - **Pillar I – Conventionally Armed, Nuclear-Powered Submarines:** Under it, UK and USA are helping Australia acquire nuclear-powered submarines.
  - **Pillar II – Advanced Capability Development:** Focused on developing joint capabilities to enhance interoperability with focus on cyber capabilities, artificial intelligence, quantum technologies and additional undersea capabilities etc.
- AUKUS primarily serves as a framework for advancing defense technologies, rather than an alliance committed to defense during contingencies.
- For facilitating sharing of critical technology, a **legally binding tripartite agreement** known as the Exchange of Naval Nuclear Propulsion Information Agreement (ENNPIA) was signed in 2021.
- **AUKUS is different from Quad:** AUKUS prioritizes defense partnership, unlike Quad, which has a broader focus on strategic cooperation in the Indo-Pacific region.
  - **Quadrilateral Security Dialogue (Quad)** is a group of **US, Australia, India, and Japan** which commits for a free, open, prosperous and inclusive Indo-Pacific region that is prosperous and resilient.

## 2.2. OTHER IMPORTANT ORGANISATIONS IN NEWS

### 2.2.1. UN MEMBERSHIP PROCEDURE

- UN Security Council refers **Palestinian application to become full UN member** to committee.
- **About UN Membership procedure**
  - State accepts Charter commitments **by submitting an application to Secretary-General.**
  - UNSC **requiring affirmative votes from 9 out of 15 members and no vetoes** by 5 permanent members.
  - **If recommended,** it's presented to General Assembly, **which requires a two-thirds majority vote.**
  - Membership becomes **effective upon resolution adoption.**

### 2.2.2. UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD) REBRANDED AS UN TRADE AND DEVELOPMENT

- The **rebranding** marks the start of the **60th anniversary** of the organization.
  - This strategic move underscores the organization's commitment to increasing its global voice on the behalf of developing countries.
- **Key Achievements of UNCTAD:**
  - Implementation of **Financing for Development**, as mandated by the global community in the **Addis Ababa Agenda (2015)**, together with four other major institutional stakeholders.
    - ✓ The institution includes the **World Bank**, the **International Monetary Fund**, the **World Trade Organization**, and the **United Nations Development Programme.**
  - Assisted countries under the **Debt Management and Financial Analysis System (DMFAS) Programme.**

### 2.2.3. EURASIAN ECONOMIC UNION (EEU)

- India and EEU bloc officials held talks to formally start negotiation for Free Trade Agreement (FTA).
- **About EEU**
  - It is an ambitious project for **economic integration in the former Soviet region.**
  - **Objectives:** To create a common market much like the European Union (EU).
  - Established by the **Treaty on the Eurasian Economic Union** signed in 2014 in Astana (now Nur-Sultan).
  - **5 Members Countries:** Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia.
  - Within EEU, **Russia is India's top trading partner** with a bilateral trade worth USD 49.4 billion (FY2023).

### 2.2.4. INITIATIVES FOR PREVENTION OF CRIMES AGAINST PEACEKEEPERS

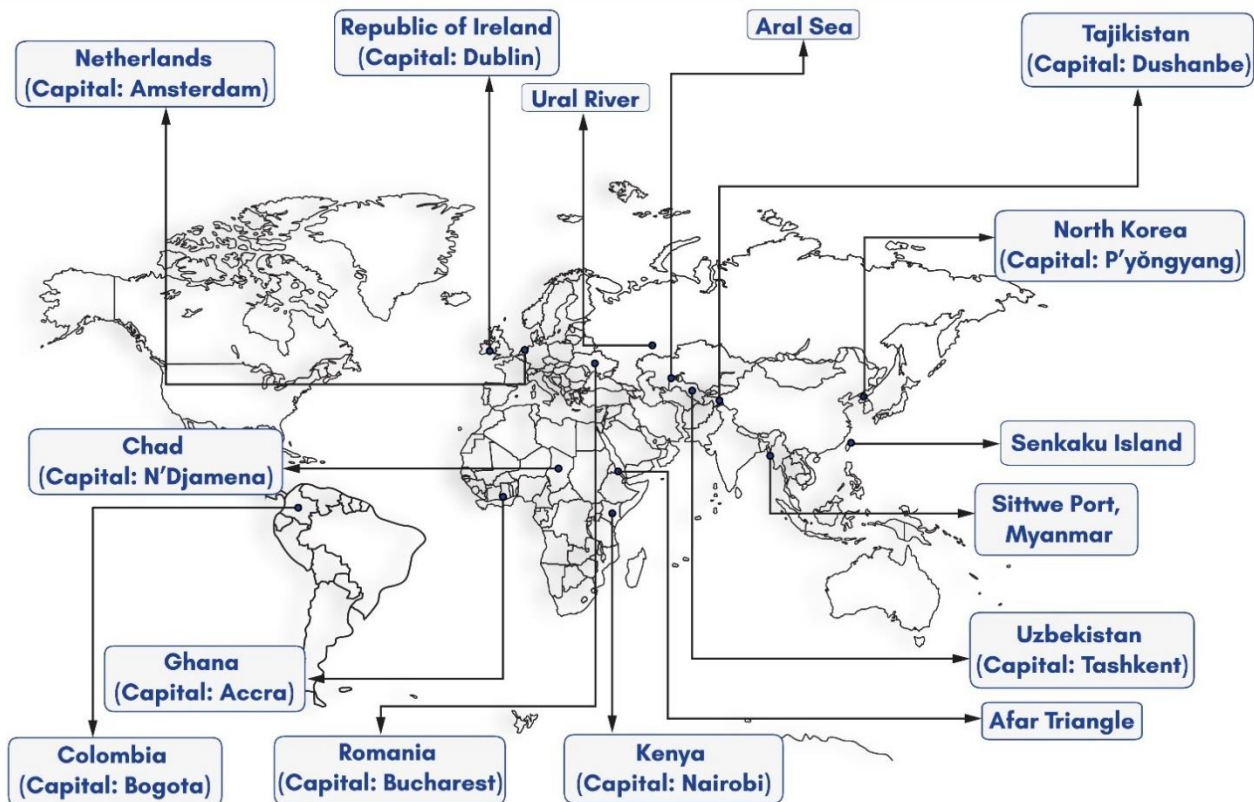
- India-led **Group of Friends (GOF)** launched a **new database designed to record crimes against Peacekeepers & monitor progress in holding perpetrators accountable.**
  - The GOF was **launched by India in 2022** to promote **accountability for crimes against the Blue Helmets** during its presidency of the UN Security Council
- UN peacekeeping forces **are employed to maintain or re-establish peace in an area of armed conflict.** However, they sometimes face violence in deployed regions.
  - These forces are also referred to as **Blue Helmets** as they are equipped in blue-coloured helmets.
  - They won the **Nobel Peace Prize in 1988.**

### 2.2.5. INTERNATIONAL NARCOTICS CONTROL BOARD (INCB)

- India's Jagjit Padvia has been **re-elected to INCB** for the third term from 2025 to 2030.
- **About INCB**
  - It is **independent and quasi-judicial monitoring body** for implementation of UN international drug control conventions.
  - It was **established in 1968** in accordance with **Single Convention on Narcotic Drugs, 1961.**
  - **Members:** 13 members (elected by UN Economic and Social Council for five years)
  - **Its functions are laid down in:**
    - ✓ **Single Convention** on Narcotic Drugs, 1961.
    - ✓ Convention on **Psychotropic Substances** 1971.
    - ✓ United Nations Convention against **Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988.**

## 2.3. PLACES IN NEWS

### Places in News: World





ASIA	
<p><b>Uzbekistan</b> (Capital: Tashkent)</p>	<p>Chief of the Army Staff inaugurated a high-tech IT laboratory at the Academy of Armed Forces in Uzbekistan.</p> <ul style="list-style-type: none"> <li> <b>Political features:</b> <ul style="list-style-type: none"> <li>It is a double <b>landlocked</b> country in Central Asia.</li> <li><b>Bordering Countries:</b> Kazakhstan (North), Kyrgyzstan (East), Tajikistan (South-east), Afghanistan (South), Turkmenistan (South-west).</li> </ul> </li> <li> <b>Geographical Features:</b> <ul style="list-style-type: none"> <li>Desert: <b>Kyzyl Kum.</b></li> <li><b>Highest Point:</b> Khazret Sultan</li> <li><b>Major rivers:</b> Syr Darya River, Amu Darya River</li> <li>The <b>Aral Sea</b>, is located in both Kazakhstan and Uzbekistan.</li> </ul> </li> </ul>
<p><b>Senkaku Island</b></p>	<ul style="list-style-type: none"> <li>Joint statement issued by Japan and USA recently <b>opposed any attempt to unilaterally change the status quo of the Senkaku Islands</b> by China. <ul style="list-style-type: none"> <li><b>Japan and China</b> have <b>long-running dispute</b> over these islands.</li> </ul> </li> <li><b>About Senkaku Island:</b> <ul style="list-style-type: none"> <li>Also known as <b>Diaoyu</b> in Chinese.</li> <li>Senkaku Islands are <b>located in the East China Sea</b> approximately 410 km west of <b>Okinawa Island</b>.</li> <li><b>Largest island:</b> Uotsuri Island.</li> </ul> </li> </ul>
<p><b>Sittwe Port, Myanmar</b></p>	<ul style="list-style-type: none"> <li>India has secured the right to operate its second overseas port (after Chabahar in Iran), Sittwe, after approval by Ministry of External Affairs (MEA).</li> <li><b>About Sittwe Port</b> <ul style="list-style-type: none"> <li><b>Deep water port</b> located at the estuary of <b>Kaladan River in Rakhine State of Myanmar.</b></li> <li>Developed as a part of <b>Kaladan Multi-Modal Transit Transport Project (KMTTP)</b> funded under <b>grant in aid assistance</b> from GoI.</li> <li><b>Significance:</b> Will open new opportunities for India's Northeast <b>for trade and transit, enhance trade and commerce</b> between India and Myanmar, etc.</li> </ul> </li> </ul>



<p><b>Tajikistan</b> (Capital: Dushanbe)</p>	<ul style="list-style-type: none"> <li>Tajikistan’s state security service has detained nine individuals in relation to Moscow concert hall attack.</li> <li><b>Political features</b> <ul style="list-style-type: none"> <li><b>Landlocked</b> country in Central Asia.</li> <li>Bordered by <b>Kyrgyzstan</b> (north), <b>China</b> (east), <b>Afghanistan</b> (south), and <b>Uzbekistan</b> (west and northwest).</li> </ul> </li> <li><b>Geographical features</b> <ul style="list-style-type: none"> <li><b>Highest Peak:</b> Imeni Ismail Samani or Ismoil Somoni.</li> <li><b>Major rivers:</b> Amu Darya, Vakhsh River.</li> </ul> </li> </ul>	
<p><b>Aral Sea</b></p>	<ul style="list-style-type: none"> <li>Study has found that the desert which emerged due to the drying up of the Aral Sea has made Central Asia a much dustier place.</li> <li><b>About Aral Sea</b> <ul style="list-style-type: none"> <li>It was once-large saltwater lake of <b>Central Asia</b>.</li> <li>Lies on the <b>boundary between Kazakhstan</b> to the north and <b>Uzbekistan</b> to the south.</li> </ul> </li> <li><b>Other important lakes that shrunk in last few decades:</b> <ul style="list-style-type: none"> <li><b>Lake Urmia:</b> Lies in the bottom of the large central depression of the Azerbaijan region in <b>northwestern Iran</b>.</li> <li><b>Lake Hamoun:</b> Freshwater Lake in Iran on Iran – Afghanistan border.</li> </ul> </li> </ul>	
<p><b>North Korea</b> (Capital: P’yöngyang)</p>	<ul style="list-style-type: none"> <li>Russia has vetoed a United Nations Expert Panel that has been monitoring sanctions against North Korea.</li> <li><b>Political features</b> <ul style="list-style-type: none"> <li>Known as Democratic People’s Republic of Korea, it is an <b>East Asian country</b> occupying Northern part of Korean Peninsula.</li> <li>Bordered by <b>China and Russia</b> to north and <b>Republic of Korea (South Korea)</b> to south.</li> <li><b>Water bodies:</b> East Sea (Sea of Japan) and Yellow Sea in west.</li> </ul> </li> <li><b>Geographical features</b> <ul style="list-style-type: none"> <li><b>Highest Peak:</b> Mount Paektu.</li> <li><b>Major Rivers:</b> Yulu (Yalu), Tumen, Taedang, and Imjin.</li> </ul> </li> </ul>	

EUROPE		
<p><b>Ural River</b></p>	<ul style="list-style-type: none"> <li>• <b>Rise in water level</b> of Ural River due to snow melting affected over 10,000 Homes across Russia.</li> <li>• <b>Ural River</b> <ul style="list-style-type: none"> <li>○ It is 2,428 km long river that flows through <b>Russia</b> and <b>Kazakhstan</b> along the continental boundary between <b>Europe</b> and <b>Asia</b>.</li> <li>○ Originates in <b>Ural Mountains</b> and empties into <b>Caspian Sea</b>.</li> <li>○ It is <b>Europe's third-longest river</b> after <b>Volga</b> and <b>Danube</b> rivers.</li> <li>○ <b>Melting snow</b> constitutes about 60% to 70% of the river's water source.</li> </ul> </li> </ul>	
<p><b>Republic of Ireland</b> (Capital: Dublin)</p>	<ul style="list-style-type: none"> <li>• Ireland got new Prime Minister.</li> <li>• <b>Political Features:</b> <ul style="list-style-type: none"> <li>○ It occupies <b>greater part of an island</b> lying to <b>west of Great Britain</b>.</li> <li>○ <b>Bordering countries:</b> Northern Ireland to North (Part of United Kingdom)</li> <li>○ <b>Surrounding water bodies:</b> <b>Atlantic Ocean</b> (west), <b>Celtic Sea</b> (south), and <b>Irish Sea</b> (east).</li> <li>○ Ireland is separated from Great Britain by <b>North Channel, Irish Sea, and St. George's Channel</b>.</li> </ul> </li> <li>• <b>Geographical Features:</b> <ul style="list-style-type: none"> <li>○ Highest Peak: Carrantuohill.</li> <li>○ Longest river: <b>River Shannon</b>.</li> <li>○ Largest lake: <b>Lough Neagh</b></li> </ul> </li> </ul>	
<p><b>Romania</b> (Capital: Bucharest)</p>	<ul style="list-style-type: none"> <li>• A research center in Romania developed world's most powerful LASER, which promises revolutionary advances in sectors like health, space, etc.</li> <li>• <b>Political features</b> <ul style="list-style-type: none"> <li>○ Located in <b>Southeastern Europe</b>.</li> <li>○ Bordered by <b>Ukraine</b> (north), <b>Moldova</b> (northeast), <b>Bulgaria</b> (south), <b>Serbia</b> (southwest), and <b>Hungary</b> (west).</li> <li>○ Bounded by <b>Black Sea to the Southeast</b>.</li> <li>○ Joined <b>NATO in 2004</b> and <b>European Union in 2007</b>.</li> </ul> </li> <li>• <b>Geographical features</b> <ul style="list-style-type: none"> <li>○ Climate is <b>temperate</b> and marked by <b>four distinct seasons</b>.</li> <li>○ Relief is dominated by the <b>Carpathian Mountains</b>.</li> <li>○ <b>Major rivers:</b> Danube, Tisza, Prut, etc.</li> <li>○ <b>Highest peak:</b> Mount Moldoveanu.</li> </ul> </li> </ul>	

<p><b>Netherlands</b> (Capital: Amsterdam)</p>	<ul style="list-style-type: none"> <li>• 12th India-Netherlands Foreign Office Consultations were held in The Hague, Netherlands.</li> <li>• <b>Political features</b> <ul style="list-style-type: none"> <li>○ Located in north-western Europe, also known as Holland.</li> <li>○ <b>Land Boundary:</b> Belgium (south) and Germany (east).</li> <li>○ <b>Water Bodies:</b> North Sea (north and west).</li> </ul> </li> <li>• <b>Geographical Features</b> <ul style="list-style-type: none"> <li>○ <b>Major Rivers:</b> Rhine, Meuse etc.</li> <li>○ <b>Highest Point:</b> Vaalserberg.</li> </ul> </li> </ul>	
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AFRICA		
<p><b>Kenya</b> (Capital: Nairobi)</p>	<ul style="list-style-type: none"> <li>• Heavy rains in the capital city have resulted in devastating floods.</li> <li>• <b>Political boundaries</b> <ul style="list-style-type: none"> <li>○ Lies on the East Africa coast, <b>bordered by the Indian Ocean.</b></li> <li>○ Somalia to the east, <b>Ethiopia and South Sudan</b> to the north, and Uganda and Tanzania, west and south respectively.</li> </ul> </li> <li>• <b>Geographical features</b> <ul style="list-style-type: none"> <li>○ <b>Major mountain: Mt Kenya (second highest in Africa),</b> Aberdare Range, Mau Escarpment</li> <li>○ <b>Major rivers:</b> Athi, Tana</li> <li>○ <b>Lake Victoria</b> on the western border.</li> <li>○ Bisected <b>horizontally by the Equator.</b></li> <li>○ <b>Great Rift Valley</b> passes through it.</li> </ul> </li> </ul>	
<p><b>Afar Triangle</b></p>	<ul style="list-style-type: none"> <li>• Geologists predict potential emergence of a new ocean at the Afar Triangle (also known as the Afar Depression), located in the Horn of Africa.</li> <li>• <b>About Afar Triangle</b> <ul style="list-style-type: none"> <li>○ It represents the <b>northernmost portion</b> of the <b>Great Rift Valley.</b></li> <li>○ It is on one of the most geologically active regions on earth, where <b>Nubian, Somali</b> and <b>Arabian</b> Plates converge.</li> <li>○ It will be inundated by Red Sea and the Gulf of Aden when new ocean basin will be formed. This could lead to the birth of a distinct continent in East Africa.</li> <li>○ It encompasses <b>sections of Eritrea, Djibouti,</b> and <b>Ethiopia.</b></li> </ul> </li> <li>• <b>Awash River</b> is the main river that flows through the Afar Triangle.</li> </ul>	
<p><b>Chad</b> (Capital: N'Djamena)</p>	<p>Chad polling to vote for a new president aimed at ending military rule.</p> <p><b>Political features:</b></p> <ul style="list-style-type: none"> <li>• Landlocked country in north-central Africa.</li> <li>• Land borders: Libya (north), Sudan (east), the Central African Republic (south), Cameroon, Nigeria, and Niger (west).</li> </ul> <p><b>Geographical features:</b></p> <ul style="list-style-type: none"> <li>• It is largely a semi-desert country.</li> <li>• Largest Lake: Lake Chad.</li> <li>• Major River: The Chari river.</li> <li>• Highest Point: Mount Koussi.</li> </ul>	

<p><b>Ghana</b> (Capital: Accra)</p>	<p>India-Ghana agreed to strengthen trade ties at 4th joint trade committee meeting in Accra.</p> <p><b>Political features</b></p> <ul style="list-style-type: none"> <li>West African country on Gulf of Guinea.</li> <li>Land Border: Burkina Faso (north), Togo (east), Côte d'Ivoire (west).</li> <li>Maritime border: Atlantic Ocean (south).</li> </ul> <p><b>Geographical features</b></p> <ul style="list-style-type: none"> <li>Major Rivers: Volta, Tano, Pra, etc.</li> <li>Highest Point: Mount Afadjato</li> <li>The Greenwich Meridian passes through Ghana.</li> </ul>	
<b>Americas</b>		
<p><b>Colombia</b> (Capital: Bogota)</p>	<ul style="list-style-type: none"> <li>Bogota started water rationing due to low levels of water in its reservoirs.</li> <li><b>Political Features:</b> <ul style="list-style-type: none"> <li>Located in the northwestern part of the <b>South American continent</b>.</li> <li>Bounded by the <b>Caribbean Sea</b> in the north, <b>Pacific Ocean</b> in the west.</li> <li><b>Neighboring countries:</b> Panama on the west, <b>Venezuela</b> and <b>Brazil</b> on the east, <b>Peru</b> and <b>Ecuador</b> on the south.</li> </ul> </li> <li><b>Geographical Features</b> <ul style="list-style-type: none"> <li><b>Andes Mountains</b> run along the western flank, and the <b>Amazon Forest</b> in the southeast.</li> <li><b>Important Peaks:</b> Pico Cristóbal Colón and Simón Bolívar.</li> <li><b>Rivers:</b> Amazon, Magdalena, Orinoco.</li> </ul> </li> </ul>	

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VISAKHAPATNAM | WARANGAL

## 2.4. BILATERAL RELATIONS

### 2.4.1. INDIA-INDONESIA

#### Why in the news?

75 year of diplomatic ties between India and Indonesia have been completed recently.

#### About India-Indonesia Relations

- The foundation of diplomatic ties between both the countries was laid by visit of the **Indonesian President in 1950 and the Treaty of Friendship (1951)**.

#### Key Aspects of Relationships:

##### Political:

- Established Strategic Partnership in 2005**, later elevated to Comprehensive Strategic Partnership.
- Both countries were **part of Bandung Conference 1955** which led to establishment of the Non-Aligned Movement (1961).
- Both countries cooperate in **common groups like G20, Indian Ocean Rim Association (IORA)**, East Asia Summit, United Nations etc.
- Indonesia is part of **India's Act East Policy (2014)**.

##### Trade

- Indonesia has emerged as **India's largest trade partner in ASEAN region**.
- India is the second largest buyer of crude palm oil** from Indonesia.

##### Maritime Cooperation in the Indo-Pacific

- Indonesia is strategically located between the Indian and Pacific Oceans.
- Under Security and Growth for All in the Region (SAGAR) initiative, India is helping development of port infrastructure (E.g. Sabang port).

**Defense: Joint Military Exercises;** Samudra Shakti, India-Indonesia Coordinated Patrol (IND-INDO CORPAT)

**Cultural:** Hinduism and Buddhism have key influence over the culture of Indonesia.

#### About the country

**Indonesia (Capital: Jakarta)**



#### Political features

- Land border:** Malaysia, Papua New Guinea and with East Timor.
- Almost **three-fourths** of Indonesia's area is embraced by **Sumatra, Kalimantan, and western New Guinea**.
  - Celebes, Java, and the Moluccas account for most of the country's remaining area.
- Maritime boundary:** Australia, Palau, Philippines, Vietnam, Thailand, Singapore and India.
  - Southwest of **Great Nicobar** lies the **northwestern tip of Sumatra, Indonesia**.

#### Geographical features

- Indonesia is the largest Archipelago** in the world.
- It lies across **the Equator**.
- Indonesia lies on the **Pacific Ring of fire**.
- Longest River:** The Kapuas River.
- Highest point:** Puncak Jaya.
- Major volcanoes:** Krakatau, Merapi, Sinabung, etc.
- Major straits:** Malacca, Lombok, Sunda



## 2.5. OTHER BILATERAL RELATIONS IN NEWS

### 2.5.1. UKRAINE'S FOREIGN MINISTER PAID OFFICIAL VISIT TO INDIA

- Foreign Minister visits amid efforts to seek a peaceful resolution to the more than two-year-old Russia-Ukraine conflict.
- Ukraine expects India to participate in the **Peace summit** to be hosted by Switzerland based on Ukrainian President's 10 points peace formula.
  - **10 points peace formula** aims to bring **lasting peace to Ukraine** and put an end to war.
- A Review meeting of the **Inter-governmental Commission (IGC)** was also held to restore cooperation prior to war level.



#### About India- Ukraine Relationship

- **Political:** India was one of the first countries to recognise Ukraine (1991).
- **Trade and Economic Cooperation:** India is Ukraine's major export destination in the Asia-Pacific (2020).

## 2.6. OTHER IMPORTANT NEWS

### 2.6.1. DISASTER DIPLOMACY

#### Why in the news?

Recently, 6th edition of the International Conference on Disaster Resilient Infrastructure (ICDRI) held in India, which emphasized the nation's expanding contribution to global crisis response efforts.

#### About Disaster diplomacy

- **Disaster Diplomacy** refers to 'a country's efforts to **provide aid and support to other countries** affected by natural/ man-made disasters or conflicts.
  - This approach to diplomacy involves a **country's deployment of personnel, resources, and aid** to provide assistance to those in need.
- **The Use of Foreign Military and Civil Defence Assets in Disaster Relief - "Oslo Guidelines"** (adopted in 1994, updated in 2006) sets the guiding principles of humanitarian assistance for UN humanitarian agencies.

**CDRI** Coalition for Disaster Resilient Infrastructure HQ New Delhi

**Genesis:** A global partnership launched in 2019 by Indian Prime Minister at UN Climate Action Summit (New York).

**Objectives:** To promote the resilience of infrastructure systems to climate and disaster risks, thereby ensuring sustainable development.

**Members:** 31 Countries, 6 International Organisations and 2 private sector organizations as members.

**Is India a member** ✓

**Other Key information:** Works at intersection of the Sendai Framework for Disaster Risk Reduction and the Paris Climate Agreement.

**Reports:** Biennial report on global infrastructure titled "Global Infrastructure Resilience: Capturing the Resilience Dividend".

#### India' Approach towards disaster relief

Approach	India's initiatives
First responder to natural disasters	<ul style="list-style-type: none"> <li>• Launched <b>Operation Dost</b> in the aftermath of the <b>devastating earthquakes that struck in Turkiye</b>.</li> <li>• <b>India launched Operation Karuna</b> to assist <b>cyclone-hit Myanmar</b></li> </ul>

<b>Capacity Building</b>	<ul style="list-style-type: none"> <li>India assists <b>Nepal, Maldives, Sri Lanka, Bangladesh, and Mauritius</b> in developing Early Warning Systems under the UN's 'Early Warnings for All (EW4All)' initiative.</li> </ul>
<b>Helping people in Conflict Zones</b>	<ul style="list-style-type: none"> <li>A part of Mission SAGAR, India's humanitarian assistance included supplies of <b>essential food items, medicines, Ayurvedic medicines to Mauritius and Comoros.</b></li> </ul>
<b>Post-conflict relief and rehabilitation</b>	<ul style="list-style-type: none"> <li>Focusing on <b>relief, rehabilitation and reconstruction</b> in Nepal, Sri Lanka, and Afghanistan.</li> </ul>
<b>UN Peacekeeping</b>	<ul style="list-style-type: none"> <li>India has contributed significantly in peacekeeping missions to facilitate <b>stabilization and reconstruction.</b></li> </ul>
<b>Managing Health Disasters</b>	<ul style="list-style-type: none"> <li>During the COVID-19 pandemic, India conducted <b>COVID-19 Vaccine Maitri program</b>, which has assisted over 100 nations.</li> </ul>

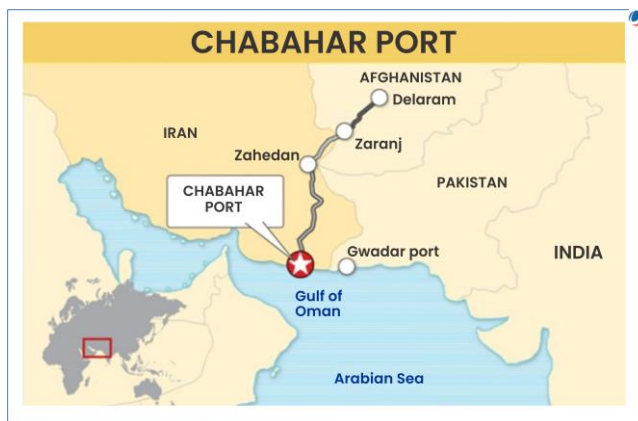
### 2.6.2. CHABAHAR PORT

#### Why in the news?

Recently, India signed a 10-year agreement with Iran for the development of the **Shahid Beheshti Port Terminal at Chabahar Port.**

#### More on the News

- The contract was signed between India Ports Global Limited (IPGL) and Ports and Maritime Organization (PMO) of Iran.
  - IPGL is a company which is 100% owned by **Sagarmala Development Company Limited**, a company under administrative control of **Ministry of Ports, Shipping and Waterways.**
- India, Iran, and Afghanistan signed a **trilateral agreement in 2016** for the development of the Chabhar port.
- The port will **minimize the distance from India's west coast to landlocked Afghanistan, Central Asia and European nations bypassing Pakistan.**



### 2.6.3. OTHER RECENT DEVELOPMENTS

#### 2.6.3.1. SCHENGEN AREA

- European Union (EU) has adopted new visa rules for Indian travellers to allow multiple-entry Schengen Visa with longer validity.
- About Schengen area**
  - It is **world's largest free travel area comprising 27 countries.**
  - 27 countries include **23 of the 27 EU members and all members of the European Free Trade Association** (Iceland, Liechtenstein, Norway and Switzerland).
  - Started in 1985 as an intergovernmental project** between **5 EU countries**– France, Germany, Belgium, the Netherlands and Luxembourg.

#### 2.6.3.2. HAVANA SYNDROME

- Joint media investigation linked mysterious Havana Syndrome symptoms experienced by US diplomats in recent years to a Russian intelligence unit.
- Havana Syndrome**
  - Refers to set of **mental health symptoms** that are said to be experienced by the US intelligence and embassy officials in various countries.
  - Symptoms involve **hearing certain sounds without any outside noise, nausea, vertigo and headaches, memory loss, and balance issues.**
  - First detected in **2016 in Havana (Cuba).**

### 2.6.3.3. DARFUR CRISIS

- UN has said that people have been eating ‘grass and peanut shells’ in Darfur due to hunger crisis in Sudan.
- Since April 2023, civil war in Sudan has ensued with clashes between the Sudanese army and Rapid Support Forces (RSF)

#### About Darfur

- Darfur is a region of western Sudan, bordering Libya, Chad, and the Central African Republic.
- The latest surge in violence comes as the RSF encircles North Darfur’s capital, El Fasher
- It has halted aid convoys coming from Chad’s Tine border crossing – a humanitarian corridor that passes through El Fasher.



### 2.6.3.4. EREZ CROSSING

- Israel has approved the reopening of the Erez crossing to allow the flow of more humanitarian aid into Gaza.
  - Also approved use of Ashdod Port for Aid.
- **About Erez Crossing**
  - Also known as **Beit Hanoun**.
  - It is a border crossing between **Israel** and the **northern Gaza Strip**.
  - It is the only border crossing that allows people in Gaza to travel to the occupied West Bank without passing through Egypt or Jordan.
- **Other Key Crossings:** Rafah crossing (between Egypt and Gaza), Karem Abu Salem (Kerem Shalom) crossing, etc.



## 2.7. ISSUES RELATED TO SECURITY

### 2.7.1. INDIA’S DEFENCE EXPORTS

#### Why In the News?

Defence exports have grown by 31 times in last 10 years as compared to FY 2013-14 and growth of 32.5% over FY 2022-23.

#### More on news

- Also, number of **export authorisations** rise to 1,507 in FY 2023-24.
- **Private sector** contributed about **60%** in defence exports.
- **Initiatives taken to promote Defence exports**
  - Foreign Direct Investment was enhanced upto **74%** through **automatic route**.
  - **Innovation for Defence Excellence (iDEX)** to achieve self - reliance and foster innovation and technology development in Defence.

Category	Indigenous Content
Buy (Indian – Indigenously Designed Developed and Manufactured) i.e. Buy (Indian- IDDM)	Indigenous design and ≥ 50%
Buy (Indian)	In case of indigenous design ≥ 50%, otherwise ≥ 60%
Buy and Make (Indian)	≥ 50% of the ‘Make’ portion
Buy (Global - Manufacture in India)	≥ 50%
Buy (Global)	Foreign Vendor – Nil Indian Vendor ≥ 30%

- **Defence Acquisition Procedure (DAP 2020) increased Indigenous Content** in various categories of procurement (refer table).
- **Establishment of Defence Industrial Corridors** in Uttar Pradesh and Tamil Nadu.

## 2.7.2. MISCELLANEOUS

### 2.7.2.1. WEAPONISATION OF SPACE

#### Why in the News?

Russia vetoed a United Nations Security Council (UNSC) draft resolution on a weapon-free outer space jointly proposed by the **United States and Japan**.

#### About UNSC resolution

- The vetoed resolution would have affirmed that countries which ratified the 1967 Outer Space Treaty must comply
- with their obligations not to put in orbit around the Earth “any objects” with weapons of mass destruction, or install them “on celestial bodies, or station such weapons in outer space.”
- **Russia’s stand:** Vetoed resolution focused solely on weapons of mass destruction including nuclear arms, and made no mention of other weapons in space.

#### Steps taken by India to enhance space capabilities

- **Defence Space Agency (DSA):** established in 2018 to enhance coordination among military space activities
- **Mission Shakti:** India’s first ever Anti-Satellite (ASAT) Missile Test successfully conducted in 2019 to defend its assets in outer space
- **IndSpaceEx:** first simulated space warfare exercise in 2019 to assess potential threats and formulate a joint space warfare doctrine.

#### About Weaponisation of Space

- Weaponization of space defines the process which results in **deployment of weapons in space** which may then become a theatre of conflict through use of weapons aimed at destroying targets either in orbit or on Earth's surface.
  - On the other hand, militarisation of outer space refers to the use of space in support of ground, sea and air-based military operations.

#### Important Global Initiatives for Peace in Space

- **Committee on the Peaceful Uses of Outer Space (COPUOS, 1959):** To govern the exploration and use of space for the benefit of all humanity.
- **Outer Space Treaty (1967):** Prohibits nuclear weapons or any other weapons of mass destruction in outer space.
- **Rescue Agreement (1968):** Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.
- **Space Liability Convention (1972):** Launching state is liable for damage caused by its space objects.
- **Launch Registration Convention of (1975):** Launching State shall register the space object in an appropriate registry and inform the same to Secretary-General of UN.
- **Moon Agreement (1979):** The agreement forbids the establishment of military bases, installations and fortifications on the Moon and, the testing of any type of weapons on the Moon.

Note - India is a party to Outer Space Treaty, the Rescue Agreement, the Liability Convention and the Registration Convention.

India has also signed the Moon Treaty but not ratified.

India also actively participates in COPUOS.

### 2.7.2.2. ARMED FORCES (SPECIAL POWERS) ACT (AFSPA), 1958

#### Why in the news?

The Armed Forces (Special Powers) Act, 1958 (AFSPA) has been extended by the Centre to eight districts in Nagaland and three districts in Arunachal Pradesh.

## More on News

- Currently, AFSPA is in effect in **parts of Nagaland, Assam, Manipur, and Arunachal Pradesh.**
- Also, **AFSPA remains in force in Jammu and Kashmir** through the Armed Forces (Jammu and Kashmir) Special Powers Act, 1990.
- However, it was lifted from **Tripura in 2015, Meghalaya in 2018** and **Mizoram** in the 1980s.

## About AFSPA, 1958

- An Act to **enable certain special powers to be conferred upon members of the armed forces in disturbed areas** in the State of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura that lies in the **North Eastern sector.**
- **Power to declare areas to be disturbed areas under Section 3 of the Act: Governor of that State or the Administrator of that Union territory or the Central Government,** as the case may be, may, by notification in the Official Gazette, declare the whole or such part of such State or Union territory to be a disturbed area.
  - **Disturbed area** is an area in such a disturbed or dangerous condition that the use of armed forces in aid of the civil power is necessary.
- **Special powers of the armed forces under Section 4:** Any commissioned officer, warrant officer, non-commissioned officer or any other person of equivalent rank in the armed forces is given "special powers" under AFSPA, although they must be exercised with extreme caution.
  - **After giving due warning as considered necessary, Fire upon or use force, even causing death, against any person** acting in contravention of laws:
    - ✓ **Prohibiting assembly of 5 or more persons**
    - ✓ **Prohibiting carrying weapons** or firearms/ammunition/explosives.
  - If reasonable suspicion exists, can also **arrest a person without a warrant; enter or search a premises without a warrant**
  - **Unless otherwise authorized by the central government,** Army soldiers operating under the AFSPA are shielded from all legal actions.

## Committees Related To AFSPA



**Justice B P Jeevan Reddy committee (2004):** Recommends the **incorporation of AFSPA in the Unlawful Activities (Prevention) Act, 1967**



**2nd ARC 5th Report (2007):** Recommended the repeal of AFSPA since it **would remove the feeling of discrimination and alienation**



**Santosh Hegde committee (2013):** Act must be properly reviewed every six months to see if its implementation is necessary



**Justice Verma Committee (2013):** Recommended that any sexual violence against women by members of the armed forces must be brought within the purview of the ordinary criminal law.

## 2.7.3. OTHER IMPORTANT DEVELOPMENTS

### 2.7.3.1. COMBINED MARITIME FORCES (CMF)

- Indian Navy seized drugs in Arabian Sea as a part of multi-nation Combined Task Force-150 under CMF.
- Drugs are seized under Operation Crimson Barracuda, first such operation conducted by an Indian Navy after India joined CMF in 2022.

- **About CMF**

- It is a multinational maritime partnership, which aims to uphold the **Rules-Based International Order** by countering **illicit non-state actors** on the high seas and promoting security, stability and prosperity in international waters
- **Main focus area:** Defeating terrorism, preventing piracy, encouraging regional cooperation, and promoting a safe maritime environment.
- **Members:** 42 countries.
- It comprises **five Combined Task Forces**.
- Participation is purely **voluntary**.
- It is commanded by a **U.S. Navy Vice Admiral**.

### 2.7.3.2. OPERATION MEGHDOOT AND SIACHEN GLACIER

- Indian Army and Indian Air Force marked 40th year of its presence on strategically-significant Siachen glacier under Operation Meghdoot.
  - **Operation Meghdoot** was launched on 13 April 1984, when Indian Army and Indian Air Force (IAF) advanced to Siachen to secure heights dominating Northern Ladakh.
- **About Siachen Glacier**
  - **Located at the height of 20,000 feet**, in the Eastern **Karakoram Range** of the Himalayas.
  - **It is the second longest (75KM) non-polar glacier** in the world, after Fedchenko Glacier in Tajikistan.
  - **Nubra river originates** from the Siachen glacier.
  - It is the **highest militarized zone** in the world.

### 2.7.3.3. UK PARLIAMENT PASSED BILL TO SEND ASYLUM SEEKERS TO RWANDA

- UK Parliament passed the **Safety of Rwanda (Asylum and Immigration) Bill** which will give Britain's immigration authorities power to send any asylum seeker entering the UK "illegally" after January 2022 to Rwanda.
  - It will **apply to anyone who arrives in UK without prior permission**, even if their aim is to claim asylum on legitimate grounds.
- **1951 Refugee Convention**
  - Convention, along with its 1967 protocol, is one of the key **legal instruments governing refugee protection with non-refoulement as its core principle**.
  - With **149 State parties to either (Convention or Protocol) or both**, they outline refugees' rights and States' legal obligations to protect them.

#### India's stand on Refugee Convention

- **India is not party to the 1951 Refugee Convention or its 1967 Protocol** and does not have a national refugee protection framework.
- However, India continues to **grant asylum to a large number of refugees from neighboring States** and respects UNHCR's mandate for other nationals, mainly from Afghanistan and Myanmar.
- It conducts **refugee status determination (RSD)** for **asylum-seekers from non-neighboring countries** before grant of asylum.

### 2.7.3.4. DRAFT EXPLOSIVES BILL (2024)

- The Bill will **replace the colonial era 'Explosives Act, 1884'** which was aimed to regulate the manufacture, possession, use, sale, transport, import and export of explosives.
  - **Rash Behari Bose** who was a key member of the Ghadar Party **was charged under under this Act**.
- **Key highlights**
  - **Defines explosive:** Explosive means gunpowder, nitroglycerine, nitroglycol, guncotton, or any other substance (solid/ liquid/ gaseous) used or manufactured to produce a practical effect by explosion or pyrotechnic effect.
  - **Licensing authority:** It means Chief Controller of Explosives or such other authority as may be prescribed.
    - ✓ Central Government shall prescribe the authority competent to grant, suspend or revoke a licence.
    - ✓ Currently, the PESO (refer to the box) is responsible for such things.
  - **Punishment for contravention:** Manufacturing, import or export in contravention of the Act will attract imprisonment for up to three years, a fine of Rs 1,00,000, or both.
  - **Power of Central Government:** It can make rules to carry out the provisions of this Act.

## 2.7.4. MILITARY EXERCISES IN NEWS

### 2.7.4.1. TIGER TRIUMPH 2024

- Harbour Phase of the exercise Tiger Triumph is being **conducted at Visakhapatnam (Andhra Pradesh)**.
- Tiger Triumph is a **Bilateral Tri-Service Humanitarian Assistance and Disaster Relief (HADR) Amphibious Exercise** between India and the US.

### 2.7.4.2. EXERCISE 'GAGAN SHAKTI'

- The **Indian Air Force** is conducting its biggest exercise 'Gagan Shakti' at the Pokhran Field Firing Range in **Jaisalmer district**.
- In the exercise, all the major **fighter aircraft and modern helicopters** of the Air Force **will demonstrate their striking capabilities**.

### 2.7.4.3. EXERCISE POORVI LEHAR

- Indian Navy conducted **Exercise Poorvi Lehar on East Coast under the Operational Control of Eastern Naval Command**.

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The UPSC Prelims is the first and highly competitive stage of the Civil Services Examination. It comprises two objective-type papers (General Studies and CSAT) designed to test a candidate's knowledge, understanding, and aptitude.

This stage challenges aspirants to not only master a broad syllabus and adapt to changing patterns but also excel in time management, information retention, and navigating the Prelims unpredictability.

Achieving success in this exam transcends mere hard work; it necessitates a holistic and adaptive approach to preparation.



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## Key Strategies for Prelims Preparation



**Strategized Preparation Plan:** Allocate your study time wisely across subjects, ensuring you have enough time for revision and practice mocks. Pay attention to your weak areas.



**Resource Optimization:** Choose study materials that are both thorough and to the point. Focus on quality over quantity to prevent getting overwhelmed.



**Strategic Use of PYQs and Mock Tests:** Use past year papers to understand the exam pattern, important topics, and question trends. Regularly practicing and assessing progress with mock tests improves preparation and time management.



**Systematic Current Affairs Preparation:** Keep abreast with Current affairs through newspapers, magazines and integrating this knowledge with static subjects to improve understanding and retention.



**Smart Learning:** Focus on understanding concepts rather than rote learning, use mnemonics, infographics, and other effective learning tools for better retention.



**Seeking Personalized Guidance:** Engage with mentors for customized strategies, areas to improve, and motivation. This mentorship also helps in stress management, guiding you through effective practices to maintain mental well-being.



Keeping the needs of the UPSC Prelims examination, the VisionIAS has brought its much-celebrated **All India GS Prelims Test Series and Mentoring Program** which encompass the entire UPSC syllabus based on the latest trends.



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2024: Effective Strategy for 3.5 Months"

## Its key Features include:



- Comprehensive coverage of the UPSC syllabus
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Ultimately, a strategic, well-rounded preparation combining smart study plans, practice, focused resources, and personalized guidance is key to navigating the UPSC Prelims successfully.

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# 3. ECONOMY

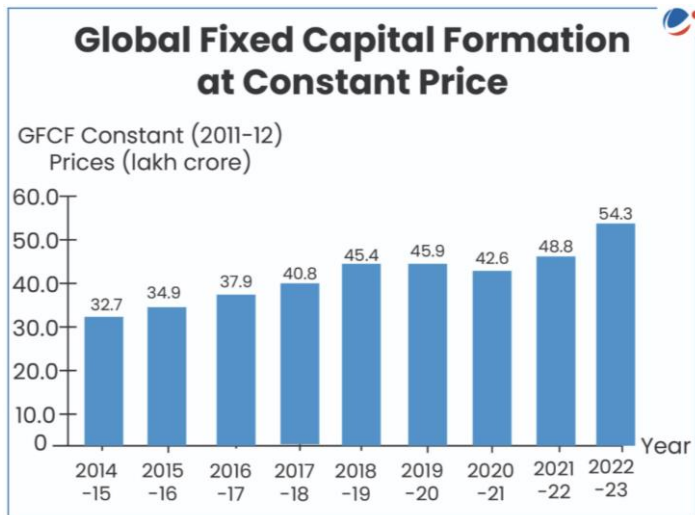
## 3.1. GROSS FIXED CAPITAL FORMATION (GFCF)

### Why in the news?

The sluggish growth of private Gross Fixed Capital Formation (GFCF) as a percentage of Gross Domestic Product (GDP) at current prices has been a significant challenge for the Indian economy.

### Evolution of GFCF (also called Investment):

- From **independence to economic liberalisation**, investment largely remained either slightly **below or above 10% of the GDP**.
- It rose **from around 10% of GDP in the 1980s to around 27% in 2007-08**.
- From **2011-12 onwards**, however, **private investment began to drop and hit a low of 19.6% of the GDP in 2020-21**.
- **In absolute terms**, GFCF in the Indian economy increased from Rs. 32.78 lakh crore (constant 2011-12 prices) in 2014-15 to Rs. 54.35 lakh crore in 2022-23 (Provisional Estimates).
- **Reasons for fall in Private GFCF:**
  - Historically, in India, **higher consumption has led to lower private investment**.
  - **Unfavourable government policy and policy uncertainty** act as major issues affecting private investment. E.g., disputes associated with tax laws.
  - ✓ The **drop in private investment** is due to the **slowdown in the pace of reforms in the last two decades**.



### What are Capital Formation (CF) and Gross Fixed Capital Formation (GFCF)?

- **Capital formation:** It refers to the process by which resources are invested in assets like plants, equipment, machinery, etc. as well as in human capital through education, health, skill development, etc.
- **Gross Capital Formation (GCF):** It refers to the growth in the size of fixed capital in an economy. It includes
  - **Gross Fixed Capital Formation (GFCF):** Like land improvements; plant, machinery, and equipment purchases; and the construction of roads, etc.
  - **Change in stock (CIS) of raw materials, semi-finished and finished goods:** Stocks of goods held by firms to meet temporary fluctuations in production or sales.
  - **Net acquisition of valuables:** like gold, gems, ornaments and precious stones etc.
- **Net capital formation (NCF)** is distinguished from GCF in that NCF includes **depreciation, obsolescence and accidental damage to fixed capital**.

GFCF includes	GFCF does not include
<ul style="list-style-type: none"> <li>• <b>Structure equipment</b> such as airport, roads etc.</li> <li>• <b>Addition to livestock used repeatedly</b> (such as dairy cattle, sheep etc.)</li> <li>• <b>Addition to cultivated crops</b> harvested repeatedly.</li> <li>• <b>Major repair and maintenance</b> that prolong economic life of assets.</li> <li>• <b>Intangible assets</b> like software or artistic originals</li> </ul>	<ul style="list-style-type: none"> <li>• Transaction intended as <b>intermediate consumption</b>.</li> <li>• <b>Machinery and equipment</b> intended for <b>household final consumption expenditure</b>.</li> <li>• <b>Losses due to natural disaster</b> (flooding, forest fire, etc.)</li> </ul>

### Why GFCF is an important economic variable?

- **Growth Multiplier:** **GFCF and GDP are positively correlated** and indicate that an increase in GFCF invariably leads to an increase in GDP.

- **Boosts productivity and living standards:** GFCF helps workers produce a greater amount of goods and services each year, helps boost output and improves living standards.
- **Promotes Self-sufficiency:** Growth in GFCF enables the creation of capital assets, thus improving self-sufficiency in production as well as research in the longer term.
- **Indicator of Market Confidence:** GFCF is considered a meaningful indicator of **future business activity, business confidence** and **future economic growth patterns**.
- **Reflects overall output:** GFCF as an indicator helps to determine the **overall output of an economy** and hence what consumers can actually purchase in the market.

## 3.2. URBAN POVERTY IN INDIA

### Why in the news?

Recently, the India Employment Report (IER), 2024 was released which highlighted **coexistence of higher unemployment and wages in urban areas and called** for further investigation to understand its implications for the urban poor.

### More on the news

- IER, 2024 was jointly published by the **International Labour Organization (ILO)** and the **Institute for Human Development (IHD)**.
- The report **poses questions on the trickle-down effect of benefits to the working class** in the backdrop of a 5.4% average real economic growth, from 2015-16 to 2022-23.
  - **The trickle-down effect** assumes that the **tax cuts and wealth of the rich and the corporates** will ultimately **reach down to the working class and lower class** to uplift their economic situation.



# International Labour Organization



Geneva

**Genesis:** Formed in **1919** under **Treaty of Versailles** to reflect the belief that universal and lasting peace can be accomplished only if it's based on social justice.

**Relation with UN:** ILO became **specialized agency of the UN** in **1946**.

**Tripartite Structure:** **Brings together governments, employers and workers** to set labour standards, develop policies and devise programmes promoting decent work for all women and men.

**Member States:** 187.

**Is India a member**

**Strategic Objectives**

- Set and promote standards and fundamental principles and **rights at work**.
- Create greater **opportunities for women and men to decent employment** and income.
- Enhance the coverage and effectiveness of **social protection for all**.
- Strengthen **tripartism and social dialogue**.

**Important Reports**

- Global Wage Report
- World Employment and Social Outlook
- World Social Protection Report, etc.

### Key highlights of the report

- **Higher unemployment in urban areas:** The incidence of unemployment was higher among young people in urban areas than in rural areas and among younger youths (aged 15–19) than older youths (aged 20–29).
- **Persistence of gender gap:** In both rural and urban areas in 2022, the Labour Force Participation Rate (LFPR) of young men (at 61.2%) was almost three times higher than that of young women (at 21.7%).
- **Decline in urban poverty:** The proportion of poor individuals in urban areas decreased from 13.7% in 2012 to 12.55% in 2022 at the all-India level.

### 3.2.1. INHERITANCE TAX AS A TOOL OF WEALTH REDISTRIBUTION

#### Why in the news?

The use of inheritance tax, a system similar to an existing tax system in the U.S. to address **economic inequality** is widely debated in India.

#### What is Inheritance Tax?

- **Inheritance tax** is levied on **property/asset inherited** upon an **individual's death**. It differs from **estate tax**, which is levied on the **total value of a deceased person's estate**.
- It is levied by many countries. E.g. Japan (tax rate is 55%), South Korea (tax rate is 50%) etc.

#### History of Inheritance Tax in India

- **In India**, currently there is **no inheritance tax**.
- Earlier, **estate duty** was imposed in 1953. The tax rate reached up to 85%, making it highly unpopular. Thus, it was abolished in 1985.
- Similar to Estate duty, **gift tax** and **wealth tax** were imposed in India.
  - These were abolished in 1998 and 2015 respectively. However, **gift tax** was re-introduced in 2004.
    - ✓ Under **Gift Tax**, any **gifts received exceeding Rs 50,000 in a financial year** is added to the person's "income from other sources" and taxed according to the income tax slab.
    - ✓ Exceptions include donations, inheritance, and gifts from close relative, gifts during weddings etc.

### 3.2.2. LIVING WAGE AND MINIMUM WAGE

#### Why in the news?

The government sought technical assistance from ILO to create a framework for living wage.

#### More on the news

- Presently, India **follows the minimum wage**, which has remained stagnant since 2017.
- **The Code on Wages passed (2019)**, proposed a universal wage floor which shall apply to all states once implemented.
- **Issues with the present system**
  - The Minimum Wages Act, 1948 provides guidelines but **does not specify the minimum wage**.
  - **Fixing minimum wages in some jobs** falls under both the Minimum Wages Act, 1948, and the Contract Labour (Regulation and Abolition) Act, 1970, leading to potential confusion.
  - **Wage payment discrepancies** due to the lack of enforceability of the national wage floor across states.
  - **Gender disparity** as scheduled employment with more women workers has lower minimum wages than those with more men.

Difference between living wage and minimum wage		
Differential Aspects	Living Wage	Minimum Wage
Definition	The wage level necessary to afford a <b>decent standard of living for workers and their families</b> .	The <b>lowest legal hourly</b> wage that employers must pay their workers.
Aim	To improve workers' <b>quality of life</b> .	To protect workers from <b>exploitation</b> .

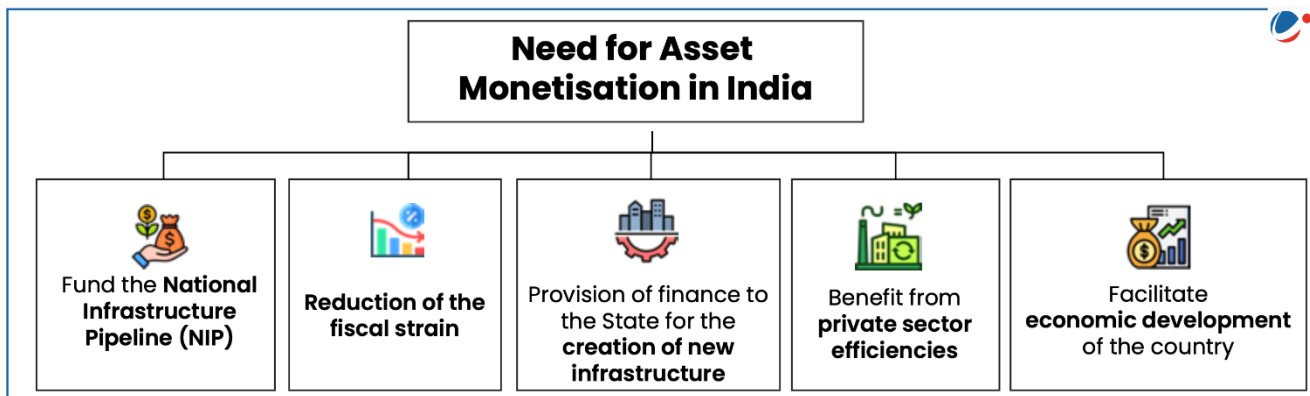
### 3.3. ASSET MONETIZATION

#### Why in the news?

Recently, the National Highway Authority of India (NHAI) raised its highest-ever monetization value of Rs. 15,624.9 Crore through the Infrastructure Investment Trust (InvIT) mode.

#### About Asset Monetization (AM)

- **Genesis:** The idea of AM was first suggested by a committee led by economist **Vijay Kelkar in 2012.**
  - AM was announced in the **Union Budget 2021-22** through the **National Monetisation Pipeline.**
- **Definition:** AM is the process of creating new sources of revenue for the government and its entities by unlocking the economic value of unutilised or underutilised public assets.
  - **A public asset** can be any property owned by a public body, roads, airports, pipelines, etc.
- **Authority:** An authorised **Core Group of Secretaries on Asset Monetisation (CGAM)** has been constituted under the chairmanship of the **Cabinet Secretary** to implement and monitor the project.
- **Process of Asset Monetisation (AM)**
  - AM involves the **license/lease of a government-owned asset** to a private sector entity for a specific period.
  - The transfer of rights in exchange for payments is governed by a **concession agreement** that facilitates **balanced risk-sharing** between the **public authority** and the **private party.**



#### Initiatives taken for Asset Monetization

- **National Monetisation Pipeline (NMP):**
  - **Sectors:** The government has identified **13 sectors to monetise its brownfield infrastructure assets.**
    - ✓ **These top 5 sectors capture ~83% of the aggregate pipeline:** Roads (27%), Railways (25%), Power (15%), Oil & Gas pipelines (8%), and Telecom (6%).
  - **Potential:** Monetisation potential of **Rs 6.0 lakh crores through core assets** of the Central Government, over four years, from FY 2022 to FY 2025.
- **Various assets/ asset classes targeted for monetisation:**
  - Railways will monetise **Dedicated Freight Corridor** assets for operations and maintenance, after commissioning.
  - Airports will be monetised for **operations and management** concession.
- **National Land Monetization Corporation:** It is a Special Purpose Vehicle (SPV) for undertaking surplus land monetization of Central Public Sector Enterprises (CPSEs) and other Government agencies.
- **Asset Monetisation dashboard:** For tracking progress and for providing visibility to investors.

### 3.4. ASSET RECONSTRUCTION COMPANIES

#### Why in the news?

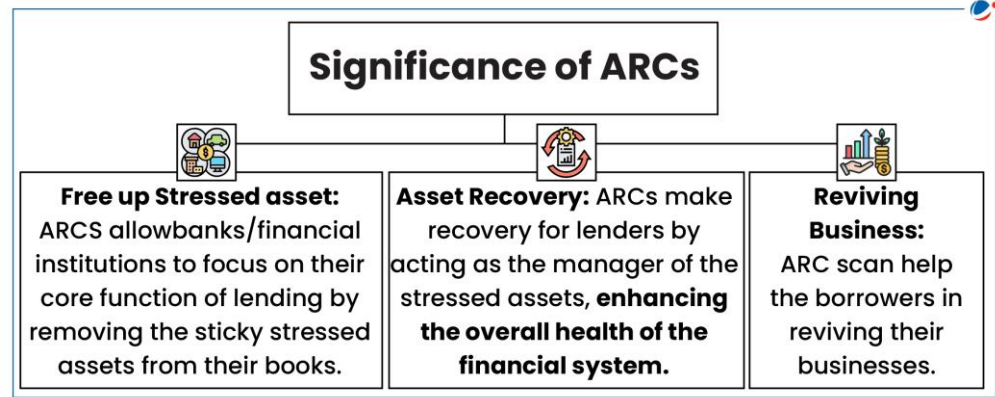
The Reserve Bank of India (RBI) has issued **master Direction – Reserve Bank of India (Asset Reconstruction Companies) Directions, 2024.**

### More on the news

- **Issued Under:** The powers conferred by Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002.

- **Applicable** for every ARC registered with the Reserve Bank under Section 3 of the SARFAESI Act, 2002.

- **Aim:** To streamline and regulate the functioning of ARCs in India, ensuring transparency, accountability, and integrity in the financial system.



### About ARCs

- **Definition:** ARC is a **financial institution that buys the Non-Performing Assets (NPAs)** or bad assets from banks and financial institutions so that the latter can clean up their balance sheets.
  - ARCs are required to **resolve the assets within a maximum of 8 years of acquisition** of financial assets and redeem the SRs representing the assets.
- **Genesis: SARFAESI Act in 2002** envisaged that ARCs would be registered and regulated by RBI. There are 29 ARCs in operation in India (2022).
  - **Narsimham Committee – II (1998)** proposed asset reconstruction companies, on the similar lines of asset management companies' prevalent globally.
- **Types:** Based on ownership, ARCs could be **public, private or public-private partnership.**
- **Examples:** **National Asset Reconstruction Company Limited (NARCL), India Debt Resolution Company Ltd etc.**

### How ARCs Work?

- **Asset Acquisition:** ARCs acquire financial assets from banks/ FIs either on their own books or in the books of a trust set up for the purpose of securitisation and/ or reconstruction.
- **Security Receipts:** Lenders sell stressed loans to ARCs at a discount. Unless the transaction is entirely in cash, ARC issues security receipts that are redeemable as and when it recovers the specific loan.
- **Management Fee:** ARCs also charge bad-loan sellers a management fee of **1.5% to 2% of the value of the asset every year.**

### Key Provisions of Master RBI (ARCs) Directions, 2024

- **Net Own Fund (NOF):** To commence the business of securitisation or asset reconstruction, an ARC is required to have a **minimum NOF of Rs300 crore** and thereafter, on an ongoing basis.
- **Registration:** Before commencing the business of securitisation or asset reconstruction, an ARC shall apply for registration and obtain a certificate of registration (CoR) from the RBI.
- **Leadership Positions:** It set age limit of **70 for MD/CEO or Whole-time Director** and tenure of 5 years at a time, with a **maximum tenure of 15 years** continuously.
- **ARCs shall report to IBA:** Details of CAs, advocates and valuers (who committed serious irregularities in professional services) for including in **Indian Banks' Association (IBA)** database.
- **Internal audit:** ARCs shall put in place an effective internal control system providing for periodical **checks and review** of the asset acquisition procedures and asset reconstruction measures.

### 3.5. ADVANCE PRICING AGREEMENTS (APAS)

#### Why in the News?

The Central Board of Direct Taxes (CBDT) has signed highest ever record 125 APAs (including Unilateral and Bilateral APAs) in FY 2023-24 with Indian taxpayers.

#### About Advance Pricing Agreements (APAs)

- It is an agreement between a **taxpayer and tax authority**.
- APAs endeavors to **provide certainty to taxpayers** in domain of **transfer pricing** by specifying **methods of pricing**.
  - APA helps **determine arm's length price (ALP) of international transactions** in advance for a maximum of five future years.
  - Further, taxpayer has option to **roll back APA for four preceding years**, as a result of which, tax certainty is provided for nine years.

#### Know the term

- Transfer Pricing:** It is the price of goods and services exchanged between companies that are under common ownership or control.
- Arm's Length Principal of Pricing:** This principle states that the price agreed in a transaction between two related parties must be the same as the price agreed in a comparable transaction between two unrelated parties.

#### Central Board of Direct Taxes



- Genesis:** It is **statutory authority** formed under **Central Board of Revenue Act, 1963**.
- Ministry:** It is part of **Department of Revenue in Ministry of Finance**.
- Functions:** CBDT provides essential **inputs for policy and planning of direct taxes in India**.
  - Also responsible for **administration of direct tax laws through Income Tax Department**.
- Composition:** CBDT consists of a **Chairman and six Members**

#### Types of APA

Type	Nature
Unilateral APA	APA entered into <b>between a taxpayer and the tax administration</b> of the country where it is subject to taxation
Bilateral APA	APA entered into <b>between the taxpayers, the tax administration of the host country and the foreign tax administration</b>
Multilateral APA	APA entered between <b>the taxpayers, the tax administration of the host country and more than one foreign tax administrations</b>

#### Mutual Agreement Procedure:

- MAP is an **alternative available to taxpayers for resolving double taxation disputes** whether juridical or economic in nature.
- MAP is a **mechanism laid down in tax treaties (E.g. DTAA)** to ensure that taxation is in accordance with the tax treaty.
  - A tax treaty is a **bilateral (two-party) agreement** made by two countries **to resolve** issues involving **double taxation of passive and active income** of each of their respective citizens.
- Difference between MAP and APAs:**
  - MAP resolves transfer pricing disputes while APAs prevents transfer pricing disputes.
  - Taxpayers file MAP for **pending disputes** while they opt for APA for same transactions **for future years** as an effective dispute resolution/ avoidance strategy.

#### APA Scheme in India

- Ministry of Finance had notified **APA Scheme** in 2012 through the insertion of sections **92CC and 92CD in the Income-tax Act, 1961**.
  - APA rules were notified by CBDT subsequently.

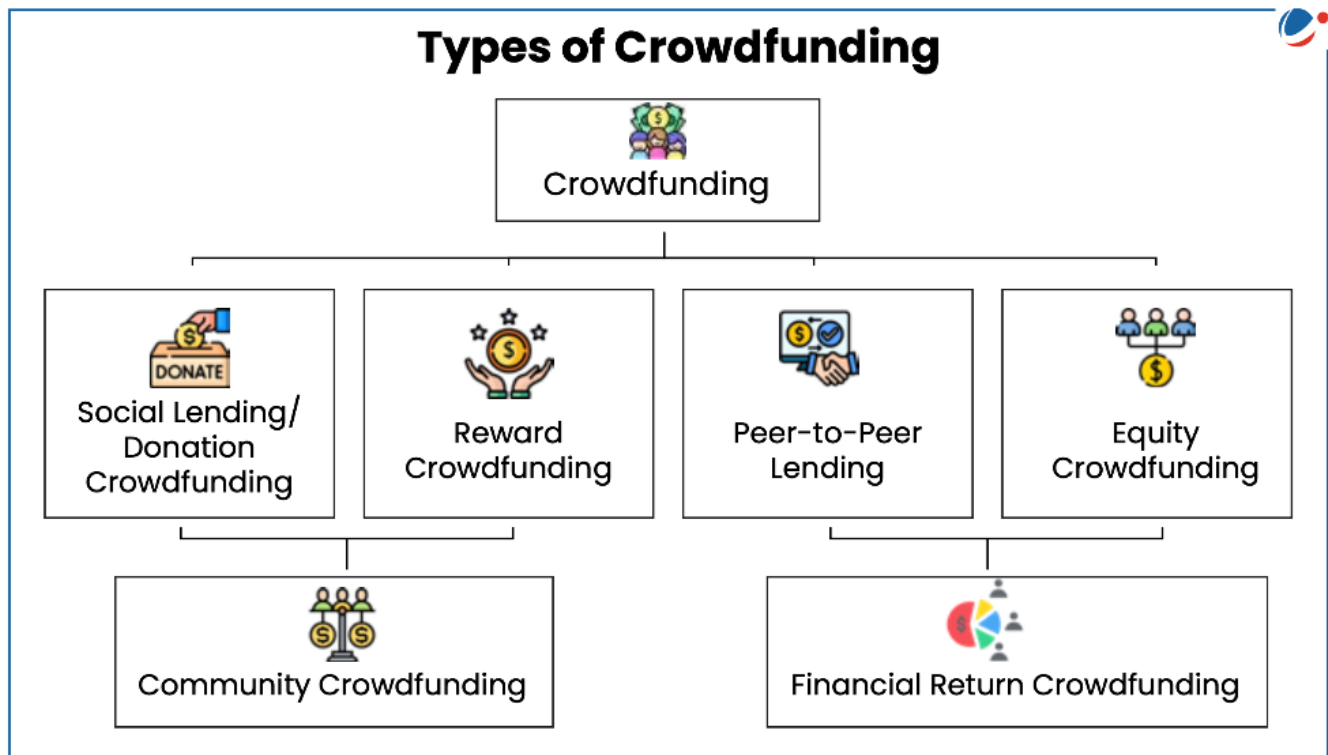
- Under it, an agreement is **signed between CBDT and any person** determining in advance arm's length price in relation to an international transaction.
- **Nature of Scheme: APA process is voluntary** and supplements appeal and other Double Taxation Avoidance Agreement (DTAA) mechanism for resolving transfer pricing dispute.
- **Term of APA:** Maximum five years.
- **Rollback provisions:** Allows Arm's Length Price as agreed in APA, to be rolled back to a period prior to the commencement of the APA.

<p><b>Related News</b></p> <p><b>Double Taxation Avoidance Agreement (DTAA)</b></p> <ul style="list-style-type: none"> <li>• India &amp; Mauritius signed (not yet ratified) a protocol amending the Double Taxation Avoidance Agreement (DTAA).</li> <li>• Amendment included <b>Principal Purpose Test (PPT)</b> to avail tax benefits under the DTAA to plug the abuse of treaty for tax evasion and avoidance.             <ul style="list-style-type: none"> <li>○ PPT lays out the condition that the <b>tax benefits under the treaty will not be applicable if obtaining that duty benefit was the principal purpose</b> of any transaction or arrangement.</li> <li>○ Protocol to amend DTAA is aimed at making it compliant with <b>Base Erosion and Profit Shifting (BEPS) Minimum Standards</b>.</li> </ul> </li> <li>• <b>DTAA</b> is an agreement between two countries/territories with an objective to avoid double taxation on same declared asset in two different countries/territories.             <ul style="list-style-type: none"> <li>○ <b>DTAA between India and Mauritius was first signed in 1982</b> and amended in 2016.</li> </ul> </li> </ul>	<p><b>Base Erosion and Profit Shifting (BEPS)</b></p> <ul style="list-style-type: none"> <li>• Refers to <b>tax planning strategies that exploit gaps and mismatches in tax rules</b> for tax avoidance by <b>shifting profits from higher tax to lower tax jurisdictions</b>.</li> <li>• <b>Multilateral Convention to Implement Tax Treaty Related Measures to Prevent BEPS</b> aims to update international tax rules and lessen opportunity for tax avoidance by multinational enterprises.             <ul style="list-style-type: none"> <li>○ <b>India signed the convention in 2017.</b></li> </ul> </li> </ul>
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### 3.6. CROWDFUNDING

**Why in the news?**

Gujarat High Court sought details on regulations around Crowdfunding.



### About Crowdfunding

- Crowdfunding is **solicitation of funds (small amount) from multiple investors** through web-based platform or social networking site for specific project, business venture or social cause.
  - Traditional fundraising consists of asking for a sum from limited set of sources.
  - **Securities and Exchange Board of India (SEBI)** regulates Crowdfunding in India.
- **SEBI guidelines on Crowdfunding**
  - Only **“Accredited Investors”** may invest i.e.
    - ✓ **Companies incorporated under Companies Act, 2013** with minimum **net worth of Rs 20 crore**,
    - ✓ **High Net Worth Individual** with **minimum net worth of Rs 2 crore**,
    - ✓ **Eligible Retail Investors** who have a **minimum annual gross income of Rs. 10 Lacs**.

Benefits of Crowdfunding	Risk of Crowdfunding
<ul style="list-style-type: none"> <li>• Promoting funding to <b>new ideas</b> and <b>encourages startups</b>.</li> <li>• Increases flows of <b>credit to Small, Medium Enterprises</b>.</li> <li>• <b>Raising funds during natural calamities</b>.</li> <li>• Arranging money for those poor people who can't afford expenses of diseases like cancer etc.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Retail investors</b> may not be able to understand risk in investing start-ups and will be <b>unable to bear loss of investments</b>.</li> <li>• Possibility of <b>genuine websites</b> being used by <b>fraudsters</b>.</li> <li>• <b>Lack of monitoring of web-based platforms</b> leads to risk like terror financing, money laundering etc.</li> </ul>

# ESSAY

## ENRICHMENT PROGRAMME 2024

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### 3.7. KEY DEVELOPMENTS IN BANKING AND FINANCE

<p><b>Credit Deposit Ratio (CDR)</b></p>	<ul style="list-style-type: none"> <li>Indian banks are <b>battling the worst deposit crunch in 20 years</b> and at 80%, the credit-deposit ratio is at its highest since 2005.</li> <li><b>About CDR:</b> <ul style="list-style-type: none"> <li>It is the ratio of how much a <b>bank lends out of the deposits it has mobilised</b>.</li> <li>A higher CDR suggests that a <b>significant portion of the bank's resources are allocated to loans</b>.                             <ul style="list-style-type: none"> <li>✓ It could potentially <b>stimulate economic growth</b> but also implies <b>higher risk</b>.</li> </ul> </li> <li>Regulators often <b>monitor CDR</b> to ensure banks maintain a <b>prudent balance between lending and risk management</b>.</li> </ul> </li> </ul>	<p><b>WIDENING GAP</b> Figures in % (Y-o-Y)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Credit growth</th> <th>Deposit growth</th> <th>C/D ratio</th> </tr> </thead> <tbody> <tr> <td>FY20</td> <td>6.1</td> <td>17.9</td> <td>76.44</td> </tr> <tr> <td>FY21</td> <td>5.6</td> <td>11.4</td> <td>72.46</td> </tr> <tr> <td>FY22</td> <td>9.6</td> <td>8.9</td> <td>72.22</td> </tr> <tr> <td>FY23</td> <td>15.0</td> <td>9.6</td> <td>75.79</td> </tr> <tr> <td>FY24</td> <td>20.2</td> <td>13.6</td> <td>80</td> </tr> </tbody> </table>	Year	Credit growth	Deposit growth	C/D ratio	FY20	6.1	17.9	76.44	FY21	5.6	11.4	72.46	FY22	9.6	8.9	72.22	FY23	15.0	9.6	75.79	FY24	20.2	13.6	80
Year	Credit growth	Deposit growth	C/D ratio																							
FY20	6.1	17.9	76.44																							
FY21	5.6	11.4	72.46																							
FY22	9.6	8.9	72.22																							
FY23	15.0	9.6	75.79																							
FY24	20.2	13.6	80																							
<p><b>Payment Aggregator (PA)</b></p>	<ul style="list-style-type: none"> <li><b>PayU has received an in-principle approval</b> from the Reserve Bank of India (RBI) to operate as a PA.</li> <li><b>About PAs</b> <ul style="list-style-type: none"> <li>It is a <b>financial technology company that simplifies the process of accepting electronic payments</b> for businesses. E.g., GooglePay, PhonePe, Cashfree etc.</li> <li>It acts as an <b>intermediary between the business and the financial institutions</b>.</li> <li>It is incorporated as a company under the <b>Companies Act, 1956 / 2013</b>.</li> <li>Non-bank PAs require authorisation from RBI under the <b>Payment and Settlement Systems Act, 2007</b>.</li> </ul> </li> </ul>																									
<p><b>SCORES 2.0</b></p>	<ul style="list-style-type: none"> <li><b>SCORES</b> refers to SEBI Complaint Redress System.</li> <li>SEBI launched <b>SCORES 2.0 version</b> which <b>strengthens investor complaint redress mechanism</b> in securities market by making process more efficient.</li> <li><b>Salient features of SCORES 2.0</b> <ul style="list-style-type: none"> <li>Reduced timelines for redressal of investor complaints across Securities Market i.e. <b>21 Calendar days from date of receipt of complaint</b>.</li> <li><b>Introduction of auto-routing of complaints</b> to concerned regulated entity to eliminate time lapses.</li> <li>Integration with <b>KYC Registration Agency database</b> for easy registration.</li> </ul> </li> </ul>																									
<p><b>Compulsory Convertible Debentures (CCD)</b></p>	<ul style="list-style-type: none"> <li><b>Competition Commission of India</b> approved subscription to CCD of Napino Auto and Electronics Limited by <b>International Finance Corporation (IFC)</b>.</li> <li><b>About CCD</b> <ul style="list-style-type: none"> <li><b>CCDs</b> are debt instruments that are convertible into equity at a specified time or on happening of specified event(s).</li> <li>These are <b>hybrid securities</b> as they initially behave like debt instruments but eventually convert into equity shares.</li> <li>It is often used by companies for <b>raising long-term funds</b> without immediately diluting equity shareholding of existing investors.</li> </ul> </li> </ul>																									
<p><b>Domestic Systemically Important Insurers (D-SIIS)</b></p>	<ul style="list-style-type: none"> <li><b>Insurance Regulatory and Development Authority of India (IRDAI)</b> releases <b>2023-24 – List of D-SIIS</b>.             <ul style="list-style-type: none"> <li>Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC Re) and New India Assurance Company continue to be identified as D-SIIS.</li> </ul> </li> <li>D-SIIS refer to <b>insurers of such size, market importance, and domestic and global inter connectedness</b>, whose distress or failure would cause a <b>significant dislocation in the domestic financial system</b>.             <ul style="list-style-type: none"> <li>D-SIIS are perceived as <b>‘too big or too important to fail’ (TBTF)</b>.</li> <li>D-SIIS are <b>subject to additional regulatory measures</b>.</li> </ul> </li> </ul>																									

### 3.8. CONSUMER CONFIDENCE SURVEY

#### Why in the news?

Recently, Reserve Bank of India (RBI) released the results of January 2023 round of its **bi-monthly Consumer Confidence Survey (CCS)**.

#### About Consumer Confidence and Consumer Confidence Survey (CCS)

- It is an economic indicator that **measures the degree of optimism or pessimism** that consumers feel about **overall state of the economy and personal financial situation**.
  - It serves as an **indicator of the health of the economy** from the perspective of the consumer.
  - **High consumer confidence** in the economy is usually related to **higher spending by Consumers**.
- It is measured through a **bi-monthly Consumer Confidence Survey (CCS)** conducted by the Reserve Bank of India (RBI).
- Survey obtains **current perceptions** (*vis-à-vis* a year ago) and **one year ahead expectations** on general economic situation and own income and **spending across 19 major cities**.
  - Survey obtains **information on urban consumer sentiments** and **captures qualitative responses** to questions pertaining to general economic conditions.
- CCS responses are measured through **two indexes**:
  - **Current Situation Index (CSI)** - Consumer sentiment about current economic, employment, and price conditions as compared to a year ago.
  - **Future Expectation Index (FEI)** - Expectations about economic, employment, and price conditions a year ahead.
    - ✓ **Businesses** often use it to **make better-informed decisions or adjustments** in strategy such as **investments in new projects or launch of new products**.

#### Findings of the latest Consumer Confidence survey

- **Consumer confidence improved** both for the current period as well as for the year ahead.
- **Current situation index (CSI)** continued on its **recovery path** since the historic low recorded in mid-2021.
  - It **increased** on the back of improved sentiments on general economic situation and household income.
- **Future expectations index (FEI)**: Rose to its two-year high on the back of improved optimism on general economic situation, employment and income over the next one year.

### 3.9. INTERNATIONALIZATION OF RUPEE

#### Why in the news?

Recently, Prime Minister asked the Reserve Bank of India (RBI) to prepare a **10-year strategy to make the Indian rupee a globally accessible and acceptable currency**, enabling its internationalization.

#### About internationalization of currency

- **Defination: Currency internationalization** described as the **international extension of a national currency's three basic functions** of serving as a unit of account, medium of exchange and store of value.
  - **Examples:** US dollar, Euro, Japanese yen, pound sterling etc.
- **Determinants of internationalization of currency:** Economic fundamentals such as economy's size and trade network, depth and liquidity of capital markets, stability and convertibility of currency etc.

#### Benefits of Internationalization of Currency

- **Limit exchange rate risk:** It allows the country's exporters and importers to limit exchange rate risk as domestic firms can settle their exports/imports in their currency.
- **Access to international financial markets:** It permits domestic firms and financial institutions to access international financial markets without assuming exchange rate risk.

#### Do you know?

> **Indian rupee was the legal tender in some Gulf countries**, like Kuwait, Bahrain, Qatar and UAE, till the early 1970s.

- **Boost capital formation:** A larger, efficient financial sector reduces capital cost and widens set of financial institutions.
- **Financing budget deficit:** It may allow a country's government to finance part of its budget deficit (or current account deficit) by issuing domestic currency debt in international markets rather than issuing foreign currency instruments.
- **Regulating Capital Flows:** It results in lowering the impact of sudden stops and reversals of capital flows and enhances the ability to repay external sovereign debt.
- **Reducing requirement of forex reserves:** It reduces the requirement to maintain and depend on large foreign exchange reserves in convertible currencies to manage external vulnerabilities.

## Challenges in Internationalization of Currency

	<b>Exchange Rate Volatility</b> May result in a potential increase in volatility of its exchange rate in the initial stages.
	<b>Monetary Policy Dilemma or Triffin Dilemma</b> It is a conflict that arises when a country needs to supply enough of its currency to meet global demand while also maintaining its domestic monetary policies.
	<b>Vulnerability to External Shock</b> May accentuate an external shock, given the open channel of the flow of funds in and out of the country and from one currency to another.
	<b>Macroeconomic Stability</b> Integration of financial markets could affect stability in the long-term.

### Approach for internationalization of Rupee

- **Capital Account Convertibility:** INR (Indian National Rupee) is fully convertible in the current account but partially in the capital account.
  - There is need to review extant Foreign Exchange Management Act (FEMA) provisions and extending incentives for international trade settlements in INR.
- **Promoting international use of INR:** To facilitate international financial transactions in INR, an efficient settlement mechanism, availability of liquidity and development of robust cross-border payments system would be required.
  - **Currency Swaps and Local Currency Settlement (LCS):** These provide currency diversification that stabilises the local currency, protect businesses against currency risk exposure and reduces transaction costs.
  - **Inclusion of INR in Continuous Linked Settlement (CLS):** CLS is a global system for the settlement of foreign currency transactions on a Payment vs Payment (PvP) basis.
    - ✓ CLS system currently settles trades in 18 currencies. However, INR is not among those currencies.
- **Inclusion of Indian Government Bonds in Global Bond Indices:** It will enable widening of investor base, stable passive flows, appreciation of INR, and reduction of overall borrowing costs.

### Steps taken towards internationalization of Rupee

- **Use of Indian Payment Infrastructure:** India initiated inter-linkage of UPI with Singapore's PayNow and is reaching out to jurisdictions to increase global outreach of UPI system.
- **Special Vostro Rupee Accounts (SVRAs):** RBI has put in place the mechanism for INR trade settlement with 22 countries by allowing banks from these countries to open SVRAs for settling payments.
- **INR as a Designated Foreign Currency in Sri Lanka:** Paved the way for INR-based bilateral trade.
- **Bilateral Swap Arrangements (BSA):** India currently has a BSA with Japan for an amount up to USD 75 billion as a backstop line of support in case of any balance of payments issue.
  - Also, India has recently signed a 35 billion rupees currency swap agreement with UAE.

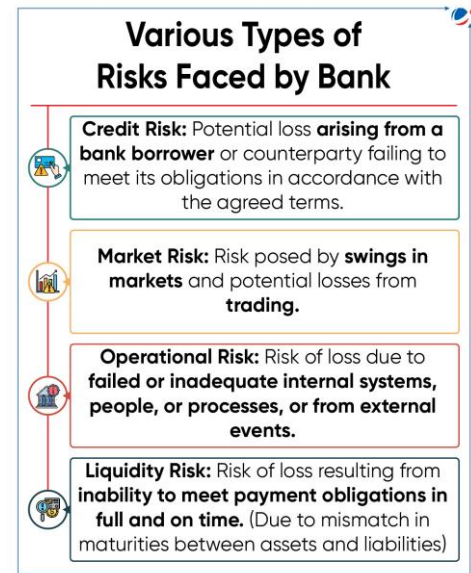
### 3.10. BASEL III ENDGAME

#### Why in the news?

Consumer Bankers Association (CBA) recently released a White Paper, “The Impact of the **Basel III Endgame Proposal** on Consumers on the Margins of the U.S. Financial System,”

#### About Basel III Endgame

- The **final set of rules of Basel III norms** has been called “Basel III Endgame.”
  - **Basel III is a set of measures** developed by the **Basel Committee on Banking Supervision** to strengthen the regulation, supervision, and risk management of banks.
  - **Potential impact of the Endgame** includes **Globally Systemically Important Banks (G-SIBs)** experiencing an increase of 21% in capital requirements.
  - **Proposed changes** are aimed at improving the “**strength and resiliency**” of the **banking system** while also improving transparency and consistency in banks’ capital frameworks.



### Basel Committee on Banking Supervision



**Genesis:** It was established by **central bank Governors of G10** countries at the end of 1974.



**Members:** Its 45 members comprise central banks and bank supervisors (**RBI is one of its member**).



#### Functions:

- It was established to **enhance financial stability** by improving the quality of banking supervision worldwide.
- It also serves as **forum for regular cooperation** between its member countries on banking supervisory matters.



**Governance:** BCBS reports to its oversight body “**Group of Central Bank and Governors and Heads of Supervision (GHOS)**”.



**Implementation of decisions:** its decisions do not have legal force.

**Basel Norms** (Refer box at the end of this article for key terminologies associated with Basel Norms):

- **Description:** These rules focus on the **amount of capital** that banks must have against the credit, operational, and market risk of their business.
  - Banks face **significant risk** primarily due to being one of the most heavily leveraged sectors.
  - Heavily leveraged sectors **rely extensively on debt** for financing their operations and investments.
- **Basel I Norms (1987):** In 1987, the Committee introduced capital measurement system which **focused on the credit risk and risk-weighting of assets**.
- **Basel II norms (2004):** Introduced three important pillars: **Minimum capital requirements, Supervisory Review and Market Discipline**.
- **Basel III Norms (2010):** It aims to build robust capital base for banks and **ensure sound liquidity and leverage ratios**.

Key Features of Basel I, II and III Compared				
Pillars	Key Components of Pillars	Basel I	Basel II	Basel III
Pillar I (Capital Requirements)	Minimum Ratio of Capital to RWAs	At least 8% (CAR)	8%	8% + 2.5% of Capital Conservation Buffers
	Tier 1 capital to RWAs	At least 4%	4%	6%
Pillar II (Supervisory Review Process)		No provisions for Supervisory Review	Risk Based Supervision introduced	Enhanced Supervisory Process
Pillar III (Disclosure & Market Discipline)		No Provisions related to Market Discipline	Quantitative and Qualitative disclosures prescribed at Quarterly, Half-Yearly and Yearly intervals	Enhanced Disclosure Norms

### Basel norms implementation in India:

- **Basel 1 norms** were adopted in India with the announcement by RBI in its Mid-term Review of Monetary and Credit Policy for 1998-99 to raise Capital to Risk Weighted Assets Ratio (CRAR) from 8 per cent to 9 per cent.
  - In 2007, RBI announced the final guidelines for implementation of Basel II.
- **Draft guidelines** for implementation of Basel III capital regulations were issued in Dec 2011.
  - **The Basel III capital regulations (Pillar I of Basel III Norms)** were implemented in India with effect from **April 2013** and have been **fully implemented as on October 2021**.
  - As compared to the Basel norms, **the RBI's prescribed norms are stricter and more prudential**.

### Important Terminologies related to Basel Norms

- **Tier I capital (Core Capital):** It include **paid up share capital, stocks and disclosed reserve**.
  - These are more **permanent in nature** and as a result, have **high capacity to absorb losses**.
- **Tier II capital (Supplementary Capital):** It includes all other capital e.g. **Undisclosed reserve, revaluation reserves, general provisions and loss reserves**.
  - It is **considered less reliable than Tier 1 capital** because it is more difficult to accurately calculate and more difficult to liquidate.
- **Risk weighed Assets (RWA):** RWA is linked to minimum amount of capital that banks must have relative to bank's risk from its lending activities. The more the risk, the more the capital needed to protect depositors.
- **Capital Adequacy Ratio (CAR) or Capital to Risk (Weighted) Assets Ratio:** CAR is a percentage that measures a bank's financial health by comparing its capital to its risk-weighted assets.
- **Liquidity Coverage Ratio (LCR):** LCR is a requirement that requires banks to maintain a minimum amount of liquid assets to withstand cash outflows over a 30-day period.
- **Leverage ratio:** The leverage ratio i.e. **ratio of Tier I capital to the bank's average total consolidated assets** (sum of the exposures of all assets and non-balance sheet items).
  - Leverage ratio shows **how much of a company's capital comes from debt**, or how well it can meet its financial obligations.
- **Capital Conservation Buffer:** Banks are required to hold **capital conservation buffer** to ensure **cushion of capital** that can be used **to absorb losses during financial stress**.
- **Countercyclical Buffer:** It is a mechanism that allows banks to **build up capital during periods of excessive credit growth** to help the banking system absorb losses during downturns.

**Important Ratios Related with Basel Norms**

**Leverage ratio** =  $\frac{\text{Tier 1 capital}}{\text{Exposure Measure}}$

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**LCR** =  $\frac{\text{High quality liquid assets}}{\text{Total net cash out flow over next 30 days}}$

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**CAR** =  $\frac{\text{Capital (Tier I and Tier II)}}{\text{Risk weighed assets}}$

### 3.11. FINANCING FOR SUSTAINABLE DEVELOPMENT REPORT 2024

#### Why in the News?

2024 Financing for Sustainable Development Report was recently released by the **Inter-agency Task Force on Financing for Development**.

#### About Inter-Agency Task Force on Financing for Development

- It comprises over 60 United Nations agencies, programmes and offices, regional economic commissions and other relevant international institutions.
- **UN Department of Economic and Social Affairs (UNDESA)** serves as its coordinator of the initiative.
- It was convened by the **United Nations (UN) Secretary General** to follow up on the seven action areas of the Addis Ababa Action Agenda.

#### About Financing for Sustainable Development

- It is **centered around supporting** the follow-up to the agreements and commitments on **Financing for Development**:
  - in Monterrey, Mexico in 2002;
  - in Doha, Qatar in 2008; and
  - in Addis Ababa, Ethiopia in 2015.
- **Addis Ababa Action Agenda** provides a new **global framework for financing sustainable development**.
  - It was adopted at the **Third International Conference on Financing for Development** held in Addis Ababa, Ethiopia, in 2015.
  - It aligns **all financing flows and policies with economic, social and environmental priorities** and ensures that financing is stable and sustainable.
  - It identified **seven action areas** for financing sustainable development (see infographic).
  - It **mandates the Task Force to**
    - ✓ **report annually on progress in implementing the Addis Agenda** and other Financing for Development outcomes and the means of implementation of the **2030 Sustainable Development Agenda**.
    - ✓ advise the **intergovernmental follow-up process on progress, implementation gaps and recommendations for corrective action**.

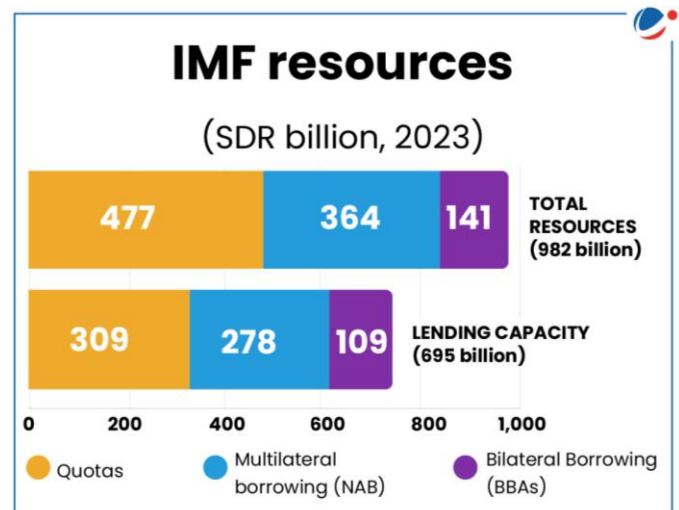
### 3.12. IMF LENDING

#### Why in the News?

The International Monetary Fund (IMF) Board completed the Reviews of the extended arrangement under the **Extended Fund Facility (EFF)** for Egypt.

#### More on the News

- The executive board’s assent increases the **Extended Fund Facility (EFF) arrangement** from the \$3 billion originally approved in December 2022 to \$8 billion.
  - EFF provide assistance to countries **experiencing serious payment imbalances because of structural impediments or slow growth** and an inherently weak balance-of-payments position.
  - It support comprehensive programs with a focus on policies needed to correct structural imbalances over an extended period.
  - **All member countries** facing actual or potential external financing needs **are eligible**.
- Egypt’s IMF-supported program presents a **comprehensive policy package** to preserve macroeconomic stability, restore buffers, and pave the way for **inclusive and private-sector-led growth**.



- Egypt is facing significant macroeconomic challenges that have become more complex to manage given the spillovers from the recent conflict in Gaza and Israel.

### About IMF lending

- IMF provides **financial support** to countries hit by crises to create breathing room so that they can implement policies that **restore economic stability** and growth.
  - Unlike development banks, the IMF **does not lend for specific projects**.

Three Types of financing instruments	
<b>General Resources Account (GRA)</b>	<ul style="list-style-type: none"> <li>● Members can have access to the <b>non-concessional terms</b> (market-based interest rates) to resolve the country's balance of payments problems during the program period.</li> <li>● The money the IMF loans to its members on its general – or non-concessional – terms comes from member countries, <b>mainly through their payment of quotas</b>.                             <ul style="list-style-type: none"> <li>○ <b>Multilateral and bilateral arrangements</b> can supplement quota funds and plays a critical role in the IMF's support for member countries in times of crisis.</li> </ul> </li> <li>● Different types of GRA loans are <b>Stand-by Arrangement (SBA), Extended Fund Facility (EFF), Flexible Credit Line (FCL), Precautionary and Liquidity Line (PLL), Short-term Liquidity Line (SLL), and Rapid Financing Instrument (RFI)</b>.</li> </ul>
<b>Poverty Reduction and Growth Trust (PRGT)</b>	<ul style="list-style-type: none"> <li>● Provides <b>concessional financial support</b> (currently at <b>zero interest rates</b>) which is better tailored to the diversity and needs of low-income countries (LICs).                             <ul style="list-style-type: none"> <li>○ Different types of PRGT loans are <b>Extended Credit Facility (ECF), Standby Credit Facility (SCF), Rapid Credit Facility (RCF)</b>.</li> </ul> </li> </ul>
<b>Resilience and Sustainability Trust (RST)</b>	<ul style="list-style-type: none"> <li>● It offers longer-term financing to address longer-term challenges, including climate change and pandemic preparedness.                             <ul style="list-style-type: none"> <li>○ Type of RST fund is <b>Resilience and Sustainability Facility (RSF)</b></li> </ul> </li> </ul>

## 3.13. MILLETS

### Why in the news?

Recently, the Closing ceremony of the **International Year of Millets 2023** took place at the FAO headquarters in Rome, Italy.

### More about the news

- The United Nations General Assembly declared 2023 the **International Year of Millets (IYM 2023)** at its 75th session in 2021.
  - It was motivated by **India's proposal at the United Nations**.
- Aims to **create domestic and global demand for millets** and **raise awareness**.




### About Millets

- **Small-grained, annual, warm-weather cereals** belonging to the grass family.
- **Staple crops of the semi-arid tropical region** and **one of the oldest foods known to humankind**.
- Depending upon their size, **they are broadly divided into:**
  - **Major millets** (E.g., sorghum, pearl millet, finger millet) and
  - **Minor millets** (E.g., little millet, foxtail millet, proso millet, barnyard millet, and kodo millet).







### Status of Millets in India

- **Largest producer of Millets in the world (~41%)** followed by **Niger (~12%)** and **China (~8%)**.
- **5<sup>th</sup> largest exporter of millets in the world (2020)**.
- **Total production: around 16 Mn tonnes.**
  - Six states namely **Rajasthan, Uttar Pradesh, Haryana, Karnataka, Maharashtra, and Gujarat** accounts for more than **83% of millet production** in the country.



MAJOR MILLETS GROWN IN INDIA	
Millet	Features
 <p><b>Jowar (Sorghum)</b></p>	<ul style="list-style-type: none"> <li>Referred as "King of Millets"</li> <li><b>Rainfall:</b> 250-300 mm</li> <li><b>Soil:</b> Clayey deep regur and alluvium</li> <li>Used mainly as a <b>fodder crop</b> in the <b>Kharif season in Northern States</b></li> </ul>
 <p><b>Bajra (Pearl Millet)</b></p>	<ul style="list-style-type: none"> <li>It is a short-duration crop and can be grown in both rain fed and irrigated conditions.</li> <li><b>Rainfall:</b> 400-500 mm</li> <li><b>Soil:</b> Loamy soil with proper drainage</li> </ul>
 <p><b>Ragi (Finger Millet)</b></p>	<ul style="list-style-type: none"> <li><b>Mostly grown in South India (Karnataka Largest producer)</b></li> <li><b>Rainfall:</b> 600-750 mm</li> <li><b>Soil:</b> Loamy soil and black soil with proper drainage</li> </ul>

- Significance of Millets**
  - For Farmers: **Low input cost and consume less water** as compared to staple crops like Rice and Wheat.
  - For Health: **Gluten free; low glycemic index** (ideal for diabetic patients); **Micronutrient composition better than Rice and Wheat.**
  - Environment: **C4 category crops** (refer diagram) with higher efficiency in absorbing and utilising CO<sub>2</sub>; **exhibit resilience to climate variability and extreme weather events**; improves soil health.
- Challenges in mainstreaming Millets:** Multiple processing requirements, Poor Shelf life, Supply chain issues, Lack of access to High-yielding variety (HYV) seeds, etc.

 C3 Plants	vs	 C4 Plants
C3 plants are plants in which the initial products of the assimilation of carbon dioxide through photosynthesis is 3-phosphoglycerate, which contains 3 carbon atoms.		A C4 plant is a plant that utilizes the C4 carbon fixation pathway. This pathway is when the CO <sub>2</sub> is first bound to phosphoenolpyruvate in the mesophyll cell.
<b>EXAMPLES:</b>  Rice  Wheat		<b>EXAMPLES:</b>  Corn  Sugarcane

- Initiatives for the promotion of millets in the country**
- Shree Anna Scheme:** Launched in 2023, the scheme aimed at popularising millets and raising their consumption in the country.
    - Indian Millets Research Center Hyderabad would be promoted as a Center of excellence.
  - Production Linked Incentive Scheme** for Food Processing Industry for Millet-based products during 2022-27 by the **Ministry of Food Processing Industries.**
  - Millets rebranded as "Nutri-Cereals"** and 2018 was declared as **"National Year of Millets"**
  - Other efforts:**
    - Millets included in **POSHAN Mission Abhiyaan** by the Ministry of Women and Child Development.
    - Sub Mission on Millets** launched under the **National Food Security Mission** in 2018.

### 3.14. STEEL SECTOR OF INDIA

**Why in the News?**






Ministry of Steel organizes National Workshop on "Forging Sustainability in the Steel Sector".

Status of Steel Sector in India					
 <p><b>Odisha</b> is the leading steel producer followed by <b>Jharkhand and Chhattisgarh.</b></p>	 <p>India is world's <b>2<sup>nd</sup> largest crude steel producer</b></p>	 <p>India is home to <b>5<sup>th</sup> highest reserves</b> of iron ore in the world and a <b>net exporter</b> of steel.</p>	 <p>But <b>demand of coking coal</b> is met mainly through <b>imports</b></p>	 <p>India's <b>per capita consumption</b> of steel is low (<b>about 1/3<sup>rd</sup> of the world average</b>)</p>	 <p><b>100% FDI through the automatic route</b> is allowed in the Indian steel sector</p>

### Types of Steel

- **Specialty Steel:** It is a downstream, value-added product of steel and covers categories such as coated/plated steel, high strength/wear-resistant steel, specialty rails, alloy steel etc.
- **Green Steel:** It is steel with lowest carbon footprint. In green steel production, hydrogen made from renewable energy replaces fossil fuels for removal of oxygen from iron ore.
- **Stainless Steel:** highly resistant to corrosion mainly due to use of chromium
- **Alloy Steel:** contain alloy elements (E.g. manganese, nickel, copper, silicon etc) in varying proportions for hardenability, resistance to corrosion, formability etc
- **Tool Steel:** comprise various amounts of tungsten, molybdenum, vanadium to render them useful for slicing and welding machinery.

### Issues faced by Steel Industry

 <p><b>Cheap Imports</b></p> <p>Due to dumping from <b>China and Vietnam</b></p>	 <p><b>Raw material availability</b></p> <p>Dependent on <b>import of coking coal from Australia, Russia</b></p>	 <p><b>Low per capita consumption</b></p> <p>Deters <b>investment</b> in the sector</p>	 <p><b>Rising emissions</b></p> <p><b>India's per ton crude steel emission is 25% higher than the global average.</b> Oxides of sulphur, Oxides of nitrogen, Carbon monoxide, Carbon dioxide etc. are major pollutants.</p>	 <p><b>Sustainability issues</b></p> <p>Arising from <b>decarbonisation, energy transition, and carbon capture.</b></p>
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### Measures taken

- **National Steel Policy (2017).** It projects crude steel capacity of 300 MT, production of 255 MT and finished steel per capita consumption of 158 Kgs by 2030-31.
- **Steel Scrap Recycling Policy (2019)** provides a framework for establishment of metal scrapping centers in the country.
- **Production Linked Incentive (PLI) scheme** for specialty steel in India.
- **Steel and Steel products (Quality Control) Order** bans sub-standard/ defective products both from domestic & imports.
- **Formation of 14 task forces** to tackle **sustainability issues** by enhancing energy efficiency, adoption of technology, use of renewable energy, use of carbon capture, utilization, and storage (CCUS) technologies.
- **Steel sector is also a stakeholder in National Green Mission** (launched by Ministry of New and Renewable Energy) for green hydrogen production and usage.

### Way Forward

The steel sector is crucial for sectors such as construction, infrastructure, automobile, engineering thus necessitates collaboration among stakeholders to adopt sustainable practices.

### Associated terms

- **Steel Scrap:** It is **discarded steel** used as a secondary raw material for manufacturing.
  - Sources include waste generation, end of life vehicles, recovered steel in buildings, infrastructure, equipment.
- **Steel Slag:** It is a by-product produced during the separation of the molten steel from impurities in steel-making furnaces. It occurs as a **molten liquid melt** and is solution of silicates and oxides that solidifies upon cooling.
  - Uses: correction of soil acidity, transportation, construction, cements production.
- **Pig Iron (crude iron):** It is produced by **smelting of Iron ore or ilmenite.**
  - Smelting is a form of extractive metallurgy which is used to produce a metal from its ore.
  - Pig Iron has **very high carbon content** (3.5-4.5%) along with silica, Manganese, Sulphur, Phosphorus, Titanium, and other trace elements.
  - High carbon content makes it **brittle** and has **limited applications.**

### 3.15. COAL SECTOR IN INDIA

#### Why in the news?

Ministry of Coal has informed that for the first time, India's coal and lignite production has crossed one Billion tonnes during the financial Year 2023-24.

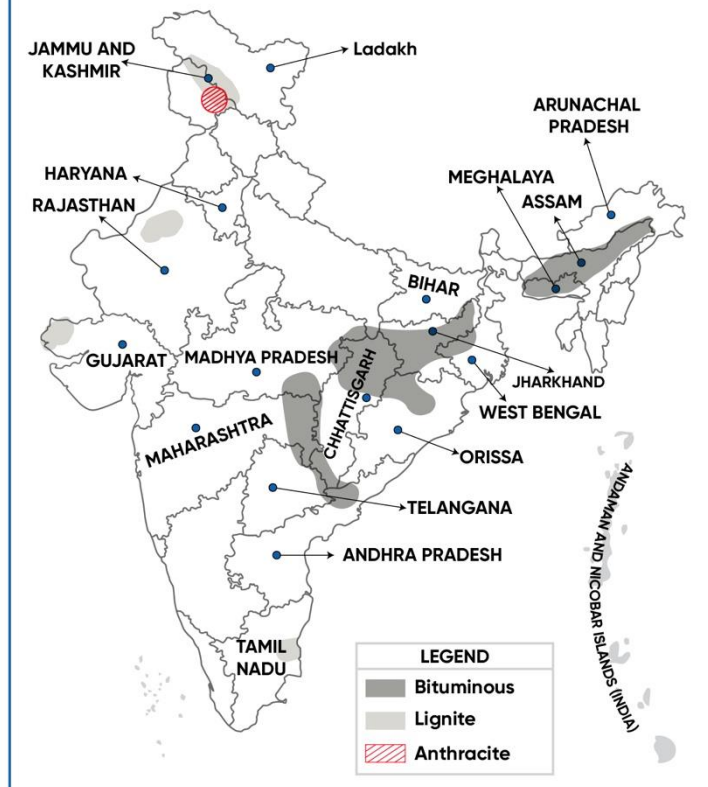
#### Key Reforms/Initiatives in Coal Sector which enhanced production

- **Enactment of Coal Mines (Special Provisions) CMSP Act, 2015:** The Act permitted auction of coal mines for commercial mining by private entities.
  - In 2020, first commercial coal mining auctions were launched.
- **Mines and Minerals (Development and Regulation) Amendment Act, 2021:** It emphasized on enhancing transparency and efficiency in the allocation of mining licenses. Allowed **Composite Prospecting Licence-cum-Mining Lease (PL-cum-ML)** specifically for coal.
  - Composite **PL-cum-ML** is a two-stage concession granted for the purpose of undertaking prospecting operations along with mining operations with a single license.
  - Also, it relaxed the end use restriction of coal by the captive mines (self-use mines).
- **National Coal Index (NCI):** NCI is a **price index combining the prices of coal from all the sales channels-** Notified Prices, Auction Prices and Import Prices.
  - It serves as a reliable indicator of market dynamics, providing valuable insights of price fluctuation.
- **FDI and Technological Advancement:** Allowing 100% FDI in coal mining under automatic route has attracted global expertise and advanced technologies.
- **Amendment to NCDP:** New Coal Distribution Policy, 2007, has been amended to allow transparent and objective sales of coal from closed/abandoned/discontinued mines.

#### Data Bank

- **5<sup>th</sup>** largest geological reserves of coal in world. (India)
- **2<sup>nd</sup>** largest consumer of coal. (India)
- **2<sup>nd</sup>** largest importer of coal. (India)
- **50.7%** of India's power generation is supported by coal and lignite (2023).

#### Coal Reserves in India



#### Key Issues/Challenges in Coal Sector

- **High Import Dependence:** It is mainly because there is **less availability of high gross calorific value (GCV) coal** in India. This type of coal has low ash and sulphur content.
  - Sectors like Iron and steel are major importer of coking coal.
    - ✓ **Coking coal** produced in the country has ash between 28 to 42%. On the other hand, ash percentage in **imported coking coal** is less than 10%.
- **Dominance of Coal India Limited:** **Coal India Limited (CIL)** contributes over 80% of the country's indigenous coal production and supply.
- **Others:** Lack of Upgradation, higher coal logistics costs, **environment Issues, non-payment of outstanding dues** by Power sector consumers, etc.

**Related news**

**Index of eight Core Industries (ICI)**

- Combined ICI increased by 6.7% (provisional) in February 2024 as compared to the Index of February 2023.
- **The ICI measures the combined and individual performance of production of eight core industries**
  - **Eight core industries are** Fertilizers, Cement, Natural Gas, Crude Oil, Coal, Electricity, Steel, and Petroleum Refinery Products.
    - ✓ They comprise **40.27%** of the weight of items included in the **Index of Industrial Production (IIP)**.
  - **ICI is released** by the **Office of the Economic Adviser**, Ministry of Commerce & Industry.

### 3.16. IPRPM FRAMEWORK

**Why in the news?**

Delhi High Court has declared ‘Haldiram’ as well-known trademark.

**More on the news**

- High Court declared that ‘Haldiram’ as well as the red oval-shaped mark of the brand as a **‘well-known mark’** in respect of food items, restaurants and eateries in terms of the **Trade Marks Act (TMA), 1999**.
- TMA defines **well-known trademark** as a mark which has become so as to the substantial segment of the public which uses such goods or receives such services that the use of such mark indicates a connection.

**India’s Intellectual Property Rights (IPRs) Policy Management (IPRPM) framework**

IPRs	Legal provision	Subject Area	Term of Protection
Patent	Patent Act, 1970	Novel, Inventive and having industrial utility	20 Years
Trademark	Trade Marks Act 1999	Protects brand name, logo, design for a business or commercial enterprise	10 years; Can be renewed for 10 years.
Designs	Designs Act 2000	New or original designs	10 + 5 years
Copyrights	Copyrights Act 1957	Creative, artistic, literary, etc.	Authors – Lifetime + 60 years, Producers – 60 years, Performers – 50 years
Geographical Indications (GI)	GI Act, 1999	Unique characteristics due to geographical linkage	10 years; Can be renewed for 10 years.
Trade Secrets	Protected under Common Law	Confidential information having commercial value	Till confidentiality is safeguarded

### 3.17. OTHER IMPORTANT DEVELOPMENTS

<b>UN Trade and Development</b>	<ul style="list-style-type: none"> <li>• United Nations Conference on Trade and Development (UNCTAD) has been <b>rebranded as UN Trade and Development</b>.</li> </ul>
<b>CDP – SURAKSHA</b>	<ul style="list-style-type: none"> <li>• Several states are using <b>SURAKSHA platform for disbursing subsidies to horticulture farmers under the Cluster Development Programme (CDP)</b>.           <ul style="list-style-type: none"> <li>○ CDP is a component of the central sector scheme of National Horticulture Board (NHB).</li> </ul> </li> <li>• <b>About CDP-SURAKSHA</b> <ul style="list-style-type: none"> <li>○ SURAKSHA stands for <b>‘System for Unified Resource Allocation, Knowledge, and Secure Horticulture Assistance’</b>.</li> <li>○ It allows an instant disbursement of <b>subsidies to farmers</b> in their bank account by utilising the e-RUPI voucher from the NPCI.</li> <li>○ Its key features are <b>database integration with PM-KISAN</b>, UIDAI validation, geotagging, geo-fencing etc.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ CDP-SURAKSHA allows access to farmers, vendors, Implementing Agencies, Cluster Development Agencies etc.</li> </ul>
<b>National Investment and Infrastructure Fund (NIIF)</b>	<ul style="list-style-type: none"> <li>• NIIF has invested \$200 million in iBUS Network and Infrastructure Pvt Ltd.</li> <li>• <b>About NIIF (2015)</b> <ul style="list-style-type: none"> <li>○ A Sovereign-linked <b>Alternative Asset Manager</b>, established by the Government of India (having a share of 49 %).</li> <li>○ It is a collaborative investment platform for international and Indian investors.           <ul style="list-style-type: none"> <li>✓ It operates in two distinct and attractive asset classes: <b>Indian Infrastructure</b> and <b>Growth Equity</b>.</li> </ul> </li> <li>○ It was established as an <b>Alternative Investment Fund (AIF)</b>, registered with <b>Securities and Exchange Board of India (SEBI)</b>.</li> <li>○ Its <b>governing council</b> is the headed by Finance Minister.</li> <li>○ <b>Key Funds under NIIF:</b> Master Fund, Strategic Opportunities Fund (SOF) etc.</li> </ul> </li> </ul>
<b>Federation of Indian Chambers of Commerce and Industry (FICCI)</b>	<ul style="list-style-type: none"> <li>• FICCI celebrates its 97th Foundation Day.</li> <li>• <b>FICCI</b> <ul style="list-style-type: none"> <li>○ <b>Genesis:</b> A non-government, not-for-profit organisation <b>established in 1927</b>.</li> <li>○ <b>About:</b> FICCI is the <b>largest and oldest apex business organisation</b> in India.           <ul style="list-style-type: none"> <li>✓ It serves its members from Indian private and public corporate sectors and multinational companies.</li> </ul> </li> <li>○ <b>HQ:</b> New Delhi.</li> <li>○ <b>Role:</b> FICCI articulates views and concerns of industry, influencing policy to encouraging debate, engaging with policy makers and civil society.           <ul style="list-style-type: none"> <li>✓ Established <b>Committee Against Smuggling and Counterfeiting Activities Destroying the Economy (CASCADE)</b> Forum in 2011.</li> </ul> </li> </ul> </li> </ul>

# Lakshya

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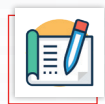
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# Answer Writing for **CIVIL SERVICES** **MAINS EXAMINATION**



Answer writing holds paramount importance in the UPSC Mains exam as it serves as the primary means for candidates to demonstrate their knowledge, understanding, analytical ability, and time management skills. Effective answer writing is pivotal in showcasing one's ability to synthesize information, critically evaluate diverse perspectives, and present balanced arguments concisely. Proficient answer writing is instrumental in securing high scores and distinguishing candidates in a competitive environment, ultimately determining their success in the rigorous selection process for the UPSC Mains examination.

## COMPONENTS OF AN IMPACTFUL ANSWER



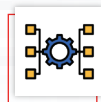
**Identification of Context:** Understanding the specific theme or topic of the question, and situating the response within its relevant context.



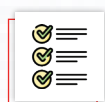
**Content Competence:** Demonstrating a comprehensive grasp of the subject matter, supported by accurate facts, relevant examples, and insightful analysis.



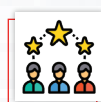
**An impactful Introduction:** Engagingly setting the stage for the answer, capturing the examiner's attention while providing a brief overview of the discussion to follow.



**Structure and Presentation:** Organizing the answer coherently with clear headings, subheadings, or bullet points, and presenting information logically and aesthetically for easy comprehension.



**Balanced Conclusion:** Summarizing key points concisely, offering insights or recommendations if applicable, and providing a satisfying closure to the argument or discussion.



**Language:** Employing precise, formal language appropriate to the context, avoiding jargon, colloquialisms, or ambiguity, and demonstrating fluency and clarity in expression.

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## 4. ENVIRONMENT

### 4.1. CLIMATE CHANGE

#### 4.1.1. GREEN CREDIT RULE

##### Why in the news?

Recently, the Ministry of Environment and Forests issued further guidelines on its Green Credit Programme (GCP).

##### More about the news

- In February 2024, the ministry released rules for calculating green credit for tree plantations.
- The new guidelines have been issued for the preparation of cost estimates for the eco-restoration of degraded forests.
- **Key Provisions of the new guidelines**
  - Focus of work for plantation on degraded forest areas under the GCP to be on **eco-restoration of degraded forests**.
  - Number of trees to be planted depends **upon site characteristics and may vary as per the site conditions**.
  - **Activities for eco-restoration not to be limited to the plantation of trees** and also include other activities (see image).
  - ✓ Fencing may also be provided if protection against anthropogenic pressures.
  - **Preference to indigenous species**.
  - **Plantation of high-quality seedlings** to ensure their healthy growth.
  - **Retention of Naturally growing seedlings**.
  - Cost estimates may be titled as '**Ecorestoration of the identified degraded forests**'.

#### Activities for eco-restoration under the Guidelines



Plantation of shrubs, herbs, grasses.



Soil and moisture conservation works.



Terracing.



Rain water harvesting etc.

To know more about the Green Credit Program and the Green Credit Rules, kindly refer to Article 4.1.1. Green Credit Program in PT 365 Updated 1 (January-March) of VisionIAS.

#### 4.1.2. DIRECT AIR CAPTURE AND STORAGE

##### Why in the news?

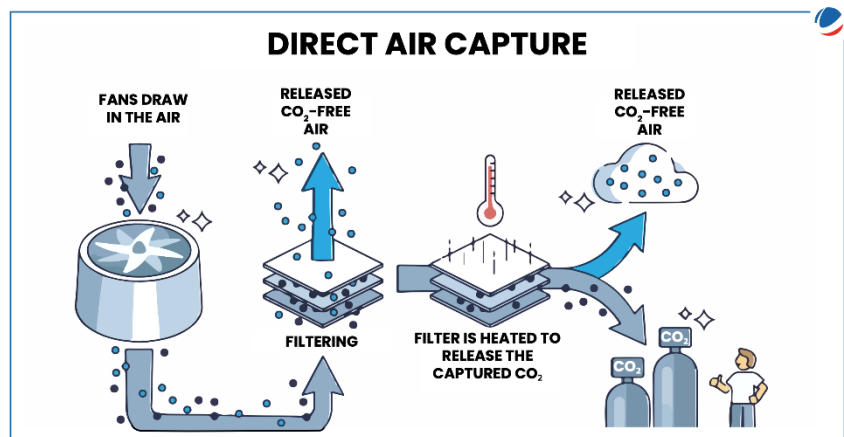
World's largest Direct Air Capture and Storage (DAC+S) plant, **Mammoth**, started operation in Iceland.

##### About DAC+S Technology

- A **Carbon Dioxide Removal (CDR) technology** that captures CO<sub>2</sub> directly from the atmosphere at any location.
- It is **distinct from carbon capture** which is generally carried out at the point of emissions.
- CO<sub>2</sub> can be **permanently stored in deep geological formations (DAC+S)** or used for various applications.

##### About CDR

- Refers to **anthropogenic activities that remove CO<sub>2</sub> from the atmosphere** and store it durably in geological, terrestrial, or ocean reservoirs.





- **Other CDR technologies**
  - **Afforestation/Reforestation and Soil Carbon Sequestration:** Fixing atmospheric carbon in biomass and soils.
  - **Enhanced Weathering:** Mining of rocks containing minerals that **naturally absorb CO<sub>2</sub>**.
  - **Ocean-based CDR:** Ocean fertilization (adding nutrients to upper layers), ocean alkalinity enhancement (transformation of CO<sub>2</sub> as bicarbonate/carbonate), coastal blue carbon management, etc.
  - **Bioenergy with Carbon Capture and Storage (BECCS):** Using biomass as energy for CDR and storing biogenic carbon geologically.

### 4.1.3. OTHER IMPORTANT NEWS

#### 4.1.3.1. CLIMATE TECHNOLOGY CENTRE AND NETWORK (CTCN)

- Climate Technology Centre and Network (CTCN) marks its **10<sup>th</sup> anniversary**.
- **CTCN**, established in 2014, is the **implementation arm of Technology Mechanism of the United Nations Framework Convention on Climate Change**.
  - Technology Mechanism was **established in 2010** for accelerating and enhancing **climate technology development and transfer**.
  - It is hosted by the **UN Environment Programme**.
  - It promotes accelerated **transfer of environmentally sound technologies** for low carbon and climate resilient development at the request of developing countries.
  - **Headquarters of CCTN:** Copenhagen, Denmark.

#### 4.1.3.2. NEW COLLECTIVE QUANTIFIED GOAL ON CLIMATE FINANCE (NCQG)

- Parties to the UNFCCC have made new submissions for the NCQG under Paris Agreement.
- NCQG was proposed in COP21 for setting **post-2025 climate finance goal (new goal)**.
  - In 2009 parties to UNFCCC had decided to mobilise **\$100 billion annually** by 2020 which was **subsequently extended to 2025**.
- **Article 9 of the Paris Agreement** stipulates that developed country Parties shall provide financial resources to assist developing country.
- However, this target is **yet to be achieved reflecting significant shortfalls in it**.
- NCQG is proposed to **raise the floor on climate finance** above the **current \$100 billion annual target**.

#### 4.1.3.3. CLIMATE PROMISE INITIATIVE

- UN Development Programme unveiled **Climate Promise 2025**, next stage of its Climate Promise Initiative.
- **Climate Promise Initiative** is an **initiative to support developing countries on their climate action**.
- It is **world's largest offer of support** to developing countries on **NDC (Nationally Determined Contribution) enhancement and implementation**.
- Climate Promise 2025 aims to **align next generation of developing countries' NDCs** to the goals of 2015 Paris Climate Agreement.

To know more about Nationally Determined Contribution, kindly refer to Article 1.2.3. Nationally Determined Contributions (NDC) in Environment PT 365 (April-Dec).

#### 4.1.3.4. MYAC (ONE MILLION YOUTH ACTIONS CHALLENGE)

- **1MYAC (One Million Youth Actions Challenge)** is promoted by the **One UN Climate Change Learning Partnership (UN CC:Learn)**.
  - **UN CC: Learn** is a collaborative initiative of 36 multilateral organizations working together to help countries build the knowledge and skills they need to take action on climate change.
- **1MYAC** aims to **encourage youth aged 10 to 30 years old** to take concrete actions for a more **sustainable future**.
- It works to **promote four Sustainable Development Goals (SDGs):** SDG 6 (**clean water and sanitation**), SDG 12 (**responsible consumption and production**), SDG 13 (**climate action**) and SDG 15 (**life on land**).



#### 4.1.3.5. CLEAN ENERGY TRANSITIONS PROGRAMME (CETP)

- **Clean Energy Transitions Programme (CETP) Report** was released by the International Energy Agency (IEA).
- **CETP**, launched in 2017 by IEA, is leading the global fight against climate change by **accelerating clean energy transitions**.
- Under **CETP**, IEA provides **technical assistance, insights etc.**
- Its objectives are aligned with **2015 Paris Agreement** and the **Sustainable Development Goals**.

#### 4.1.3.6. CARBON FARMING

- European Parliament and the European Council recently reached a **provisional agreement** on a regulation to establish the first **EU-level Carbon Removal Certification Framework**.
- Framework will boost innovative **carbon removal technologies** and **carbon farming**.
- **Carbon Farming** uses **regenerative practices** to improve agriculture, restore ecosystems, and combat climate change by storing carbon and reducing emissions.
- **Common Methods:** Agroforestry, conservation farming (minimising soil disturbance), integrated nutrient management, Renewable Energy Production Grasslands Conservation, etc.

#### 4.1.4. REPORTS AND INDICES

Report	Key Highlights
<b>State of Global Climate Report, 2023</b>	<ul style="list-style-type: none"> <li>• <b>Released by:</b> World Meteorological Organization (WMO).</li> <li>• <b>Key Findings</b> <ul style="list-style-type: none"> <li>○ <b>2023 was the warmest year on record</b>, with the global average near-surface temperature at <b>1.45 degree Celsius above the pre-industrial baseline</b>.</li> <li>○ <b>Greenhouse gas levels, surface temperatures, ocean heat and acidification</b>, etc. reached record high.</li> </ul> </li> </ul>
<b>Recipe for a Livable Planet: Achieving Net Zero Emissions in the Agrifood System' report</b>	<ul style="list-style-type: none"> <li>• <b>Released by:</b> World Bank</li> <li>• Report provides <b>first comprehensive global roadmap for mitigating the agrifood system's contributions</b> to climate change.</li> <li>• <b>Key findings</b> <ul style="list-style-type: none"> <li>○ Agrifood generates almost a <b>1/3rd of global greenhouse gas emissions</b>.</li> <li>○ <b>Top Emitters: China, Brazil, and India</b> are the <b>top 3 emitters</b>.</li> <li>○ In India, <b>60% of such emissions come from the farm gate</b>, mainly due to enteric fermentation in the livestock sector.</li> </ul> </li> </ul>
<b>A World Energy Transitions Outlook Brief: Tracking CoP 28 outcomes" report</b>	<ul style="list-style-type: none"> <li>• <b>Released by:</b> International Renewable Energy Agency (IRENA). <ul style="list-style-type: none"> <li>○ Tracks global progress towards the <b>energy transition commitment to triple renewables by 2030 as outlined in COP 28 of UNFCCC</b>.</li> </ul> </li> <li>• <b>Key findings</b> <ul style="list-style-type: none"> <li>○ 2023 added <b>473 GW</b> (73% contributed by Solar energy) <b>additional Renewable</b> to global energy mix. <ul style="list-style-type: none"> <li>✓ However, annual addition must <b>reach almost 1100 GW</b> to meet tripling target.</li> </ul> </li> <li>○ With a growth of 20.1% <b>Asia was leader</b> in renewable deployment and its growth was driven by China.</li> </ul> </li> </ul>
<b>Measuring the Emissions and Energy Footprint of the ICT Sector: Implications for Climate Action" Report</b>	<ul style="list-style-type: none"> <li>• <b>Released by:</b> International Telecommunication Union (ITU) and the World Bank <ul style="list-style-type: none"> <li>○ It presents the <b>energy and emissions profile</b> of Information and Communication Technology (ICT) sector and assesses the <b>30 highest emitting countries (including India)</b> for telecommunications.</li> </ul> </li> <li>• <b>Key highlights of the report:</b> <ul style="list-style-type: none"> <li>○ At least <b>1.7 % of global emissions</b> stem from the ICT sector.</li> <li>○ ICT sector accounted for <b>60% of renewable power purchases</b> in 2021, pointing to potential avenues to abate increasing emissions.</li> </ul> </li> </ul>

<p><b>Green and Social Bond Impact Report 2023</b></p>	<ul style="list-style-type: none"> <li>• <b>Released by:</b> International Finance Corporation (IFC) <ul style="list-style-type: none"> <li>○ IFC launched <b>Green Bond Program in 2010</b> to unlock investment for private sector eligible projects that seek to mitigate climate change and <b>Social Bond Program in 2017</b>.</li> </ul> </li> <li>• <b>Key Highlights</b> <ul style="list-style-type: none"> <li>○ \$2 billion raised through Green bond is expected to <b>reduce 3.3 million metric tons of carbon dioxide equivalent</b> per year.</li> <li>○ \$1.2 billion raised through Social bonds will cater sectors like Agribusiness, Gender finance, Education, etc.</li> </ul> </li> </ul>
<p><b>Global Status Report for Buildings and Construction (Buildings-GSR) 2024</b></p>	<ul style="list-style-type: none"> <li>• <b>Released by:</b> Jointly by <b>United Nations Environment Programme (UNEP)</b> and <b>Global Alliance for Buildings and Construction (GlobalABC)</b>. <ul style="list-style-type: none"> <li>○ <b>GlobalABC, founded at COP21</b>, is leading <b>global platform</b> for all built environment stakeholders committed to a common vision: A zero-emission, efficient and resilient buildings and construction sector.</li> </ul> </li> <li>• <b>Key findings</b> <ul style="list-style-type: none"> <li>○ Building and Construction Sector (BCS) accounts for about <b>21% of global Greenhouse Gas (GHG) Emissions</b>.</li> <li>○ In 2022, buildings were responsible for <b>34% global energy demand</b> and <b>37% of energy and process-related carbon dioxide (CO<sub>2</sub>) emissions</b>.</li> <li>○ India is attributing <b>40% of its CO<sub>2</sub> emissions to buildings</b>.</li> </ul> </li> </ul>
<p><b>More Chilling Than Ever</b></p>	<ul style="list-style-type: none"> <li>• <b>Released by:</b> Environmental Investigation Agency (EIA).</li> <li>• Highlighted that illegal trade in HFCs into Europe is <b>fuelled by ongoing demand for gases and high profits</b>.</li> </ul>



**PRELIMS & MAINS INTEGRATED MENTORING PROGRAM 2025**

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11 <sup>th</sup> June	15 Months	English & Hindi	Offline & Online

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## 4.2. POLLUTION

### 4.2.1. E-WASTE (MANAGEMENT) AMENDMENT RULES, 2024

#### Why in news?

E-Waste (Management) Amendment Rules, 2024 were notified recently.

#### Major provisions of E-Waste (Management) Amendment Rules, 2024

- **Relaxation of timelines for filing of returns or reports:** By a manufacture, producer, refurbisher or recycler for a period not exceeding nine months.
- **Central Government can** establish one or more platform for exchange or transfer of **Extended Producer Responsibility (EPR)** certificates.
- Exchange price of EPR certificate to be between **the highest and lowest prices fixed by central pollution control board.**
- **Other recent amendment: E-Waste (Management) Second Amendment Rules, 2023.** Its major provisions include-
  - Provides more clarity to the **exemption of reduction of harmful substances.**
  - Determination of **the conversion factor of EPR certification** generation.
  - Management of **refrangent by the producers.**

#### Global initiatives/effort to check e-waste



**The Basel Convention:** A **global treaty** that aims to reduce the movement of **hazardous waste between countries**, including e-waste.



**The Global E-waste Statistics Partnership (GESP):** Collaboration between the **UN University and the International Telecommunication Union** to improve the monitoring and reporting of e-waste data worldwide.



**E-waste Challenge:** A global initiative by the **World Economic Forum** that aims to create a circular economy for electronics.



**E-waste Coalition 2018:** A **non-binding** Letter of Intent was signed by seven organisations from the UN system, active in addressing the global e-waste challenge.

To know more about E-Waste, kindly refer to Article 2.5. Other Important News in Environment PT 365 (April-Dec).

### 4.2.2. PHASING OUT MERCURY MEASURING DEVICES IN HEALTHCARE PROJECT

#### Why in the news?

UN Environment Programme (UNEP) launched Phasing out mercury measuring devices in healthcare project.

#### About the Project

- It is a **\$134-million initiative** led by UNEP.
- **Aim**
  - **Phase out mercury thermometers** and **sphygmomanometers** at a rate of 20% annually, and reduce mercury spillages.
  - Encourage adoption of **accurate, affordable and safe mercury-free alternatives**, while improving management of mercury-containing medical waste.
- **Member countries:** Albania, Burkina Faso, **India**, Montenegro, and Uganda.
- **Funding:** By Global Environment Facility.
- **Execution:** By World Health Organisation.
- Several countries and international organizations have already **established reference levels for daily or weekly methyl-mercury or mercury intakes** that are estimated to be safe (or without appreciable risk to health).

To know more about Mercury, kindly refer to Article 2.6.1. Minamata Convention on Mercury in Environment PT 365 (April-Dec).

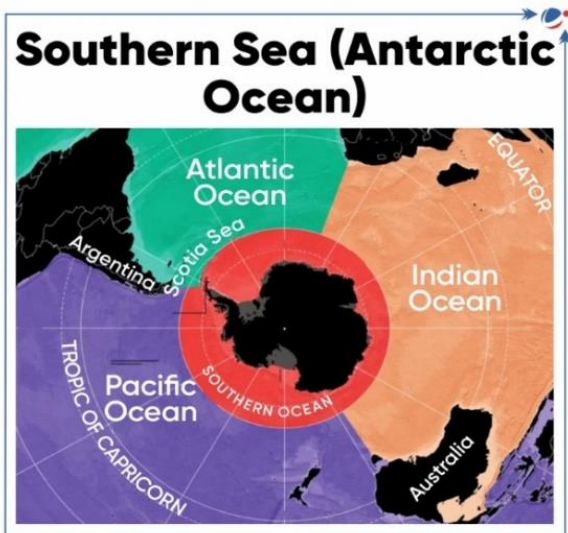
### 4.2.3. CLEANEST AIR IN SOUTHERN OCEAN

#### Why in the news?

Scientists discover the reason behind the cleanest air (low levels of aerosol) in the Southern Ocean region.

#### Reasons for the low level of aerosols in Southern Ocean region

- **Reduced Human activity in the region**, resulting in minimal emissions and fossil fuel usage.
- Phytoplankton that are a source of airborne sulfate particles are fewer in winter, resulting in **fewer sulfate particles during winter**.
- **Role of Clouds and Rain**
  - **Honeycomb-structured clouds** play a crucial role in the region's climate.
  - Open honeycomb clouds **allow sunlight to pass and tend to produce more intense, sporadic rainfall**, which "washes" the aerosols out.
  - These clouds are **more common in the winter**.
  - Closed honeycomb clouds **reflect sunlight** leading to low rainfall and thus less effective at removing aerosols.

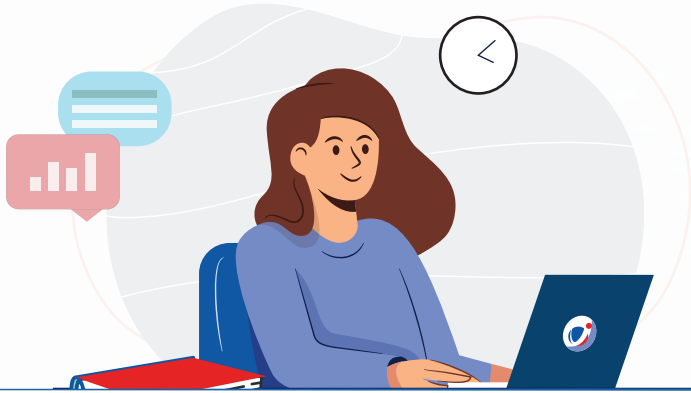


#### About Southern Ocean (Antarctic Ocean)

- **Geologically the youngest** of the world's oceans.
- Dominated by the clockwise circulating **Antarctic Circumpolar Current**.
- **Known for its strong winds, intense storms, dramatic seasonal changes**, and cold temperatures.

### 4.2.4. REPORTS AND INDICES IN NEWS

Report/Indices	Observation
Plastic Overshoot Day 2024 report	<ul style="list-style-type: none"> <li>• <b>Released by:</b> Earth Action</li> <li>• In 2024, <b>Global Plastic Overshoot Day</b> is projected to occur on <b>September 5<sup>th</sup></b>.</li> <li>• Each country has its own Plastic Overshoot Day with <b>India's falling on 23<sup>rd</sup> April</b>.</li> </ul> <p><i>To know more about Plastic Pollution, kindly refer to Article 2.3. Plastic Pollution in Environment PT 365 (April-Dec).</i></p>
The Arctic's Plastic Crisis: Toxic Threats to Health, Human Rights, and Indigenous Lands from the Petrochemical Industry Report	<ul style="list-style-type: none"> <li>• <b>Released by:</b> Alaska Community Action on Toxics (ACAT) and the International Pollutants Elimination Network (IPEN).               <ul style="list-style-type: none"> <li>○ <b>IPEN</b> is a global network aiming to build a global movement <b>for a toxics-free future</b>.</li> </ul> </li> <li>• <b>Key Findings</b> <ul style="list-style-type: none"> <li>○ Plastic and Toxic chemicals from the world deposit and accumulate in the Arctic, making the Arctic a <b>"hemispheric sink"</b>.                   <ul style="list-style-type: none"> <li>✓ These are transported on atmospheric and oceanic currents from lower latitudes through a process known as <b>global distillation</b> or the <b>"grasshopper effect."</b></li> <li>✓ <b>Chemicals</b> threaten the <b>environment</b> and health of <b>Arctic People</b>. E.g. <b>Polyaromatic hydrocarbons</b> (cancer, heart disease), <b>Bisphenols</b> (obesity and cancer), etc.</li> </ul> </li> </ul> </li> </ul>



# Mastering CSAT:

## *A Strategic Roadmap for*

# UPSC Prelims Examination

The UPSC Prelims is the initial, highly competitive stage of the Civil Services Examination, consisting of two objective-type papers: General Studies and the Civil Services Aptitude Test (CSAT). These papers assess a candidate's knowledge, understanding, and aptitude.

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## Strategic Framework for CSAT Preparation



**Initial Self-Assessment:** Begin with a self-evaluation using the previous year's CSAT papers to identify strengths and areas for improvement.



**Study Plan:** Develop a structured study plan, focusing on high yielding areas and selecting reliable study sources.



**Regular Practice and Post-Test Analysis:** Solving and analyzing previous year papers and mock tests to familiarize with the exam format and question types, ensuring a strategic approach to covering the comprehensive syllabus effectively.



**Seeking Personalized Mentorship:** Engage with mentors to receive customized strategies for improvement. Alongside essential stress management guidance, ensuring a focused and balanced preparation journey.



**Reasoning:** Sharpen your logical and analytical reasoning by practicing diverse question types from Clocks, Calendars, Series & Progression, Direction, Blood Relation, Coding-Decoding, Syllogism, and so on.

Focus on understanding patterns and building a step-by-step approach to solving problems.



**Maths and Basic Numeracy:** Strengthen foundational mathematics by revisiting basic concepts and practicing regularly.

Utilize shortcuts and mental math techniques for quicker calculations.



**Comprehension:** Improve your reading speed and comprehension by regularly reading newspapers.

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## 4.3. BIODIVERSITY

### 4.3.1. SUSTAINABLE FINANCE FOR TIGER LANDSCAPES CONFERENCE (SFTLC)

#### Why in the News?

Recently, SFTLC was hosted by the **Bhutan government** and supported by the **Tiger Conservation Coalition**.

#### More on the news

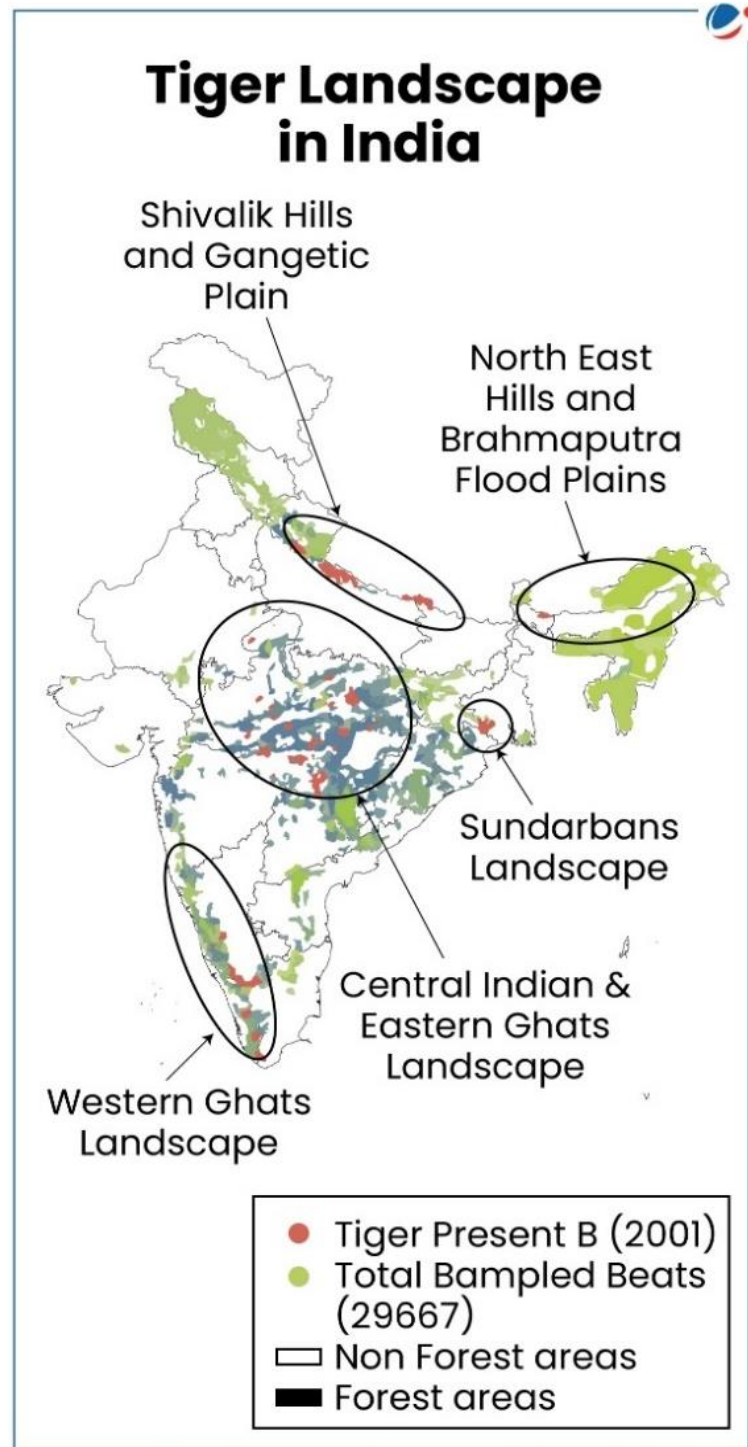
- **Tiger coalition** is an **independent group of organisations** that have worked extensively together under a common vision for tiger conservation.
- **Member organization:** International Union for Conservation of Nature, United Nations Development Programme, Wildlife Conservation Society, World Wide Fund for Nature, etc.

#### About Sustainable Finance for Tiger Landscapes Conference (SFTLC)

- It seeks to increase support for **tiger protection and tiger landscape** by using **new financial strategies** and promoting global partnerships as stated in the **Paris statement**.
  - **Tiger Landscape** includes large blocks of ecologically connected areas of suitable tiger habitat.
- It seeks to mobilize **US\$1 billion** in additional funding for tiger conservation by 2034.

#### Sustainable financing initiatives in the conference:

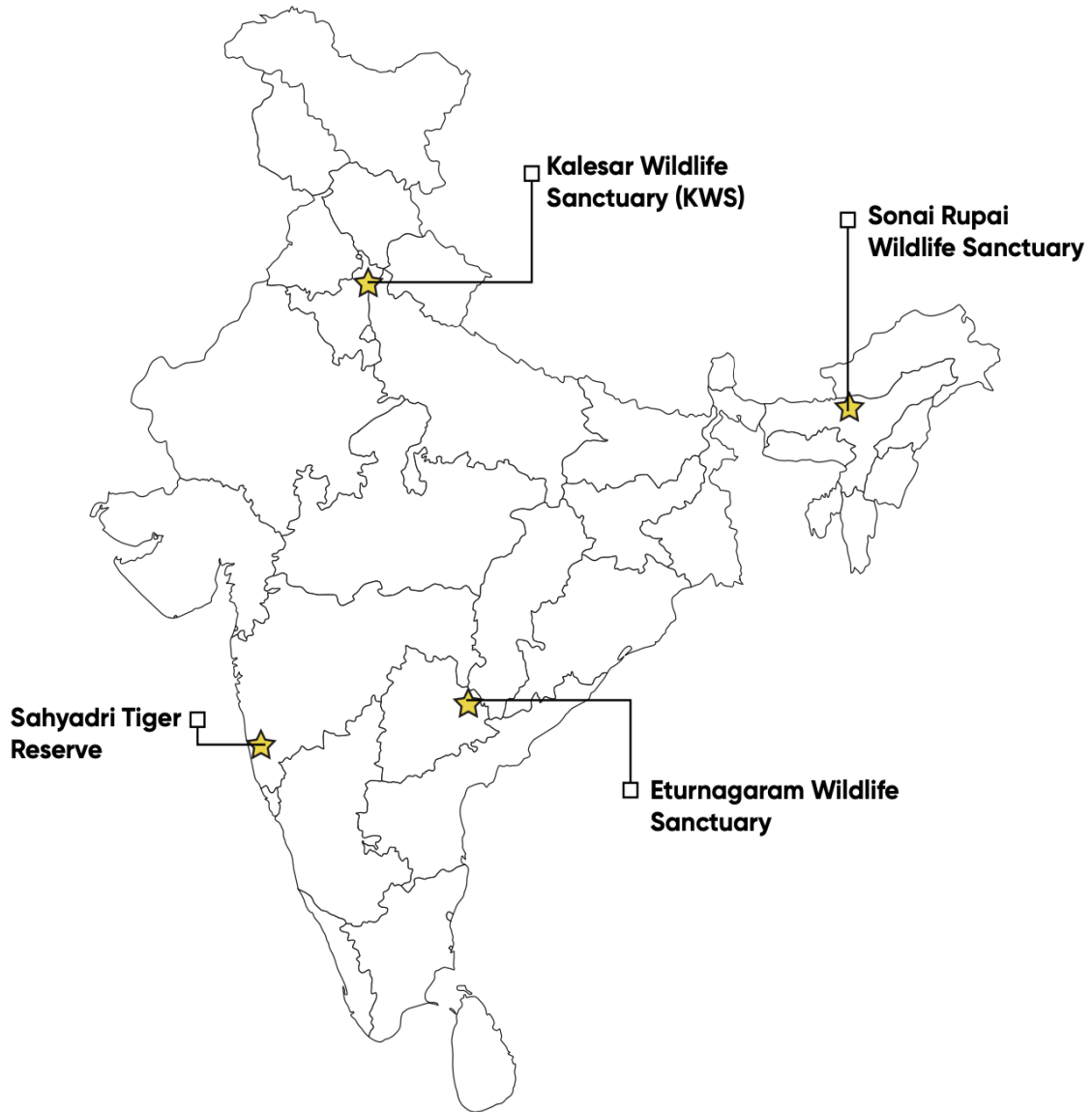
- **Tiger Landscapes Investment Fund:** Presented by the UNDP, it is a new **blended financial mechanism** under development that would catalyze nature-positive businesses with positive impacts on tigers, biodiversity, and people.
- Asian Development Bank will explore innovative financing instruments such as a **tiger bond** to engage private sector investors and promote nature based solutions.



To know more about the Tigers, kindly refer to Articles 3.2.3. Tiger Conversation in India in Environment PT 365 (April-Dec) of VisionIAS.

### 4.3.2. PROTECTED AREAS IN NEWS






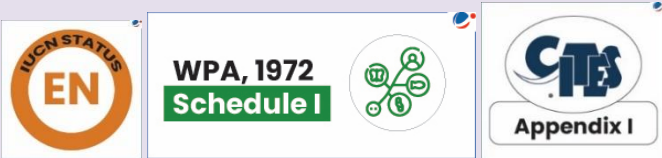
## Protected Areas in News






Protected Area	Details
<b>Assam</b>	
<b>Sonai Rupai Wildlife Sanctuary</b>	<ul style="list-style-type: none"> <li>National Green Tribunal has taken notice of polling stations, schools and other construction activities in Sonai Rupai Wildlife Sanctuary.</li> <li><b>Geographical location and other important feature</b> <ul style="list-style-type: none"> <li><b>Location: Foothills of the Himalayas</b> in the Sonitpur district of <b>Assam</b>.</li> <li>Together with Nameri National Park, it forms part of <b>Sonitpur Kameng Elephant Reserve</b>.</li> <li>An <b>Important Bird Area</b> recognized by Birdlife International.</li> </ul> </li> <li><b>Rivers:</b> Dolsiri, Gabharu, Gelgeli, Belsiri, and Sonairupai.</li> <li><b>Forest type:</b> Evergreen, Semi-evergreen and Moist Deciduous forests</li> <li><b>Fauna and fauna:</b> Asian Elephant, Indian Bison, Leopard, Indian Gaur, Sambar, Hog Deer, Sloth Bear.</li> </ul>
<b>Haryana</b>	
<b>Kalesar Wildlife Sanctuary (KWS)</b>	<ul style="list-style-type: none"> <li>The Supreme Court has stayed construction of four proposed dams inside KWS in Haryana's Yamunanagar district.</li> <li><b>Geographical location and other important features</b> <ul style="list-style-type: none"> <li><b>Location:</b> Junction of the states of <b>Haryana, Himachal Pradesh, Uttarakhand and Uttar Pradesh</b>.</li> <li><b>Largest wildlife sanctuary in Haryana</b> situated at <b>lower Shivalik</b> in the Himalayan foothills.</li> <li>An <b>important Bird and Biodiversity Areas (IBAs)</b>.</li> </ul> </li> <li><b>River: Yamuna River</b> runs to the <b>east of KWS</b>.</li> <li><b>Forest type:</b> Broadleaf Deciduous Forest.</li> <li><b>Fauna and fauna:</b> Leopard, Sloth Bear (<i>Melursus ursinus</i>), Hyena, sal, khair, shisam, etc.</li> </ul>
<b>Maharashtra</b>	
<b>Sahyadri Tiger Reserve</b>	<ul style="list-style-type: none"> <li>Maharashtra plans to relocate tigers to the Sahyadri Tiger Reserve from Tadoba-Andhari Tiger Reserve in Chandrapur district.</li> <li><b>Geographical location and other features</b> <ul style="list-style-type: none"> <li><b>Location: Sahyadri Ranges of Western Ghats</b> in Maharashtra. <ul style="list-style-type: none"> <li>✓ Spread over <b>Kolhapur, Satara, Sangli and Ratnagiri districts</b> in western Maharashtra.</li> </ul> </li> <li>Reserve was notified in 2010 <b>amalgamating Koyana Sanctuary and Chandoli National Park</b>.</li> </ul> </li> <li><b>Forest type:</b> Subtropical Hill Forests, Semi-evergreen Forests, Deciduous Forests.</li> <li><b>Fauna and flora:</b> Tiger, Atlas Moth, Moon Moth, and other endangered Butterflies, Blue finned Mahasheer fish, Hornbills etc.</li> </ul>
<b>Telangana</b>	
<b>Eturnagaram Wildlife Sanctuary</b>	<ul style="list-style-type: none"> <li>Eturnagaram Wildlife Sanctuary is witnessing forest fires.</li> <li><b>Geographical location and other features</b> <ul style="list-style-type: none"> <li><b>Location:</b> Situated at near Warangal (<b>Telangana</b>)</li> <li>Lies on <b>border of Maharashtra, Chhattisgarh and Telangana</b>.</li> </ul> </li> <li><b>River:</b> Dayyam Vagu and Godavari</li> <li><b>Flora:</b> Bamboo, Maddi, Dry Deciduous Teak, Thiruman, Madhuca</li> <li><b>Fauna:</b> Sloth Bear, Chinkara, Nilgai, Black Buck etc.</li> </ul>



4.3.3. SPECIES IN NEWS

Species	Details
<p><b>Terrestrial Species</b></p> <p><b>Gray Slender Loris</b></p> 	<ul style="list-style-type: none"> <li>Gray slender Loris was rescued in North Goa.</li> <li><b>Protection status</b></li> </ul>  <ul style="list-style-type: none"> <li><b>Characteristics</b> <ul style="list-style-type: none"> <li>Nocturnal animal.</li> <li>Slow movers and foragers, they nest near large insect colonies for easy meals.</li> <li>They are Viviparous (producing living young instead of eggs).</li> </ul> </li> <li><b>Habitats:</b> Tropical rainforests, scrub forests, semi-evergreen forests, swamps. <ul style="list-style-type: none"> <li>Found in India and Sri Lanka.</li> </ul> </li> <li><b>Threat:</b> Habitat Loss, Electrocutation on power lines etc.</li> </ul>
<p><b>Chital (Spotted Deer)</b></p> 	<ul style="list-style-type: none"> <li>Netaji Subhash Chandra Bose Island (formerly Ross Island) is facing an invasion of chital deer.</li> <li><b>Protection status</b></li> </ul>  <ul style="list-style-type: none"> <li><b>Characteristics</b> <ul style="list-style-type: none"> <li><b>Gestation period:</b> Around 231 - 235 days.</li> <li><b>Food and Feeding:</b> Grasses, but also forbs, leaves, flowers, and fruits.</li> <li><b>Antlers</b> are present only in males.</li> </ul> </li> <li><b>Habitats:</b> Riverine forest during the hot dry season while Sal forest during the monsoon season. <ul style="list-style-type: none"> <li>Native to the Indian subcontinent</li> </ul> </li> <li><b>Threats:</b> Illegal hunting, habitat loss and degradation due to human encroachment and spread of invasive alien plant species.</li> </ul>
<p><b>Aquatic Species</b></p> <p><b>Blue Whales</b></p> 	<ul style="list-style-type: none"> <li>Blue whales have made a comeback near the Seychelles after 60 years.</li> <li><b>Protection status</b></li> </ul>  <ul style="list-style-type: none"> <li><b>Characteristics</b> <ul style="list-style-type: none"> <li><b>Largest &amp; loudest animal</b> on the planet.</li> <li><b>Lifespan:</b> Estimated at around 80 to 90 years.</li> <li><b>Key Behaviour aspect:</b> Sometimes swim in small groups but are more often found alone or in pairs.</li> <li><b>Diet:</b> Feeds almost exclusively on krill (marine crustaceans)</li> </ul> </li> <li><b>Habitat:</b> Found in all oceans except the Arctic Ocean.</li> <li><b>Threats:</b> Vessel Strikes, commercial whaling, etc.</li> </ul>

<b>Reptiles, insects, amphibians , etc.</b>	
<p><b>Neptis Philyra</b></p> 	<ul style="list-style-type: none"> <li>• Rare butterfly species <b>Neptis philyra</b> was recently discovered for the first time in India.</li> <li>• Has been discovered in <b>Tale Valley wildlife sanctuary</b> in lower Subansiri district of <b>Arunachal Pradesh</b>.</li> <li>• It is commonly known as <b>long-streak sailor</b>.</li> <li>• It has <b>serrated wings with rich brownish-black on the upper side</b> and yellow brown on the underside.</li> <li>• <b>Habitat:</b> Evergreen forests, riverine vegetation, and rocky streams.             <ul style="list-style-type: none"> <li>○ It is <b>generally found in east Asia</b>, including eastern Siberia, Korea, Japan, central and southwest China.</li> </ul> </li> </ul>
<b>Plant species</b>	
<p><b>Arogyapacha (Trichopus zeylanicus)</b></p> 	<ul style="list-style-type: none"> <li>• 'Arogyapacha' (Trichopus zeylanicus) found endemic to Agastyar hills of Kerala is <b>used by the local 'kani' tribe as a health food for getting instant stamina, ever green health and vitality</b>.</li> <li>• It is a small medicinal plant with <b>slender stems and thick leaves</b>, grows in <b>shade near the banks of streams and rivulets</b> and only its <b>tender fruits plant are edible</b>.</li> <li>• <b>Medicinal properties:</b> Anti-oxidant, anti-microbial, anti-inflammatory, anti-tumour, anti-ulcer, anti-hyperlipidemic, hepatoprotective and anti-diabetic, etc.</li> <li>• Arogyapacha is a subspecies of Trichopus zeylanicus.             <ul style="list-style-type: none"> <li>○ The subspecies found in India is called <b>Trichopus zeylanicus travancoricus</b>.</li> <li>○ Though the main species, Trichopus zeylanicus, is found in Sri Lanka and Thailand, <b>only the Indian variety is proved to have medicinal qualities</b>.</li> </ul> </li> <li>• <b>A drug named 'Jeevani'</b> has been developed using "Arogya Pacha" with three more ingredients by Tropical Botanic Garden and Research Institute (TBGRI), Thiruvananthapuram, Kerala.             <ul style="list-style-type: none"> <li>○ Kani Tribes gets a share of 50% on commercial returns.</li> </ul> </li> </ul>
<p><b>Oleander Flowers (Nerium oleander/ rosebay)</b></p> 	<ul style="list-style-type: none"> <li>• Kerala <b>banned the use of oleander flowers</b> in temple offerings after death of two women due to accidental poisoning from the flower.</li> <li>• It is a <b>rapidly growing evergreen, rounded shrub or small tree native to Europe and Asia</b>.</li> <li>• Also known as <b>Arali</b> and <b>kanaveeram</b> in Kerala.</li> <li>• It is <b>heat, drought, wind, air pollution, salt, and poor soil tolerant</b>.</li> <li>• <b>All parts of the plant are highly toxic</b> as it contains <b>cardiac glycosides</b> (a type of chemical) including nerioside and oleandroside.</li> </ul>
<b>Newly discovered species</b>	
<p><b>New tardigrade species</b></p>	<ul style="list-style-type: none"> <li>• A new species of marine tardigrade discovered from the southeast coast of Tamil Nadu is named <b>Batillipes chandrayaani</b> after <b>Chandrayaan-3 moon mission</b>.</li> <li>• <b>About Batillipes chandrayaani</b> <ul style="list-style-type: none"> <li>○ <b>Third marine tardigrade species</b> to have been scientifically described from the Indian waters.</li> </ul> </li> </ul>



- It has a **trapezoid-shaped head** and **four pairs of legs** with **sharp-tipped sensory spines**.
- **About Tardigrade**
  - **Near-microscopic aquatic animals** with plump, segmented bodies and flattened heads.
  - Also known as **‘water bears’**, they are among the **hadiest animals**.

#### 4.3.4. OTHER IMPORTANT NEWS

##### 4.3.4.1. GLOBAL FOREST WATCH (GFW)

- India Lost 2.33 Million Hectares (Mha) of Tree Cover since 2000 as per Global Forest Watch (GFW).
- This is **equivalent to a 6% decrease in tree cover** during 2001-2023.
  - Tree cover is an estimated area **comprising of tree patches, which are less than 1 hectare** and isolated trees outside the recorded forest.
  - Forest cover is defined as an **area more than 1 hectare in extent** and having **tree canopy density of 10% and above**.
- **World Resources Institute (WRI)** established GFW in 1997.
  - It is an **online platform** that provides **data and tools for monitoring forests**.
  - It **allows access to near real-time information** about where and how forests are changing around world

##### 4.3.4.2. PLANKTON CRASH

- The red color of **Promenade beach in Puducherry** last year was connected to **plankton crash**, an expert panel told National Green Tribunal (NGT).
- **Noctiluca scintillans**, a type of phytoplankton, turn a **red color when in large numbers experienced a crash**, leading to the **release of colored pigment from their cells**.
  - These pigments then **stick to rocks and the sea floor**, forming a **biofilm-like layer and causing ‘red tides’**.
- Plankton crashes happen due to a **lack of nutrients or lack of CO<sub>2</sub>** in the **earlier part of the production cycle**.
  - Plankton may also die later in the cycle due to **sudden change in water quality**.

##### 4.3.4.3. GAPE LIMITATION

- Gape limitation is a concept in ecology that refers to the **physical constraint on the size of prey** that a predator can consume. This limitation is primarily determined by the size of the **predator’s mouth or “gape”**.
  - This means that small **predators can only eat small prey, while bigger predators can eat bigger prey**.
  - For example, lions can take down large prey like zebras due to their large gapes, while smaller predators like hawks are limited to eating rodents or insects.
- **Importance of Gape limitation in ecology:** Shaping Food Webs, Driving adaptations, Regulating predator-prey balance, Predicting ecosystem changes

##### 4.3.4.4. CENTRAL MARINE FISHERIES RESEARCH INSTITUTE (CMFRI)

- **Central Marine Fisheries Research Institute (CMFRI)** achieved captive breeding of high-value marine fish **golden trevally**.
  - It will help to promote **sustainable seafood production** and **boost India's mariculture activities**.
- **CMFRI monitors and assesses the marine fisheries resources** of the Exclusive Economic Zone (EEZ).
  - Lies under the **Ministry of Agriculture and Farmers Welfare**
  - Joined the **Indian Council of Agricultural Research (ICAR) in 1967**.
- **Golden trevally (or golden king fish)** is a **reef-associated fish** and lives in company of larger fishes like skates, groupers etc.
  - **Use:** For consumption and ornamental purposes.

#### 4.3.4.5. FOURTH GLOBAL MASS CORAL BLEACHING EVENT

- NOAA's Coral Reef Watch (CRW) and International Coral Reef Initiative (ICRI) confirm 4<sup>th</sup> global mass coral bleaching event.
- It is **second such event in the past 10 years** with earlier event lasting from 2014 to 2017.
- **Initiatives for coral reef:** ICRI, Global Fund for Coral Reefs, Global Coral Reef Monitoring Network (GCRMN), Coral Triangle Initiative (CTI), etc.
  - **Coral Triangle** is a marine area located in the **western Pacific Ocean**. It includes the waters of Indonesia, Malaysia, Philippines, Papua New Guinea, Timor Leste and Solomon Islands.
  - **World Coral Conservatory Project:** To protect a **global collection of the majority** of coral species and strains in the form of **living colonies** through a network of **partner public and private aquariums**.

To know more about Coral bleaching, kindly refer to Article 4.3.12. Other Related News in PT 365 Updated 1 (January-March) of VisionIAS.

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# Smart and Effective Notes Making for UPSC CSE Principles and Strategies



## Why Notes Making?

Note-making for the UPSC exam is a strategic tool that significantly enhances an aspirant's ability to understand, retain, and revise the vast curriculum effectively. This personalized study aid helps in breaking down complex topics into digestible pieces, facilitating easier recollection and efficient last-minute revisions.







## Principles of Notes Making

-  **Personalize Notes:** Understand your learning style for effective customization which should be prepared in an integrated manner for both Prelims and Mains examination.
-  **Format Choice:** Opt for digital, handwritten, or a hybrid approach based on learning ease.
-  **Summarization and Organization:** Condense passages, use bullet points for clear organization.
-  **Current Affairs Integration:** Enhance note relevance by integrating current affairs with static topics.
-  **Language Precision:** Emphasize keywords, concepts, and examples; avoid complete sentences.



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## Smart Strategies for Effective Notes Making

-  **Reliable Sources**  
Choose reputable sources that meet the demands of the examination.
-  **Summarize and Organize**  
Highlight or underline important points while reading, then summarize these in your own words.
-  **Link to the UPSC Syllabus**  
To ensure easy referencing of subject, topic, and subtopic for efficient exam preparation.
-  **Integrate Visual Aids**  
Use diagrams, flowcharts, and mind maps to visualize complex relationships between topics.
-  **Current Affairs**  
Create a dedicated section and link it to corresponding static topics for a comprehensive understanding.
-  **Regular Revision**  
Frequently revisit your notes to reinforce your memory and improve your retention.

 **Use bullet points, headings, and subheadings to structure your notes clearly.**

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-  **Enriched Presentation:** Utilizes thematic colors and tables for fast information identification and recall.



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## 4.4. SUSTAINABLE DEVELOPMENT

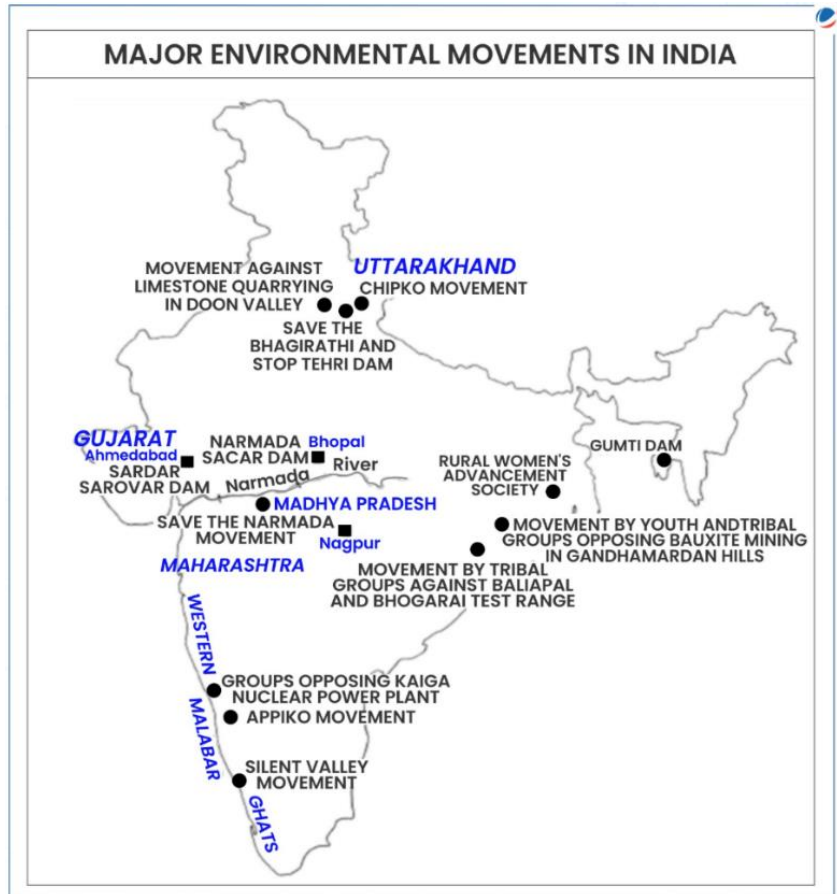
### 4.4.1. ENVIRONMENTAL MOVEMENTS IN INDIA

#### Why in the news?

2023 marked the 50th anniversary of the Chipko movement.

#### About Chipko movement

- Nonviolent resistance against forest cutting that began in the **Uttarakhand's Chamoli district**.
- **Meaning of 'chipko'**: It comes from the word 'embrace', as the villagers hugged the trees and encircled them to prevent being hacked.
- **Origin of the movement**: Dates back to the 18th century and was started by Rajasthan's **Bishnoi community**.
  - Led by **Amrita Devi** against the orders of then King of Jodhpur.
  - Resulted in passing of a royal decree that **banned cutting of trees in all Bishnoi villages**.
- **Major leaders**: Sunderlal Bahuguna, Chandi Prasad Bhatt, Gaura Devi, etc.
- **Renowned for its collective mobilization of women** in the effort to conserve forests, manifesting the philosophy of **Eco-feminism**.



#### Other Major environmental movements

- **Silent Valley Movement (1973)**: Against hydro-electric dam, to be built on the Kundapuzha River, in the Palakkad district of Kerala.
- **Appiko movement (1983)**: Led by Panduranga Hegde in Karnataka.
- **Narmada Bachao Andolan (1985)**: Led by environmental activist Medha Patkar against construction of large dam on Narmada.
- **Other important environmental movements**: Chilika Bachao Andolan, Against Bauxite Mining in Kashipur, Gandhamardan Environment Protection, etc.

### 4.4.2. CONSTITUTIONALIZATION OF ENVIRONMENTAL ISSUES

#### Why in the news?

The Supreme Court (SC), in a recent judgment, stated that the right to be free from the adverse effects of climate change should be recognised by **Articles 14 and 21** of the Constitution.

#### More about the news

- The judgment stated that the **inability of underserved communities to adapt to climate change** or cope with its effects violates the rights granted under Article 14 and 21.
  - e.g., **Food and water shortages** due to climate change and environmental degradation **affects poorer communities more**, affecting right to equality.

- **Articles 14 and 21 of the Constitution of India** guarantee the fundamental rights to equality and life respectively.
- The judgment was made under the writ Petition '**M.K. Ranjitsinh and Others v. Union of India and Others**' regarding the protection of Great Indian Bustard and its habitat.

#### Other details about the judgment

- Supreme Court modified its earlier order to place a blanket direction for undergrounding high-voltage and low-voltage power lines in the Great Indian Bustard habitat.
- SC was **hearing an application for modification** by the Union MoEFCC, Ministry of Power, and Ministry of New and Renewable Energy against earlier order.
- **Highlights of the Judgement**
  - **Removed blanket** direction for undergrounding high voltage and low voltage power lines in the entire region.
  - **Constituted an Expert Committee** to
    - ✓ Determine the **scope, feasibility, and extent of overhead and underground electric lines** in the area identified as priority areas.
    - ✓ **Review international best practices** for conservation of similar species.
    - ✓ **Facilitate conservation and protection measures** for GIB as well as other fauna.
- **Reasons for reversing earlier judgment:** Diverse factors are responsible for reduction in GIB population, Issues in laying underground cables.

To know more about the Great Indian Bustard (GIB) and the earlier judgment, kindly refer to Articles 3.2.13. Species in News in Environment PT 365 (April-Dec) and 4.3.12. Other Related News in PT 365 Updated 1 (January-March) of VisionIAS.

#### Other important SC judgements regarding environmental issues

- **Rural Litigation and Entitlement Kendra vs. State (1988):** Right to live in a healthy environment as part of Article 21.
- **M.C. Mehta vs. Union of India (1987):** Right to live in pollution free environment under Article 21.
- **Virender Gaur vs. State of Haryana (1995):** Protection and preservation of the environment, ecological balance free from pollution as part of Article 21.
- **T.N. Godavarman Thirumulpad vs Union Of India & Ors (1996):** Expanded 'forest' meaning.
- **Vellore Citizens Welfare Forum vs. Union of India (1996):** Observed that "the Precautionary Principle" and "the Polluter Pays Principle" are essential features of "Sustainable Development."
  - **Precautionary principle:** it allows decision makers to take precautions when scientific evidence of environmental or health hazard is inconclusive.
  - **Polluter pay principle:** It is a practice in which those who produce pollution bear the costs of managing it to prevent damage to human health or the environment.

#### Other Constitutional Provisions regarding Environment

- **Article 48A:** State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.
- **Clause (g) of Article 51A:** Makes it the duty of every citizen to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.

### 4.4.3. NATIONAL GREEN TRIBUNAL

#### Why in the news?

NGT directed Punjab government to disclose how it will achieve its target to cut stubble-burning incidents.

#### About National Green Tribunal (NGT)

- A **specialised judicial body** equipped with expertise **solely to adjudicate environmental cases in the country** (refer to the infographics).
  - Disposal of applications or appeals **within 6 months of filing** of the same.



- **Genesis:** Established as a statutory body under the NGT Act, 2010.
- **Composition**
  - **Headed by:** Chairperson
  - **Members:** 10-20 **judicial** as well as **expert** members (each)
- **Qualification**
  - **A person who is or has been Supreme Court Judge or High Court (HC) Chief Justice** can serve as both Chairperson and judicial member.
  - **A person who is or has been HC judge** can only serve as **judicial member**.
- **Guided by principles of natural justice** and not bound by the Code of Civil Procedure, 1908.
  - While passing any order/decision/ award, it shall apply the principles of **sustainable development, precautionary principle and polluter pays principle**.
- **Power:** Power of the **civil court**; Power to take **suo motu cognizance**; and Power to **grant relief** in the form of compensation and damages to affected persons.
- **Appeal:** Orders are **binding but not final** (it can review its judgements or an appeal could be made in SC within ninety days.).
- **Benches:** NGT has a **presence in five zones**- North (Principal Bench, headquartered in Delhi), Central, East, South and West.



## NGT adjudicates matters relating to 7 legislations



**Water (Prevention and Control of Pollution) Act, 1974**



**Water (Prevention and Control of Pollution) Cess Act, 1977**



**Forest (Conservation) Act, 1980**



**Air (Prevention and Control of Pollution) Act, 1981**



**Environment (Protection) Act, 1986**



**The Public Liability Insurance Act, 1991**



**Biological Diversity Act, 2002**



**Related news: Environment Protection Charge (EPC) and Environmental Compensation**

- A Central Pollution Control Board (CPCB) Report to NGT showed that 80% environmental funds remained unutilized.
- Only 20% of funds collected through **Environment Protection Charge (EPC)** and **Environmental Compensation** has utilized only.
- **CPCB receives compensation under two heads:**
  - **EPC:** The dealer/manufacturer is required to pay **1% EPC** for specified new diesel vehicles, registered only in Delhi and NCR.
    - ✓ It is received as per order of **Supreme Court**.
  - **Environmental compensation:** A **policy instrument** for protection of environment which **works on the Polluter Pay Principle**.
    - ✓ It is received as per **orders of NGT**.
    - ✓ It is utilized to **protect environment** through strengthening of laboratories/monitoring network, projects in compliance of NGT orders, capacity building of pollution control boards, etc.

**4.4.4. OTHER IMPORTANT NEWS****4.4.4.1. PAIRA CROPPING SYSTEM**

- This conservation agricultural practice in **Odisha** is dwindling in recent years.
- **Paيرا cropping system** is a relay method of sowing in which **short-duration pulses/oilseeds are broadcast** in standing crop of rice ~2 weeks before its harvest.
- It **does not allow interventions** such as tillage, weeding, irrigation, and fertilizer application.
- **Benefits:** maximize land use efficiency, boost farmers income, etc.
- **Areas of Practise:** Bihar, Eastern Uttar Pradesh, West Bengal, Chattisgarh and Odisha.

**4.4.4.2. WORLD ENERGY COUNCIL**

- The **26th World Energy Congress**, co-hosted by the **World Energy Council (WEC)**, concluded in Rotterdam (Netherlands).
- **About WEC**
  - **Genesis:** Formed in 1923, the WEC is an **UN-accredited** not-for-profit **global energy body**.
  - **Mission:** Enabling access to clean, affordable and reliable energy for better lives and a healthier planet.
  - **Role:** Develop practical **solutions and convene network** of global energy transition leaders and practitioners.
  - **Members:** More than 3000 member organizations (public, private and academic sectors) located in around 90 countries.

**4.4.4.3. WORLD'S FIRST EVER NUCLEAR ENERGY SUMMIT**

- Summit was jointly organized by the **International Atomic Energy Agency (IAEA)** and **Belgium** to promote nuclear energy held in Brussels.
  - It was organised in the wake of the historic inclusion of nuclear energy in the **Global Stocktake** agreed at the **UN Climate Change Conference (COP28)**, 2023.
  - Inclusion in **Global Stocktake** called for accelerating its deployment.
    - ✓ Currently, nuclear energy is responsible for around 25 % of global low carbon electricity production.
- Summit was attended by more than 30 nations (**including India**) and European Union.

**4.4.4.4. ANTARCTIC TREATY**

- India is set to host the **46th Antarctic Treaty Consultative Meeting**.
  - Meeting will be organised by the **National Centre for Polar and Ocean Research (NCPOR)**, Ministry of Earth Sciences (MoES).
- **About Antarctic Treaty:**
  - Signed in **1959** and entered into force in **1961**.

- **Total Parties** to the Treaty is **56**.
- India **signed the treaty** and received the consultative party status in 1983.
  - ✓ Enacted **Indian Antarctic Act, 2022**, reaffirming its commitment to the Antarctic Treaty.
- **Key provisions:** Antarctica shall be used for peaceful purposes, Freedom of scientific investigation, etc.
- **Key Protocol and Conventions:**
  - Protocol on Environment Protection (Madrid Protocol) to the Antarctic Treaty, 1991
  - Convention on the Conservation of Antarctic Marine Living Resources, 1980

#### 4.4.4.5. SOLAR PHOTOVOLTAIC POTENTIAL (SPV)

- India Meteorological Department (IMD) study finds Solar photovoltaic Potential (SPV) showed a **general decline in stations of IMD**.
  - SPV is the amount of radiation that may be **practically available to be converted to electricity** by panels measured as **kilowatt hours per installed kilowatt of capacity (KWh/kWp)**.
- As per the study, **Gujarat and Rajasthan**, where India's largest solar parks are located are **also showing a decrease in SPV potential**.
- **Cause: increase in aerosol load** due to fine particles from carbon emissions, fossil fuel burning and dust.
  - **Aerosols absorb sunlight** and deflect it away from the earth, and they can also form dense clouds that block sunlight.
- **Global solar radiation (GR)** is the total amount of solar radiation that is being received per unit area on the earth surface.

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### 4.4.5. REPORTS AND INDICES

Report	Details
<b>Annual Land Use and Land Cover (LULC) Atlas of India</b>	<ul style="list-style-type: none"> <li>Atlas, released by the <b>National Remote Sensing Centre (NRSC)</b>, aims to <b>systematically examine land utilization patterns</b> to offers invaluable insights into the evolving dynamics of our environment.</li> <li><b>Key highlights of the Atlas</b> <ul style="list-style-type: none"> <li>Over the past 17 years, <b>Kharif and Rabi cropland has expanded</b> by 46.06% and 35.23% respectively, as <b>fallow land diminished</b> by 45.19%.                             <ul style="list-style-type: none"> <li>✓ Since 2005, <b>shifting cultivation increased until 2016-17</b>, after which it witnessed a decline.</li> </ul> </li> <li>Indicated by minimum water body surface, <b>Water resources increased by 146 % since 2005.</b></li> <li><b>Built-up land increased</b> with an overall growth of 30.77% since 2005.                             <ul style="list-style-type: none"> <li>✓ <b>Wastelands (degraded and unproductive lands)</b> contributed significantly to built-up area expansion by 12.3%.</li> </ul> </li> </ul> </li> </ul>
<b>Food Waste Index (FWI) Report 2024</b>	<ul style="list-style-type: none"> <li><b>Launched by:</b> United Nations Environment Programme (UNEP), co-authored with <b>WRAP (Waste and Resources Action Programme)</b> was published ahead of <b>International Day of Zero Waste</b> (observed annually on 30 March).             <ul style="list-style-type: none"> <li>WRAP is a <b>climate action NGO (established in UK in 2000)</b> working to tackle causes of climate crisis and give the planet a sustainable future.</li> </ul> </li> <li>FWI tracks <b>global and national generation of food and inedible parts wasted at retail and consumer (household and food service) levels.</b></li> <li>It supports the <b>goals of two indicators of SDG 12.3</b> which is to be achieved by 2030 i.e.             <ul style="list-style-type: none"> <li><b>SDG 12.3.1 (a), Food Loss Index (FLI)</b>, reduce food losses along production and supply chains, including post-harvest losses. <b>Food and Agriculture Organization is custodian of FLI.</b></li> <li><b>SDG 12.3.1 (b), FWI</b>, halve per-capita global food waste at retail and consumer levels. <b>UNEP is custodian of FWI.</b></li> </ul> </li> </ul>

## 4.5. DISASTER MANAGEMENT

### 4.5.1. TORNADOES

#### Why in the news?

IMD warns of more tornadoes in northern Bengal.

#### About Tornadoes

- A **land-based vertical column** of violently rotating air that **extends from thunderstorm to ground.**
  - It can have wind speeds in **range of 105-322 Km/hr.**
- They **develop from severe thunderstorms** in warm, moist, unstable air **along and ahead of cold fronts.**
  - Thunderstorms are **severe local storms** associated with **thunder, lightning, heavy rain, hail, strong winds etc.**
- Tornadoes are most common in **United States, Argentina and Bangladesh.**
  - In India, these are reported in **eastern states of West Bengal, Odisha, and Jharkhand** during pre-monsoon period.
  - India is known for **formation of Tropical Cyclones.**

Parameters	Tropical Cyclones	Tornadoes
<b>Size and Scale</b>	Can span <b>hundreds of miles</b> and affect vast areas.	Size is only a <b>few hundred yards in diameter.</b>
<b>Wind Shear</b>	Require very <b>low values of tropospheric vertical shear.</b>	Require <b>substantial vertical shear</b> of horizontal winds.

<b>Temperature Gradient</b>	Generated in regions of <b>near-zero horizontal temperature gradient.</b>	Produced in regions of <b>large temperature gradient.</b>
<b>Area of Formation</b>	Purely an <b>oceanic phenomenon.</b>	Primarily <b>developed over land.</b>
<b>Time-Scale</b>	<b>Lifetime</b> that is measured in <b>days.</b>	Typically lasts on the <b>scale of minutes.</b>
<b>Impact</b>	Heavy rainfall, storm surges, and <b>widespread flooding.</b>	Cause <b>Localized destruction.</b>

### 4.5.2. EARLY WARNINGS FOR ALL (EW4ALL)

#### Why in the news?

India is helping **Nepal, Maldives, Sri Lanka, Bangladesh and Mauritius** develop Early Warning Systems (EWS).

#### More on the news

- India's efforts are **part of 'Early Warnings for All (EW4All)' initiative** announced by **UN in 2022.**
  - EWS:** An **integrated system of hazard monitoring, forecasting** etc. and processes enabling individuals, governments to take timely action reducing disaster risks.
- About EW4All**
  - Aims to protect **everyone from hazardous weather, water or climate events** through EWS by **end of 2027.**
  - Spearheaded by **World Meteorological Organization** and **United Nations Office for Disaster Risk Reduction.**

## 4.6. GEOGRAPHY

### 4.6.1. BASEFLOW

#### Why in the news?

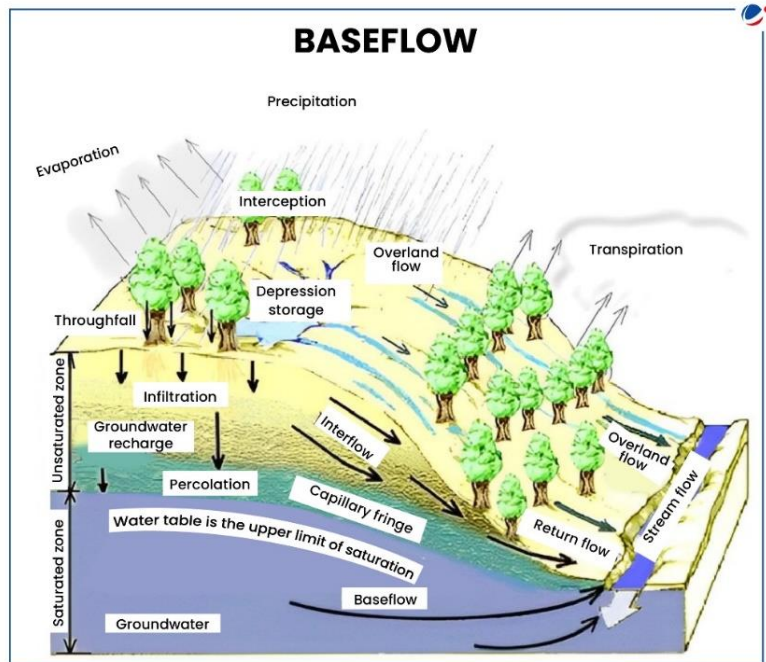
A recent study has highlighted that Baseflow has contributed significantly to the flooding of rivers in peninsular India.

#### More about the news

- The study **examined six major river basins** of peninsular India namely **Narmada, Tapi, Mahanadi, Godavari, Krishna and Cauvery.**
- The study revealed that **catchments with higher baseflow lead to an increased likelihood of rapid runoff** with incoming rainfall events in shorter time lags.

#### What is Baseflow?

- Refers to the **portion of stream flow that originates from groundwater discharge** seeping into the stream or river over an extended period.
- Groundwater **discharges into the water bodies when the water table intersects the surface of the ground** along rivers or wetlands, contributing to their flow.
- Factors influencing Baseflow:** Topography of the land, Nature of the Soil, Land use pattern, Climate Change.
- Environmental significance of Baseflow:** Maintains the river flow and ecosystem; Reduces silt accumulation; Maintains the water quality etc.
- Potential effects of change in Baseflow:** Increases Flood Risk, Affects the riverine ecosystem, Affects the water temperature.



## 4.6.2. TIMEKEEPING

### Why in the news?

According to a study, climate change has slowed Earth's rotation and could affect timekeeping.

### Findings of the study

- Earth's rotation is **speeding up** in recent years due to changes in its core, however, melting of polar ice mass due to climate change have **decelerated such speeding up**.
- To keep clocks in sync with the Earth's rotation, speeding up of Earth's rotation would have **necessitated addition of a negative leap second** in two years' time.
- However, climate change has **delayed such addition by another three years**, to 2029.

### About Leap Second

- Historically, Coordinated Universal Time (UTC) is followed as time standard, in which a day lasts 86,400 seconds (24 hours \* 60 minutes \* 60 seconds).
- However, **average length of a day depends on Earth's rotation speed**.
- In case of **fluctuations in Earth's rotation speed, leap seconds are added/subtracted** to UTC.
- A negative leap second is **subtracted in case of slowing of Earth's rotation** while a positive leap second is added to compensate for speeding of Earth's rotation.
- So far, there have been **27 positive leap seconds, but no negative leap seconds**.

### About Rotation of Earth

- Earth **rotates on its axis** relative to the Sun **every 24 hours mean solar time**, with an **inclination of 23.45 degrees** from the plane of its orbit around the Sun.
- **Earth's rotation is affected by three major geophysical processes -**
  - **Tidal dissipation:** Friction between ocean water and the sea floor — both in shallow seas and in deep-ocean — has progressively slowed Earth's rotation.
  - **Earth's core:** Changes in the flow of currents in the molten outer core affecting its spin.
  - **Glacial melt:** As polar glaciers melt, the **water mass gets redistributed** throughout the oceans, pooling most noticeably around the equator.
    - ✓ It **changes the shape of Earth**, making it flatter and **slows down its rotation speed**.

## 4.6.3. GEOPARKS

### Why in the news?

UNESCO endorsed the addition of 18 new Geoparks to **the Global Geoparks Network (GGN)**.

### More about the news

- Latest addition raises the number of total Geoparks to 213 which are **spread across 48 countries (no geopark in India)**.
- **Some major geoparks added to GGN are:**
  - **Land of Extinct Volcanoes (Poland):** Features distinctive remnants of Paleozoic and Cenozoic volcanoes
  - **Impact Crater Lake (Finland):** Europe's largest impact crater lake formed through a collision with a meteorite 78 million years ago.
  - **Uberaba (Brazil):** Its tag line 'Land of the Giants' refers to its rich palaeontological heritage.

### About UNESCO's Global Geopark (UGGPS)

- **About:** Internationally geologically significant landscapes are managed with a holistic concept of protection, education and sustainable development.
- **Genesis:** Geopark concept arose in mid-1990's and was created in 2015.
- **Management:** By a body having a legal existence recognized under national legislation.
- **Designation is not permanent:** Designation is for four years after which it is reassessed.



- **Mandatory Networking:** Membership of the Global Geoparks Network (GGN) is obligatory for UGGPs.
- **Significance:** Giving local people sense of pride and strengthen their identification, Geotourism.

#### Global Geoparks Network (GGN)

- It is a **non-profit International Association** officially established in 2014.
  - GGN was founded as an **international partnership developed under** the umbrella of **UNESCO**.
- **Networking and collaboration among Global Geoparks** is an important component of the GGN.

### 4.6.4. OTHER IMPORTANT NEWS

#### 4.6.4.1. ROGUE WAVES

- A University of Melbourne expedition to Antarctica has discovered that **wind drives the formation of colossal rogue waves**.
- Rogues, also called '**extreme storm waves**', are those waves which are **greater than twice the size of surrounding waves**.
- Can **form in large bodies of freshwater** as well as the **ocean** and are often **steep-sided with unusually deep troughs**.
- Rogue waves are **unusually large, unpredictable, dangerous and can cause damage to ships or coastal infrastructure**.

#### 4.6.4.2. SWELL WAVES

- The Swell Waves **inundated coastal areas of Kerala**.
- **Swell waves** are a series of **mechanical or surface gravity waves generated by distant weather systems** that propagate thousands of miles across oceans and seas.
- They can propagate in directions that **differ from the direction of the wind**.
- It takes place without any **noticeable advance change in local winds or coastal environment**.
- They are locally known as **Kallakadal**.

#### 4.6.4.3. VOLCANIC VORTEX RINGS (VVR)

- Volcanic Vortex Rings (VVR) observed from the Mount Etna.
- VVR, also known as volcanic smoke rings, are generated when gas, predominantly **water vapor**, is released rapidly through a circular vent in the volcanic crater.

#### 4.6.4.4. RINGWOODITE

- Researchers have uncovered a vast reservoir of water, dubbed the "Ringwoodite Ocean," concealed within the Earth's mantle, over 700 kms beneath the surface.
  - "Ringwoodite Ocean" is a **vast reservoir of water trapped within the mineral ringwoodite** in the Earth's mantle.
- **Ringwoodite** is a **vivid blue mineral** formed under high temperatures and pressures in **Earth's mantle**.
  - It is one of the **most typical high-pressure mineral in meteorites**.
  - Named after Australian earth scientist **Alfred E. Ringwood** who studied polymorphic phase transitions in common mantle minerals, olivine and pyroxene.

#### 4.6.4.5. ZERO SHADOW DAY

- Recently, Bengaluru experienced a **rare celestial phenomenon known as 'Zero Shadow Day'**.
- **Zero Shadow Day** occurs **when the sun aligns perfectly overhead**, causing vertical objects to cast no shadows.
- This phenomenon **occurs twice a year (once during Summer Solstice and once during Winter Solstice)** in **regions** situated between the Tropic of Cancer and the Tropic of Capricorn.
- The zero shadow days are **different for different places**.

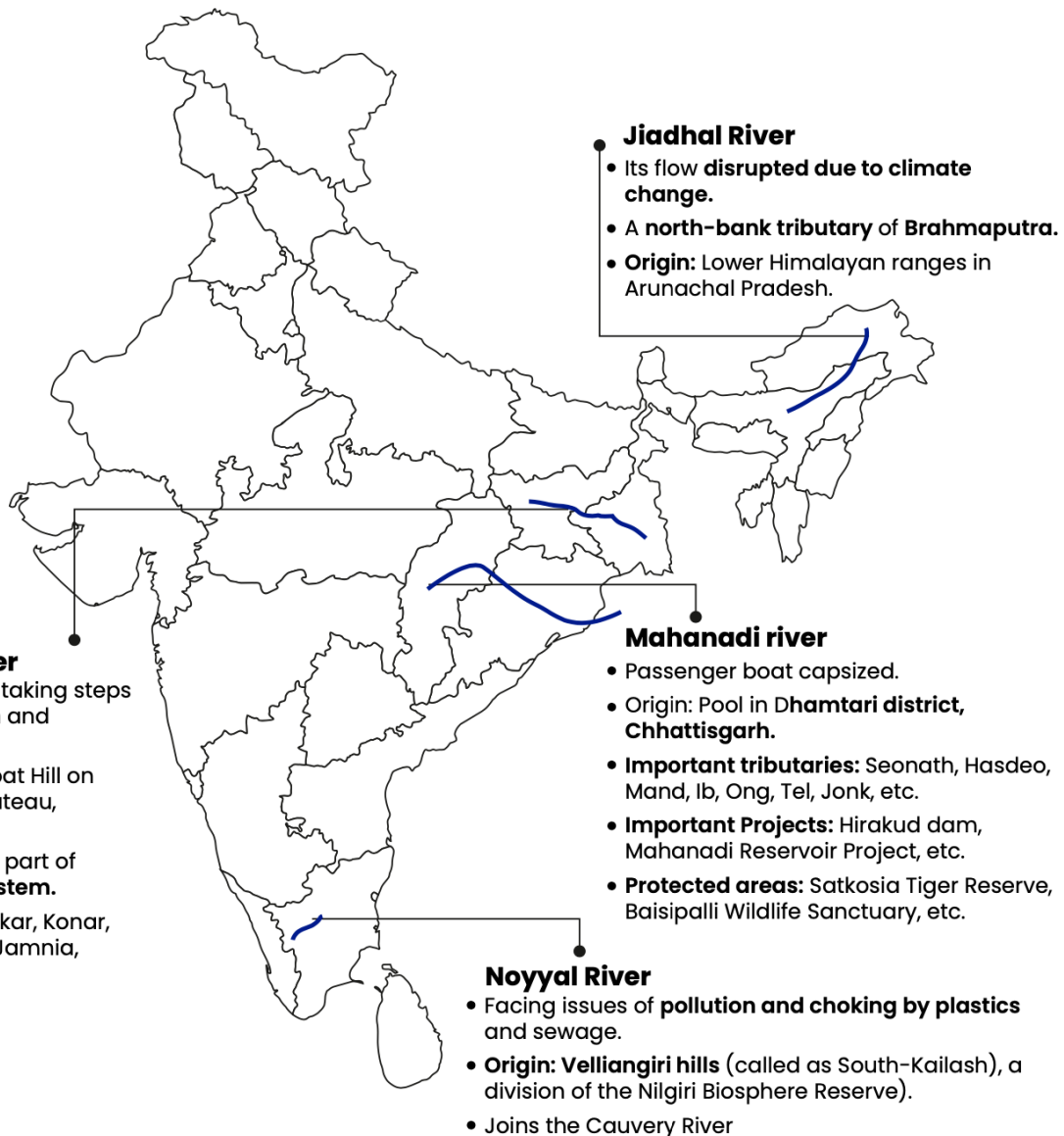
#### 4.6.4.6. PERMAFROST REGION

- As per a recent study the northern permafrost region has been projected to shift from a net sink to a net source of carbon under global warming.
- Permafrost is a **permanently frozen layer on or under Earth's surface**. It consists of soil, gravel, and sand, usually bound together by ice.
- Permafrost usually remains at **or below 0°C (32°F) for at least two years**.
- As Earth's climate warms, the permafrost is thawing. That means the ice inside the permafrost melts, leaving behind water and soil.
- **Impact of thawing permafrost:** Net source of carbon, Disease Outbreak, Infrastructure stability.

#### 4.6.5. PLACES IN NEWS

##### 4.6.5.1. RIVERS IN NEWS (INDIA)

### Rivers in News (India)



4.6.5.2. PLACES IN NEWS: INTERNATIONAL

### Places in News (International)

**Batagay Crater**

- Growing every year as the frozen ground melts.
- Known as “Gateway to Underworld” or “Doorway to Hell”
- World's biggest permafrost crater.
- From 1991 to 2018, the crater area increased by almost three times.

**Lake Kariba**

- Water levels dropped to 13% of capacity due to El Nino induced drought.
- Lies between Zambia and Zimbabwe.
- Formed by damming Zambezi River in 1955.

**Ross Ice Shelf**

- Antarctica's Ross Ice Shelf makes sudden jumps twice a day.
- Sudden jump occurs when two sections of ice press against each other (rubbing creates tension).
- Jumps might cause "icequakes".

**Taiwan**

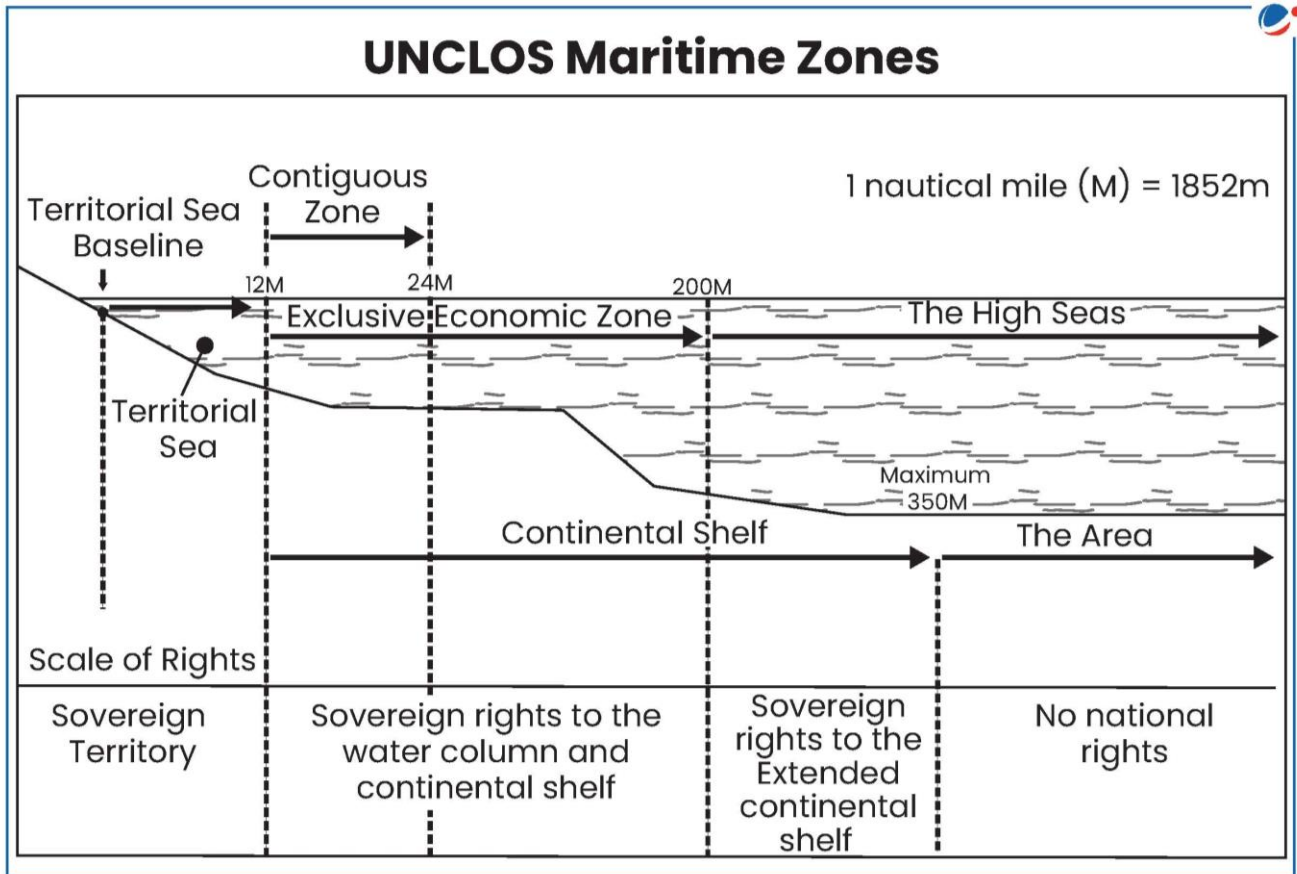
- Earthquake of magnitude 7.4, biggest in 25 years
- Quake result of reverse faulting near boundary between Eurasia and Philippine Sea plates.
- Taiwan lies along the Pacific “Ring of Fire” or Circum-Pacific Belt.

## 4.7. ERRATA

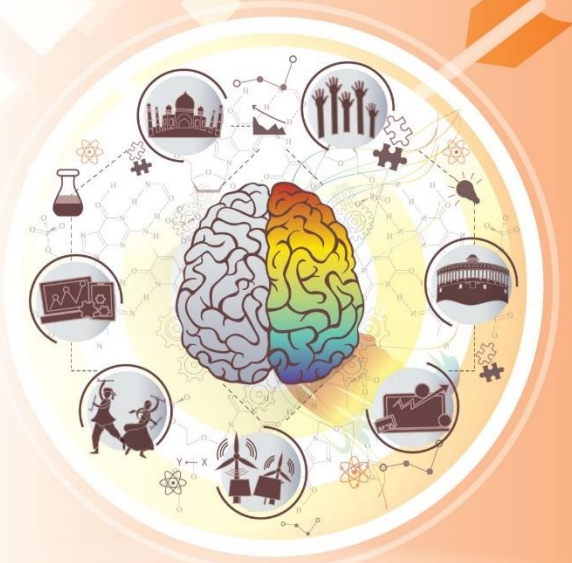
### Environment PT 365 (April-Dec)

- **Article 3.4.1. First International Treaty to Protect the High Seas:** In the infographic titled ‘Maritime Zones’ on page 82, the extent of the territorial sea, the contiguous zone and the exclusive economic zone (EEZ) have been marked incorrectly due to a design error. The correct infographic is:





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# THE PLANET VISION

In a world facing unprecedented environmental challenges, staying informed and empowered is more crucial than ever. VisionIAS brings you 'The Planet Vision', a simplified, informative, and interactive magazine to delve into the complexities of the environment.

With the belief, that individual efforts and awareness are the key to a sustainable future, the magazine seeks to inspire and educate people to develop a deeper understanding and appreciation for the environment, nature & planet.



## Objectives of 'The Planet Vision'



**Sensitise the young generation:** Highlighting pressing environmental issues and their multifaceted impacts.



**Inspire Action and Promote Sustainable Lifestyle:** Inspiring stories and case studies to motivate readers to make environmentally conscious choices.



**Bridge Environmental Science and Public Understanding:** Presenting complex scientific concepts in a simple and interactive manner.



**Showcase Solutions:** Spotlight innovative technologies, projects, and initiatives that offer solutions to environmental challenges.



**Highlight Local Efforts:** Showcase local conservation efforts, community initiatives, and grassroots projects that make a positive impact on the environment.

## Who is the magazine for?

The Magazine is designed for students, eco-conscious individuals, educators, environmentalists, and anyone who cares about the health of our planet.

## Key elements of the 'The Planet Vision'



**Cover Stories:** Thought-provoking articles about a critical ongoing environmental issue, along with the mitigation strategies adopted at the national and international levels.



**Briefing and Developments:** Stay informed about the latest environmental news, trends, and solutions.



**Protect and Preserve:** Inspirational stories of local conservation efforts.



**Environment and You:** Illustrating ways to make environmentally conscious choices in everyday life.



**Green Tech:** New and emerging technologies in the field of environment.



**Interactive elements:**

✓ **Snapshot:** Telling a story through capturing images.

✓ **Quizzes and crosswords:** To test your understanding and knowledge as a reader.

“

Look deep into nature, and then you will understand everything better. ”

—Albert Einstein



Scan the QR code, to download and read the Magazine:

## 5. SOCIAL ISSUES

### 5.1. EARLY CHILDHOOD CARE AND EDUCATION (ECCE)






#### Why in the News?

Ministry of Women and Child Development (MoWCD) launched Aadharshila a National Curriculum for Early Childhood Care and Education (ECCE), 2024 for Children from three to six Years.

#### About Early Childhood Care and Education (ECCE)

- ECCE is defined as care and education of children from birth to eight years. It includes:
  - Early stimulation programmes through **crèches/homes stimulation for 0–3-year-olds**.
  - **Early Childhood Education (ECE) programmes for 3-6 year olds** (as seen in anganwadis, nurseries, preschools, kindergartens, preparatory schools, etc.).
  - Early Primary Education Programmes as part of **schooling for 6–8-year-olds**.
- Government of India adopted **National ECCE Policy in 2013**.
- **National Education Policy (NEP) 2020** and **National Curriculum Framework for Foundational Stage (NCF-FS) 2022** have recognized the critical role of ECCE in country.
  - NCF-FS institutionalized guidelines specifically tailored for fostering **high-quality ECCE for 3-6 years and age group of 0-3 years**.
  - The NCF-(FS) 2020 recognizes the multifaceted nature of child development by integrating the **Panchakosha concept**.
- **Aadharshila, the National Curriculum for ECCE 2024** address this need.
  - Its objective is to improve quality of early childhood education **transacted at Anganwadi Centre, by prioritising competency-based lesson plans and activities**, covering all learning domains.

#### Integrating Panchkosha Concept & Holistic Development of Child

 Annamay kosha	 Pranamaya kosha	 Manomaya Kosha	 Vignanamaya kosha	 Anandamaya kosha
Physical Layer	Life Force energy Layer	Mind Layer	Intellectual layer	Inner self Layer
Age-specific balanced physical development, fitness, Flexibility, cultivation of habits for a healthy lifestyle	Balancing, retaining, fostering positive energy, enthusiasm and activation of the nervous system	Socio emotional and ethical development, emotional intelligence, handling emotions, connection with environment	Cognitive Development, Intellectual development, promoting analytical ability, logical reasoning, Cognitive skills	Aesthetic and cultural Development

#### Initiatives for ECCE in India

- **Integrated Child Development Services, 1975** aimed at addressing malnutrition, health and also development needs of young children, pregnant and nursing mothers.
- **Saksham Anganwadi and Poshan 2.0:** They are Integrated Nutrition Support Programme that seeks to address the challenges of malnutrition in children, adolescent girls, pregnant women and lactating mothers.

- **Palna** (PROVISION OF ANGANWADI CUM CRECHES) and **Pradhan Mantri Matru Vandana Yojana** (PMMVY) Schemes under Mission Shakti.
- **Poshan Bhi Padhai Bhi launched in 2023.**
- **Right of Children to Free and Compulsory Education (RTE) Act, 2009** provides that appropriate government may make necessary arrangements for pre-school education.
- **Other policies:** National Policy for Children (1974), National Policy for Education, (1986), National Plan of Action for Children (2005).

**Global initiatives**

- UNESCO established **Global Partnership Strategy (GPS) for Early Childhood.**
  - Overall goal of GPS is to ensure that ECCE, Early childhood development, and Early childhood investment services are fully inclusive, accessible, affordable, gender-responsive and equitable for each child.
- **Convention on the Rights of Child (CRC) 1989 and Education for All (EFA) 1990** has postulated ECCE as the very first goal to be achieved for **Education For All, since “learning begins at birth”.**
  - India is also a signatory to both.
- **SDG4 - Education 2030** agenda marked the first global commitment to ECCE beyond education community.

**5.1.1. NATIONAL FRAMEWORK FOR EARLY CHILDHOOD STIMULATION**

**Why in the news?**

Recently, MoWCD has released Navchetana, a National Framework for Early Childhood Stimulation (ECS) from **Birth to Three Years.**

**About Early Childhood Stimulation (ECS)**

- ECS begins from **biological and sensory growth of the child** right from their gestation in mother’s womb.
- Framework for Stimulation (0-3 years) aims to **fill the gaps in implementing care and stimulation from birth** until the first three years of a child’s growth.
- Framework guides **engagement inside home** and at Anganwadi centres or crèches.
- In order to facilitate inclusion of children with disabilities, an **age-appropriate screening tool** has been included.
- **Need of ECS**
  - At this age baby’s brain is twice as active as an adult’s brain and **patterns of thinking and responding are established.**
  - At birth, only 25% of the eventual brain is formed, while **75% develops in the first 3 years of a child’s life.**
- Document emphasizes on **two of the five components of nurturing care framework: ‘responsive caregiving’ and ‘creating opportunities for early learning’.**
  - **Nurturing care framework** for Early Childhood Development was **provided by WHO.**
  - **Other three components** are Security and safety, good health and Adequate Nutrition

### Objectives of ECS

- Ensure the healthy development** of the child through breastfeeding, immunisation, etc
- Develop trust and emotional security** in the child by making them feel loved, valued, safe, etc.
- Stimulate the child’s intellectual curiosity.**
- Enhance the child’s language** development by talking, reading, and singing to them
- Develop adequate muscular** coordination, basic motor skills, and personal hygiene habits

**5.2. CHILD CARE LEAVE**

**Why in the news?**

Recently, a 2-judge bench of the SC directed the government of Himachal Pradesh to review its policies on CCL concerning working mothers, especially mothers of children with special needs.

### Key highlights of the SC Directive

- Court observed that **where the state is the employer** of a working mother, it **cannot be ignorant of her responsibilities at home** while serving the state.
- **Participation of women in workforce** is a constitutional entitlement **protected by Article 15** of the Constitution.
  - **Article 15** provides that State shall not discriminate on grounds only of religion, race, caste, sex, place of birth, or any of them.
- **Maternity benefits** given for delivering the child were **not sufficient and are perhaps distinct from the concept of CCL**.
  - **Maternity Benefit (Amendment) Act, 2017** provides for 26 weeks of paid maternity leave to women workers.
    - ✓ Out of these 26 weeks, not more than 8 weeks shall be preceding the expected date of delivery

### About Child Care Leave (CCL)

- **Rule 43-C of the Central Civil Services (Leave) Rules, 1972** provides for 2 years (730 days) of CCL to female employees for taking care of two eldest surviving children upto the age of 18 years.
  - This leave can be used **for any child-related needs like exams or illness**.
  - **State of Himachal Pradesh has not adopted** these provisions of CCL.
- **Rule 43-C** also provides CCLs to **single male parents (unmarried or widower or divorcee)**.
- There's **no age limit in case of disabled child**.

## 5.3. DOPING IN SPORTS

### Why in the news?

India recorded **highest percentage of doping offenders (3.26%)**, according to the 2022 testing figures released by the World Anti-Doping Agency (WADA).

### More about the news

- India is followed by **South Africa and Bangkok** in percentage of doping offenders.
- In 2022, nearly all drug classes saw an increase in the number of individual Prohibited Substances compared to 2021.

## wada World Anti-Doping Agency (WADA)



**Genesis:** Established in 1999, after the **International Olympic Committee (IOC)** convened the **First World Conference on Doping** in Sport, in Lausanne, Switzerland.

- It resulted in the **Lausanne Declaration on Doping in Sport** which provided for the creation of an independent international anti-doping agency to be operational for the **XXVII Olympiad in 2000**.



**About:** An independent international agency composed and funded equally by the Olympic Movement and Governments of the world.

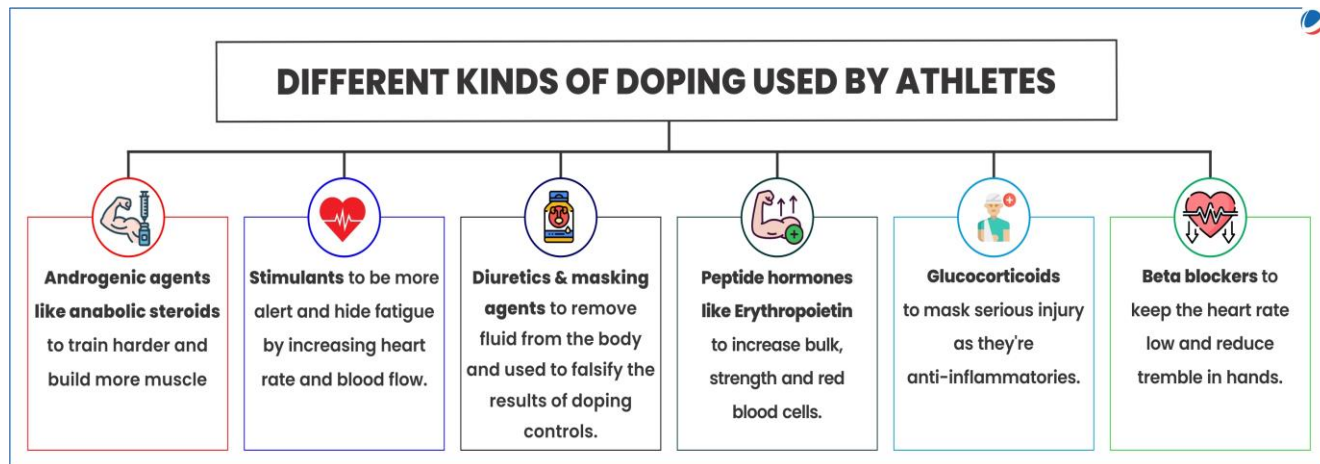


**Function:** To lead a collaborative worldwide movement for doping free sport.

- The **Anti-Doping Administration & Management System (ADAMS)** of WADA coordinates and simplifies anti-doping activities.

## About Doping

- It is the **act of consuming banned artificial and often illegal substances** to gain an advantage over others in sporting competitions.
- Doping may also include other methods like **increasing oxygen in the bloodstream** through blood transfusions.



## Efforts to stop doping in India

- **National Anti-Doping Act, 2022:** To strengthen the framework and mechanisms for carrying out doping control program. It provided for **constitution of National Anti-Doping agency** as a statutory body.
- **National Anti-Doping Agency (NADA):** An autonomous body under Ministry of Youth Affairs & Sports to implement anti-doping programme in India, in line with the World Anti-doping Code 2021.
  - It was set up as a registered society under **Societies Registration Act of 1860** in 2005.
- **Key Initiatives of NADA:**
  - **Program for Education and Awareness on Anti-Doping in Sports (PEADS)** for education and awareness regarding doping.
  - **Memorandum of Understanding (MoU) signed with South Asia Regional Anti-Doping Organization (SARADO)** to increase the Regional Cooperation in anti-doping in sport.
  - **Anti-Doping helpline number** for athletes and athlete support personnel to provide information about Anti-Doping rules and guidelines.
- **Narcotic Drugs and Psychotropic Substances Act, 1985:** It prohibits any individual from engaging in any activity consisting of production, cultivation, sale, purchase, transport, consumption of any narcotic drug or psychotropic substance.
- India has **signed and ratified United Nations Educational, Scientific and Cultural Organization International Convention** against Doping.

## 5.4. OTHER IMPORTANT NEWS

### 5.4.1. FOOD WASTE INDEX REPORT 2024

- **Recently, United Nations Environment Programme (UNEP) Launched** Food Waste Index (FWI) Report 2024.
- Report co-authored with **WRAP (Waste and Resources Action Programme)** was published ahead of **International Day of Zero Waste** (observed annually on 30 March).
  - **WRAP is a climate action NGO** (established in UK in 2000) working to tackle causes of climate crisis and give the planet a sustainable future.
- FWI tracks **global and national generation of food and inedible parts wasted at retail and consumer (household and food service) levels.**
  - It supports the **goals of two indicators of SDG 12.3** which is to be achieved by 2030 i.e.

- ✓ **SDG 12.3.1 (a), Food Loss Index (FLI)**, reduce food losses along production and supply chains, including post-harvest losses. **Food and Agriculture Organization is custodian** of FLI.
- ✓ **SDG 12.3.1 (b), FWI**, halve per-capita global food waste at retail and consumer levels. **UNEP is custodian** of FWI.

### 5.4.2. GLOBAL NETWORK AGAINST FOOD CRISES (GNAFC)

- GNAFC launched the **Global Report on Food Crises (GRFC)** which is produced **annually** by the **Food Security Information Network (FSIN)**.
- **About GNAFC**
  - It was launched in **2016**.
  - By **the European Union**, the **UN's Food and Agriculture Organization (FAO)** and the **World Food Programme (WFP)**.
  - It seeks to better **link, integrate and guide** existing initiatives, partnerships, programmes and **policy processes** to address the root causes of food crises.
  - It brings together **governments, international organisations, and NGOs** to improve humanitarian responses and reduce the number of people facing acute food insecurity.

The banner features the text 'CSAT क्लासेस 2025' in large, stylized fonts. Below this, it specifies 'ENGLISH MEDIUM 7 JUNE, 5 PM' and 'हिन्दी माध्यम 13 जून, 5 PM'. A central illustration shows a student at a desk surrounded by various educational icons. At the top right, there are buttons for 'ऑफलाइन' and 'ऑनलाइन'. A QR code is located at the bottom right with the text 'Scan QR code for instant personalized mentoring'.

# Current Affairs **Quarterly** REVISION

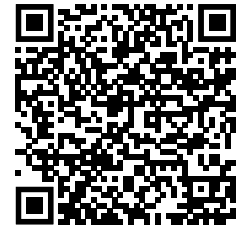


The aspirants preparing for the Civil Services Examination often have **diverse backgrounds, age groups, work and familial engagements**. In the hustle and bustle of life, staying updated on current affairs is crucial for preparation of Civil Services.

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## 6. SCIENCE & TECHNOLOGY

### 6.1. BIOTECHNOLOGY

#### 6.1.1. TISSUE CULTURE

##### Why in the News?

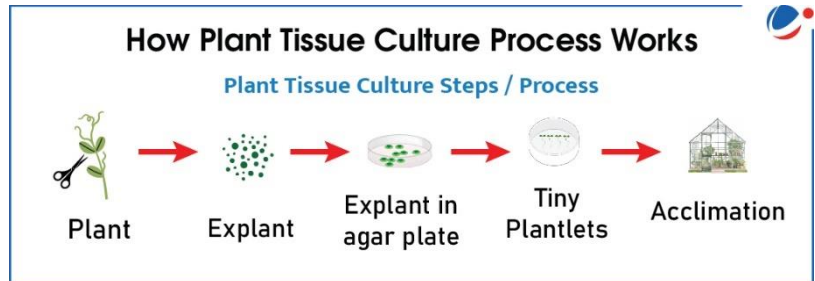
Tissue culture lab will generate saplings of threatened or rare native Delhi trees.

##### More about News

- Tissue culture lab will be set up at the **Asola Bhatti Wildlife Sanctuary, Delhi NCR region**.
- **Species identified are** Hingot, Khair, Bistendu, Siri, Palash etc.

##### About Plant Tissue Culture (PTC)

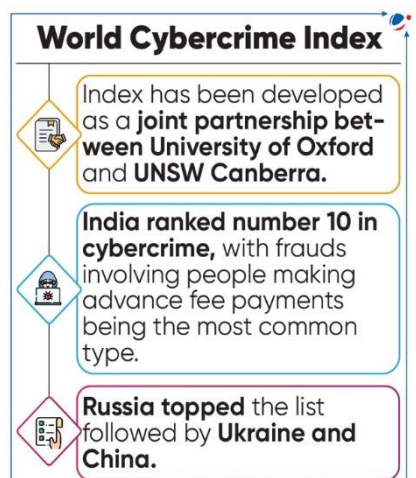
- Refers to the cultivation of **undifferentiated plant cells, tissues or organs on synthetic media** under an aseptic environment and suitable controlled physical conditions.
- Based upon the **totipotency characteristic of a plant cell**.
  - Totipotency is the ability of a vegetative cell to **divide and differentiate into any type of specialized cell**.
- **Types of PTC**
  - **Organ Culture:** Any part of the plant (root, stem, leaf, and flower) is used as an explant for culturing purposes.
  - **Seed culture:** The explants are obtained from the plants that are already cultured and grown under in vitro conditions.
  - **Embryo culture:** The embryo is isolated and cultured under in vitro conditions.
- **Benefits of PTC**
  - **Propagating and genetically improving commercially valuable plants.**
  - **Study characteristics of the growth, metabolism, reproduction, physiology and nutritional necessities of the plants under controlled circumstances.**
  - **Production of plantlets in a very short time with a lesser amount of plant tissue.**
  - **Large-scale fabrication of artificial seeds.**
- **Challenges with PTC:** Inadequate Infrastructure, lack of skilled manpower, lack of scientific knowledge about biotechnological principles, etc.



### 6.2. IT, COMPUTER AND CYBERSECURITY

#### 6.2.1. CYBER RISK: CONCERN FOR MACRO-FINANCIAL STABILITY

- Rising Cyber Threats Pose Serious Concerns for Macro-Financial Stability, warns International Monetary Fund (IMF).
- According to **IMF's Global Financial Stability Report 2024**,
  - **Risk of extreme losses** from cyber incidents has increased to **\$2.5 billion**.
  - **Number of cyberattacks** has almost **doubled since COVID-19 pandemic**.
  - Attacks on financial firms account for nearly one-fifth of total, of which banks are most exposed.





### 6.2.2. GLOBAL POSITIONING SYSTEM (GPS) SPOOFING

- As per reports, Israel used GPS spoofing against Iran.
  - **GPS** is a satellite constellation supporting highly accurate positioning, navigation and timing (PNT) measurements worldwide. It is owned by the United States.
- **About GPS Spoofing**
  - Also, known as **GPS simulation**.
  - Refers to the practice of **manipulating** or **tricking a GPS receiver** by broadcasting **false GPS signals**.
  - This form of **cyber-attack** undermines the reliability of GPS data, which is **vital for a variety** of applications.
  - Spoofing is different from GPS jamming.
  - In the latter, the GPS signals are jammed or blocked.

### 6.2.3. DOXXING

- Incidents of Doxxing are increasing over internet.
- **About Doxxing**
  - The term "doxxing" is derived from phrase "**dropping dox (documents)**".
  - It refers to **collection of a user's private information**, across multiple platforms (including social media) by an unauthorized individual and
    - ✓ then **publishing the information** in an attempt to shame or embarrass user.
  - Conducted by researching **public databases, hacking, or through social engineering**.
  - **Prevention:** Adjust social media settings, use strong passwords, report through National Cyber Crime Reporting Portal, etc.

### 6.2.4. MERCENARY SPYWARE

- Apple has issued warnings to users in India and other countries of potential "**mercenary spyware**" attacks.
- **About Mercenary Spywares:**
  - Mercenary spywares are designed to **remotely infiltrate and compromise smartphones** and other devices **without the knowledge or consent** of the users.
  - These targets **specific individuals** and can be used to monitor movements, communications and steal private data.
  - Some of mercenary spywares include **Pegasus, FinSpy and Galileo**.
- **Spyware:** It is **malicious software or malware** that is installed on a computing device without end user's knowledge and **monitors or steals sensitive information**.

### 6.2.5. SHALLOWFAKE

- A **shallowfake video** of the **US Vice President** has gone viral.
- Shallowfake refers to **altered media** (pictures, videos and voice clips, etc) **created** with conventional and affordable technologies **without the help of AI technology**.
  - Contrary to this, **Deepfakes** are synthesized **images, videos, and other media created by the Artificial Intelligence (AI)**.
  - **Shallowfake** is also called as **cheapfake**.

### 6.2.6. CYBER SLAVERY

- Over 3 months, the **Indian Embassy rescued 75 Indians** trapped in cyber-slavery in Cambodia.
- **About Cyber-slavery**
  - It is a **modern form of human trafficking** that exploits people in the digital world.
  - Victims are lured with employment opportunities and forced to **work as online scammers**.
  - It is emerging as a form of **organized crime of unprecedented severity and scale**.

### 6.2.7. WHITE RABBIT (WR) TECHNOLOGY

- CERN has launched the **White Rabbit Collaboration (WRC)** to foster the **uptake of White Rabbit technology by Industry**.
  - The Collaboration aims to provide **dedicated support and training, facilitate R&D projects** in the technology.
- **WR technology**
  - Developed at CERN to provide **sub-nanosecond accuracy and picosecond precision of synchronisation** for the **Large Hadron Collider (LHC)** accelerator chain.
    - ✓ LHC is the world's **largest and most powerful particle accelerator**.
    - ✓ LHC was **first used in 2012** and in 2020, it was included in the worldwide industry standard known as **Precision Time Protocol (PTP)**.

## 6.3. SPACE TECHNOLOGY

### 6.3.1. SPACE WEATHER

#### Why in the News?

As per the recent study, Space weather is behind unprecedented loss of 38 Starlink satellites.

#### More about News

- The Study was conducted by **IISER Kolkata**. It found following factors for loss of satellites.
  - **Space weather** conditions,
  - Satellites in **high-density low Earth orbit**,
  - **Enhanced drag** due to orientation changes of satellites.

#### About Space Weather

- Space weather is **environment around Earth, other planets, and celestial objects** in our galaxy which is largely **controlled by Sun's activities**.
- It is influenced by **solar flares, coronal mass ejections (CMEs), and other particles** and emissions emanating from Sun.
  - Solar flares are **sudden and intense explosions of energy** on surface of Sun, often associated with sunspots. These are **caused by release of magnetic energy** stored in Sun's atmosphere.
  - **CMEs are large expulsions of plasma and magnetic field** from Sun's corona.
- **Impact of Space Weather on Earth:**
  - **Radio blackout storm:** Electromagnetic energy released in flares disrupts **radio signals in earth's upper atmosphere** impacting Navigation system.
  - **Geomagnetic storms** (major disturbances in earth's magnetic field) affect **power grids, pipelines, and railways, and cause auroras**.
  - **Solar radiation storm:** Fast-moving **charged particles from sun** can permeate magnetosphere and endanger **astronauts and spacecraft/satellites/aircraft**.

#### About Starlink

- A **constellation of satellites in LEO** (Created by **SpaceX**, American space start-up) providing global internet coverage, particularly for remote regions.
- Plans to have as many as **42,000 satellites** at altitude of about 550 km.
- Offers **reduced latency and increased bandwidth** due to satellite's proximity to Earth.

### 6.3.2. SATELLITE COMMUNICATION TECHNOLOGY (SCT)

#### Why in the News?

Tiantong-1 will allow Smartphones to Make Direct Satellite Calls.

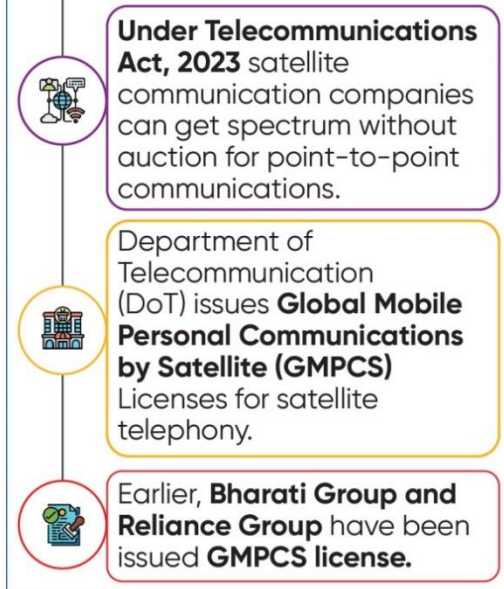
### More about News

- Chinese scientists have developed world's first satellite series (Tiantong-1).
- It is capable of enabling smartphone calls without the need for ground-based infrastructure such as Base Transceiver Station (BTSS) or cellular towers.

### About Chinese Satellite Communication Technology (SCT)

- Tiantong-1 series of satellites consist of three satellites placed in geosynchronous orbit at an altitude of ~36000 km.
  - Geosynchronous orbit is a low inclination orbit having a period of 23 hours 56 minutes and 4 seconds.
  - It is a special position high above the Earth that allows an object to keep pace with the rotation our planet.
- It covers entire Asia-Pacific region from Middle East to the Pacific Ocean.
- Significance of SCT
  - Accessibility: Seamless and ubiquitous access to communication services in remote, rural, and hard-to-reach areas.
  - Contingency planning: SCT can be crucial during natural disasters or other emergencies when terrestrial networks may be damaged or disrupted.
  - Military and Defense applications: Can enable secure and reliable communication, navigation, surveillance, and intelligence gathering.
- Concerns associated with SCT: Space debris and orbital congestion, regulatory and governance challenges due to issues of international coordination and liability, cyber threats such as jamming, spoofing, etc.

## Satellite Communication Technology in India



### 6.3.3. SEMI-CRYOGENIC ENGINE (SCE)-200

#### Why in the News?

ISRO successfully conducted the first Pre-Burner Ignition trial for semi-cryogenic engine (SCE)-200.

#### More about News

- The ignition process is one of the most critical parts in the development of liquid rocket engine systems.
  - The recent SCE ignition is achieved using a start fuel ampule which uses a combination of Triethyl Aluminate and Triethyl Boron developed by Vikram Sarabhai Space Centre (VSSC).

#### Semi-Cryogenic Engine (SCE)

- SCE utilises liquid oxygen (LOX) as an oxidiser and refined kerosene as fuel.
- ISRO is developing a powerful SCE that produces a thrust of 2,000 kilonewtons (kN).
  - This SCE is aimed at improving the payload capacity of the Launch Vehicle Mark-3 (LVM3) and future launch vehicles.
  - Liquid Propulsion Systems Centre, Bengaluru, is ISRO's lead center for development of SCE.
- These engines offer significant advantages over traditional cryogenic engines.
  - The cryogenic engine uses liquid Oxygen as oxidiser and liquid Hydrogen as fuel (both kept at very low temperatures). It is usually the last stage of rockets.

#### Advantages of SCE

- Easy storage and handling: Refined kerosene is lighter, needs less space and can be stored at a normal temperature.
- More thrust: They can carry huge weight to a higher altitude.
- Other benefits: They are eco-friendlier and more cost-effective compared to cryogenic engines.

## 6.3.4. IMPORTANT SPACE MISSIONS IN NEWS

### 6.3.4.1. ARYABHATA

- ISRO celebrated Satellite Technology Day (STD) commemorating the **50th year of the Aryabhata Launch** in 1975.
- **About Aryabhata**
  - **India's first satellite**, named after the famous Indian astronomer in the 5th century.
  - **Built by the ISRO** and launched by a **Soviet Kosmos-3M rocket from Kapustin Yar (Russia)**.
  - Aimed to conduct **experiments in X-ray astronomy, aeronomics, and solar physics**.

### 6.3.4.2. JUNO MISSION

- NASA's Juno captures closest views of erupting volcanoes on Jupiter's moon Io.
  - **Moon Io** is the most volcanically active world in the solar system.
- **About Juno mission**
  - **Launched in 2011**.
  - **Aim:**
    - ✓ To understand the origin and evolution of Jupiter.
    - ✓ Investigate the existence of a possible **solid planetary core**, map Jupiter's intense magnetic field, etc.
  - In its **extended mission**, it continues its investigation of Jupiter till **2025**, or **until the spacecraft's end of life**.

### 6.3.4.3. DRAGONFLY MISSION

- NASA has announced that Dragonfly mission to Saturn's massive moon **Titan** will be launched in 2028.
  - It is fourth mission of **NASA's New Frontiers Program**. The other three are NewHorizons, Juno, and OSIRIS-Rex (also OSIRIS-APEX).
- **About Dragonfly Mission**
  - **Goal:** To explore the chemistry and habitability of multiple surface sites covering a large area. It will help in investigating Titan's habitability.
- **Titan** is the only satellite in our solar system **known to be blanketed by a dense atmosphere and host liquid seas on its surface**

## 6.3.5. OTHER IMPORTANT NEWS

### 6.3.5.1. ICE CUBE OBSERVATORY

- Scientists at **Ice Cube Neutrino Observatory in Antarctica** have detected seven tau neutrinos (ghost particles), which passed through the Earth.
- **About Ice Cube Observatory**
  - A **cubic-kilometre** neutrino particle detector buried deep **beneath the ice surface (~2500 metres)**.
  - **Aim:** Observe cosmic rays that interact with the Earth's atmosphere and study the nature of dark matter and the properties of the neutrino.
  - **Location:** Near the **Amundsen-Scott South Pole Station in Antarctica**.
    - ✓ The observatory was built on the South Pole as it needs **clear, pure, and stable ice** to make its discoveries and be **shielded from radiation at the Earth's surface**.
  - **First gigaton neutrino detector** ever built and was primarily designed to **observe neutrinos** from the most violent astrophysical sources.
- **Other Neutrino Observatories**
  - **Indian Neutrino Observatory (INO)**
  - **China's TRIDENT (Tropical Deep-sea Neutrino Telescope):** Being built in the South China Sea, near the equator.



### 6.3.5.2. KODAIKANAL SOLAR OBSERVATORY (KSO)

- KSO is entering its **125th year of establishment**
- **Established in 1899** and subsumed then Madras Observatory.
- Set up to **obtain data on how Sun heats up Earth's atmosphere** and to understand monsoon patterns.
- Kodaikanal was chosen for **its proximity to equator** and its **dust-free high-altitude location**.
- Observatory is currently under **Indian Institute of Astrophysics** and is **located in Palani range (Tamil Nadu)**.
- Also houses telescopes like **H-alpha telescope, Twin Telescope, WARM (White light Active Region Monitor) telescope etc.**

### 6.3.5.3. KALAM-250

- Skyroot Aerospace has successfully **test-fired Stage-2 of Vikram-1** space launch vehicle, called **Kalam-250**.
  - Stage-2 is significant because it propels satellites from dense atmosphere of Earth to deep vacuum of outer space.
  - **Vikram-1 is three-stage, solid-fuel based rocket.**
- **About Kalam-250**
  - A **high-strength carbon composite rocket motor**, which uses **solid fuel** and high-performance **Ethylene-Propylene-Diene terpolymers (EPDM) Thermal Protection System**.
  - **Solid propellant** in Kalam-250 was **processed by Solar Industries** at Nagpur facility.
  - Earlier, Skyroot had tested **Kalam-100, third stage of Vikram-1**, which was test-fired successfully in 2021.

### 6.3.5.4. CHANG'E-6

- Recently, China announced successfully launching of more than **8 metric ton Chang'e-6 lunar probe**.
- **About Chang'e-6**
  - Aims to bring back **2 kilograms of samples from the far side of the moon**, which humans have never done before.
    - ✓ China sampled from the near side of the moon in 2020 with the Chang'e-5 mission.
  - Expected to make a soft landing in the **South Pole of the moon i.e Aitken Basin**.
  - Included the **ICUBE-Q orbiter**, a cubesat **developed by Pakistan**.
    - ✓ **CubeSats are miniature satellites** typically characterized by their small size and standardized design.

### 6.3.5.5. WEAKLY INTERACTING MASSIVE PARTICLES (WIMPS)

- Recently, Indian scientists have found a **new approach to explore cold dark matter (CDM)**, a hypothetical dark matter that constitutes 25% of the current universe.
  - One of the promising candidates of CDM is the **Weakly Interacting Massive Particles (WIMP)**.
  - Such particle **arises naturally in extensions of the standard model of particle physics and predict** the correct energy density of the CDM for a plausible range of interaction strength (WIMP miracle).
- WIMP represents **one hypothesized class of particles to explain dark matter**.
  - They **neither absorb nor emit light** and don't interact strongly with other particles.
  - But when they encounter each other, they **annihilate and make gamma rays**.
- Also, Researchers have recently proposed the idea that we may have had two Big Bangs-one for normal matter and **one for mysterious Dark Matter called "Dark Big Bang."**
  - Dark Big Bang is thought to have happened significantly after the regular Big Bang and it could be **where dark matter came from**.

### 6.3.5.6. QUARKS

- Scientists have reported that the inside of most massive neutron stars is most likely made of quark matter.
  - **Neutron stars** are formed when a massive star runs out of fuel and collapses.
- **About Quarks:**
  - These are **elementary particles**. Like the electron, they are **not made up of any other particles**.



- These **can't exist in isolation**. They can only be found in clumps (groups) of **two or three** and such clumps of quarks are called **hadrons**.
  - ✓ **A quark's antiquark** clump is called a **meson**.
- These are the **ultimate building blocks** of **visible matter** in the universe.
- **There are six types of quarks**: up, down, top, bottom, strange, and charm.

## 6.4. HEALTH

### 6.4.1. ETHYLENE (C<sub>2</sub>H<sub>4</sub>)

#### Why in the News?

Mangoes were seized after being artificially ripened with ethylene.

#### About Ethylene

- Ethylene is a simple gaseous plant growth regulator (PGR).
- **Synthesis**: Mainly by tissues undergoing senescence (process of becoming old) and ripening fruits.
- **Properties**: Colourless, flammable gas having a sweet taste and odour.
- **Key Role**:
  - Influences of ethylene on plants include **horizontal growth of seedlings**, swelling of the axis and **apical hook formation** in dicot seedlings.
  - Highly effective in **fruit ripening**. It enhances the **respiration rate during ripening** of the fruits. This rise in rate of respiration is called respiratory climactic.
  - Promotes **senescence** and **abscission** of plant organs especially of leaves and flowers.
  - Breaks seed and **bud dormancy**, initiates germination in some seeds and sprouting tubers.
  - Helps leaves/ upper parts of the shoot to **remain above water**.
  - Promotes **root growth** and root hair formation
  - Used to initiate **flowering** and for synchronising fruit-set in pineapples.
  - Widely used PGR in agriculture.
- **Ethephon**: Most widely used compound as source of ethylene is ethephon.
  - Ethephon in an aqueous solution is readily absorbed and transported within the plant and releases ethylene slowly.
- **Health Impact of Ethylene and product based on it**: Long-term exposure can result in irritation of eyes, skin, and respiratory passages and affects nervous system. **Ethylene Oxide** is carcinogenic to humans.

#### Other Key Application of Ethylene based Chemicals

- **Ethylene Oxide / Ethylene Glycol** – Used to make other chemicals, including antifreeze, textiles, plastics, detergents, and adhesives.
  - Also used as a pesticide and sterilizing agent for medical equipment.
  - Recently, several countries have ordered to recall of India's Spice product due to the presence of ethylene oxide.
- **Ethylene Dichloride** – Used in PVC pipes, siding, medical devices, and clothing.

#### FSSAI directions to use Ethylene

- Permits **Ethylene for artificial ripening** provided concentration does not **exceed 100 ppm** (parts per million).
- Any source of **ethylene gas coming in direct contact with fruits is not permitted**.

#### Liquid Nitrogen

- The **Commissioner of Food Safety** in Tamil Nadu has directed officials to monitor use of liquid nitrogen in food items.
- **About Liquid Nitrogen**
  - A **colorless, odorless, non-flammable, non-corrosive** and extremely cold element
  - **Inert cryogenic fluid** with a temperature of **-196 °C** produced by compressing and cooling nitrogen gas below its evaporation point.
  - **Applications**: Freezing and transporting of food products, Cryotherapy, etc.
  - **Harmful Effects**: Rapidly freeze skin tissue and eye fluid, resulting in cold burns, frostbite, etc.

**Methanol**

- USA recalls various hand sanitisers containing methanol.
  - FDA has warned that methanol exposure could lead to **nausea, coma, seizures, permanent blindness, permanent damage to the Central Nervous System, or death**
- **Methanol (CH<sub>3</sub>OH)**
  - Also known as **wood alcohol**.
  - **Characteristic:**
    - ✓ A **colorless and fairly volatile liquid** with a faintly sweet pungent odor.
    - ✓ Completely **mixable with water**.
    - ✓ Considered as an **alternative fuel**.
  - **Applications:** Synthetic dyestuffs, pharmaceuticals, perfumes etc.
  - **Treatment of methanol poisoning:** Administer ethanol or an antidote called **fomepizole**

**6.4.2. GLYCEMIC INDEX**

**Why in the news?**

A recent scientific study has revealed the relationship between the **Glycemic Index in food to the risk of Type II diabetes and cardiovascular diseases**.

**About Glycemic Index (GI)**

- **Definition:** A measure of how quickly a carbohydrate-containing food raises blood sugar levels after it is consumed.
  - The index **ranks the carbohydrate-rich foods on a scale of 0 to 100** based on their ability to raise blood sugar levels as compared to pure glucose (which has a GI of 100).
- **Proposed by:** Prof. David Jenkins of the University of Toronto in 1981.
- **Factors that determine GI:**
  - **Internal factors:** Amylose, lipids, protein, phytic acid, dietary fibre, resistant Starch etc.
  - **External factors:** Cooking, processing, retro-gradation, soaking and germination.
- **Glycemic Load (GL) uses GI and the amount of total Carbohydrates in a serving of a specific food** to estimate how quickly and how much blood sugar will rise after its consumption.
  - It is obtained by **multiplying the quality of carbohydrate in a given food (GI) by the amount of carbohydrate in a serving**.

GI Index	Examples
<b>High (&gt;70)</b>	Wheat, White rice, potatoes, white bread etc.
<b>Medium (56-69)</b>	Orange juice, honey, and wholemeal bread etc.
<b>Low (&lt;55)</b>	Fruits, Non Starchy vegetables (Carrots, Spinach, Tomatoes etc.), Whole Grains, Legumes etc.

**Link between GI and Human Health**

- **Complications for people with diabetes:** High GI foods cause rapid fluctuations in blood sugar levels, which may strain the body's ability to produce insulin or utilize it effectively.
- **Issues to Cardio Vascular Health:** Diets rich in GI lead to weight gain, higher triglyceride levels and blood pressure in the body thereby making the individual susceptible to Cardiovascular complications in the long run.

**6.4.3. BIRD FLU**

**Why in the News?**

Recently, avian influenza has resulted in the death/culling of over 65,000 birds in Kerala.

**Avian influenza**

- Avian influenza or bird flu refers to the disease caused by infection with **avian (bird) influenza (flu) Type A viruses**.



- **Influenza A viruses** are divided into subtypes based on two proteins on the surface of the virus: **hemagglutinin (H) and neuraminidase (N)**.
  - H and N of influenza A virus **possess antagonistic activities on interaction with sialic acid (SA), which is the receptor for virus attachment.**
  - There are 18 different H subtypes and 11 different N subtypes Avian case.
- Avian influenza A viruses are classified into the following two categories:
  - **LPAI viruses** cause either no signs of disease or mild disease in chickens/poultry.
  - **HPAI viruses** cause **severe disease** and high mortality in infected poultry.

**Steps taken to mitigate/curb the H5N1 impact**

- **Global Initiatives**
  - **World Organisation for Animal Health (WOAH):** An international organization that collaborates across nations to enhance animal health.
    - ✓ **Members: 183 (including India).**
  - **Global Influenza Surveillance and Response System (GISRS):** Global influenza surveillance has been conducted through WHO's GISRS since 1952.
    - ✓ **National Institute of Virology (Pune)** is WHO Collaborating Centre for GISRS.
- **India initiatives**
  - **National Action Plan for Prevention, Control, and Containment of Avian Influenza (revised in 2021):** It describes the actions to be taken to handle a confirmed outbreak of Notifiable Avian Influenza (NAI), advises the States on pre-outbreak preparedness, etc.
    - ✓ Vaccination against HPAI is not permitted in India.

**6.4.4. MAGNETIC RESONANCE IMAGING (MRI) TECHNOLOGY**

**Why in the News?**

Iseult the World's most powerful MRI scans the first images of the human brain.





**More about News**

- Iseult can help refine our understanding of **anatomy of brain**.
  - It could also shed light on diseases like **Alzheimer's** or psychological conditions like **depression or schizophrenia**.

**About Magnetic resonance imaging (MRI) Technology**

- MRI is **non-invasive medical imaging test** that produces detailed images of almost every internal structure in human body.
- Uses **large magnet and radio waves**. No ionizing radiation is produced during an MRI exam, unlike **X-rays**.
- Magnetic field inside **works with radio waves and hydrogen atoms** in body to create cross-sectional images.

**Key Applications**

 <p><b>Functional MRI (fMRI)</b>, a special type of MRI <b>produces images of blood flow to certain areas of brain</b> which help in <b>brain surgery</b>.</p>	 <p>MRI is widely used in <b>medical diagnosis and treatment planning</b> for brain disorders, cardiovascular diseases, cancer, etc.</p>	 <p>Images produced by an MRI scan can show <b>organs, bones, muscles etc.</b></p>	 <p><b>Magnetic resonance angiography</b> (a type of MRI that looks specifically at the body's blood vessels)</p>
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**6.4.5. OTHER IMPORTANT NEWS**

**6.4.5.1. MENINGITIS**

- **Nigeria** became **first country** in world to introduce **Men5CV vaccine**, recommended by WHO.
  - It offers protection against five strains of **meningococcus bacteria** in a single shot.
  - **Meningococcal ACWY Vaccine** is the one available in India.



- **About Meningitis**
  - **Inflammation** of surrounding **tissues of brain and spinal cord.**
  - Caused by **bacteria, viruses, fungi and parasites.**
  - Mostly transmitted from **person to person.**
  - Although it affects all ages, **young children are most at risk.**
  - **Symptoms:** Neck stiffness, fever, confusion, headaches, nausea.

#### 6.4.5.2. THROMBOSIS WITH THROMBOCYTOPENIA SYNDROME (TTS)

- AstraZeneca for the first time admitted that its COVID-19 vaccine (Covishield) had rare side effects including TTS.
- **About TTS**
  - Also referred to as **Vaccine-induced Immune Thrombotic Thrombocytopenia (VITT).**
  - Occurs when a person has **blood clots (thrombosis)** together with a **low platelet count (thrombocytopenia).**
    - ✓ It is a **rare condition** in which blood clots form in unusual places in the body.
  - Affects person's brain, abdomen, lungs, arteries, etc.
  - **Symptoms:** Difficulty in breathing, chest pain, abdominal pain, swelling in leg, etc.

#### 6.4.5.3. S.A.R.A.H.

- World Health Organization unveils a **digital health promoter prototype S.A.R.A.H harnessing generative Artificial Intelligence (AI)** for public health.
- **About S.A.R.A.H.**
  - A **Smart AI Resource Assistant for Health** which uses new language models and cutting-edge technology.
  - Provides **information across major health topics**, including healthy habits and mental health.
  - Aims to provide an additional tool for people **to realize their rights to health.**
  - Can support people in **developing better understanding of risk factors** for some leading causes of death in world **E.g., cancer, heart disease, lung disease, and diabetes.**

#### 6.4.5.4. WHO SODIUM BENCHMARKS

- World Health Organization (WHO) has released the 2nd edition of its global sodium benchmarks for different food categories.
- **About Sodium Benchmarks**
  - Part of a broader WHO **initiative to reduce sodium consumption and prevent chronic conditions related to high blood pressure and obesity.**
  - Benchmarks provide reference values for sodium content to assess progress in reducing sodium consumption.
  - For adults, **WHO recommends less than 2000 mg/day of sodium** (equivalent to less than 5 g/day salt).

#### 6.4.5.5. CORONAVIRUS NETWORK (COVINET)

- World Health Organisation (WHO) has launched a new **CoViNet.**
- **About CoViNet**
  - A network of **global laboratories** with expertise in human, animal and environmental coronavirus surveillance.
  - Currently includes 36 laboratories from 21 countries (3 in India) in all 6 WHO regions.
  - Aims to **facilitate and coordinate global expertise** for **early and accurate detection, monitoring and assessment of SARS-CoV-2, MERS-CoV and novel coronaviruses** of public health importance.

#### 6.4.5.6. WEIGHT LOSS DRUGS

- Research reveals that medications designed to combat obesity can also be beneficial in treating a variety of other diseases.

- **How Weight loss drugs work?**
  - Weight loss drugs mimic the action of a gut hormone called **glucagon-like peptide 1 (GLP-1)**.
  - **Glucagon-like peptide (GLP-1)** is secreted from three major tissues in humans' i.e. **enteroendocrine L-cells in the distal intestine,  $\alpha$  cells in the pancreas, and the central nervous system.**
    - ✓ GLP-1 increases the **production of insulin** (a hormone that lowers blood-sugar levels) and reduces the production of glucagon (which increases blood-sugar levels).
    - ✓ They **suppress appetite and slow digestion**, making people feel full faster and longer, which reduces food intake.
    - ✓ GLP-1 is broken down by enzymes in the body very quickly, so it sticks around for **only a few minutes**.
- **Other Benefits of Fat losing drugs:** control type 2 diabetes, reducing heart issues like heart attacks, etc.

#### 6.4.5.7. RETROTRANSPOSONS

- They are evolutionarily **widespread genetic elements that replicate through reverse transcription of an RNA copy** and integrate the product DNA into new sites in the host genome.
- They comprise **significant fractions of metazoan genomes**.
- Retrotransposons are found in all eukaryotes (organisms with cells containing a clearly defined nucleus) but not in prokaryotes.

#### 6.4.5.8. MICROBIOME

- The microbiome is the **collection of all microbes, such as bacteria, fungi, viruses, and their genes**, that naturally live on our bodies and inside us.
- Although microbes are so small that they require a microscope to see them, **they contribute in big ways to human health and wellness**.
- These groups of **microorganisms are dynamic and change in response to a host of environmental factors**, such as exercise, diet, medication and other exposures.

## 6.5. DEFENCE

### 6.5.1. SPY (RECONNAISSANCE) SATELLITE

#### Why in the News?

South Korea has put second military spy (reconnaissance) satellite successfully into orbit.

#### More about News

- The satellite was launched by the SpaceX Falcon 9 rocket.
- Satellite is equipped with **synthetic aperture radar (SAR)** capable of producing images regardless of weather conditions.

#### About Spy or Reconnaissance satellite

- Provides **intelligence information** on the military activities of foreign countries.
- Can be either a **communications satellite** or an **Earth observation** satellite.
- Can pick up and record radio and radar transmissions while passing over a country.
- **Major Types:**
  - **Optical-imaging satellites:** Detect missile launches and see enemy weapons on the ground.
  - **Radar-imaging satellites:** Observe the Earth using radar technologies even during cloud cover.
  - **Signals-intelligence or ferret satellites:** Captures radio and microwave transmissions.
- Countries like US [Keyhole series (KH)], China (Yaogan series), Russia (Persona series) etc. have launched many reconnaissance satellites.
  - **Radar Imaging Satellite – 2 (RISAT-2)** is generally considered to be India's reconnaissance satellite. It was equipped with SAR.
- **Concerns:**
  - Militarization of space,



- Promotes mistrust among the countries (E.g. North and South Korea),
- Can be used as **dual used technology** (as orbital weapon by placing warheads on a low orbit satellite to be launched at a ground target), etc.

### 6.5.2. INDIGENOUS TECHNOLOGY CRUISE MISSILE (ITCM)

#### Why in the News?

Defence Research and Development Organisation (DRDO) conducted test from the **Integrated Test Range (ITR), Chandipur** on the eastern coast.

#### About ITCM

- Developed by the **Aeronautical Development Establishment (ADE)** of DRDO.
- It is a **long-range subsonic cruise missile** powered by an indigenous propulsion system.
  - The propulsion system is developed by **Gas Turbine Research Establishment**.
  - Cruise missiles are **unmanned vehicles that remain within the atmosphere** and can fly as low as a few meters off the ground.
  - Subsonic cruise missile flies at a **speed lesser than that of sound (around 0.8 MACH)**

#### Reasons for Missile and Satellite launch from the Eastern coast

- A satellite launched from the sites near the equator towards the east direction **gets an initial boost equal to the velocity of Earth's surface**.
  - It helps in **cutting down the cost of rockets used to launch the satellites**.
- **In case of the failure of satellite/missile, the Bay of Bengal provides a safe corridor** that does not fall on built-up hinterland.
- Does not have **major international maritime or airline routes crisscrossing** testing.
  - During test launches, the few existing routes can be closed temporarily without causing much disruption.

### 6.5.3. AGNI PRIME

#### Why in the News?

Agni-prime the new generation ballistic missile flight was tested successfully.

#### More about News

- Test was conducted by **Strategic Forces Command (SFC)**, along with the **Defence Research and Development Organisation** from Dr. APJ Abdul Kalam Island.
  - SFC is responsible for the management and administration of the **country's tactical and strategic nuclear weapons stockpile**.

#### About Agni prime

- **Two-stage canisterised solid propellant** ballistic missile, with a maximum range of 1,000 to 2,000 km.
- **A nuclear-capable** advanced variant of the Agni class of missiles.
- Lighter than **all the earlier Agni series of missiles and** will be guided by inertial navigation systems (INS) based on advanced ring-laser gyroscopes.
- First of the new generation of missiles after the end of the **Integrated Guided Missile Development Program (IGMDP)**.

#### Significance

- **As the warhead is preloaded**, it offers the ability to launch with minimal preparation time.
- It can be **stored for many years together**, with minimum inspection at periodic intervals.
- It has **very high accuracy**, which is useful for precise targeting.

#### 6.5.4. SUPERSONIC MISSILE-ASSISTED RELEASE OF TORPEDO (SMART) SYSTEM

##### Why in News?

SMART system was successfully flight-tested from Dr APJ Abdul Kalam Island off the coast of Odisha.

##### About SMART

- A Next-generation **missile-based light-weight torpedo delivery system**.
  - A **torpedo** is a type of missile or bomb fired underwater.
- **Developed by: Defence Research and Development Organisation (DRDO).**
- **Canister-based missile system** and is equipped with **parachute-based release system**.
- Consists of **advanced sub-systems** like two-stage solid propulsion system, electromechanical actuator system, etc.
- Enhances the **anti-submarine warfare capability** of the Indian Navy far beyond the conventional range of lightweight torpedo.

#### 6.5.5. OTHER IMPORTANT NEWS

##### 6.5.5.1. EXOATMOSPHERIC MISSILES (EMS)

- Allegedly, **Exoatmospheric missiles (EMs)** were used by Israel to intercept an attack by Iran.
- EMs, also known as anti-ballistic missiles (ABMs), are designed to **intercept and destroy incoming ballistic missiles** during mid-course or terminal phase of their trajectory.
- They use **advanced sensors**, such as infrared and radar systems, to detect and track incoming threats and use **guidance systems** to accurately manoeuvre and intercept targets travelling at high speeds in space.
- **Different types of exoatmospheric missiles:**
  - **Kinetic kill vehicles:** Destroy their targets through physical impact.
  - **Directed energy weapons:** Use lasers or other energy beams to disable or destroy incoming threats.

##### 6.5.5.2. OPERATION IRON SHIELD

- **Israel's successful interception of drones and missiles** launched by Iran, has been officially named operation "Iron Shield".
- Israel is protected by a **multi-layered defence array**, which includes **Arrow-2, Arrow-3, David's Sling, and Iron Dome** active defence systems.
  - **Arrow-2 and Arrow-3** intercepts medium to long-range missiles while David's Sling intercepts short to medium and medium to long range missiles.
  - **Iron Dome** is world's first missile defense system developed to tackle threat of **short range rockets and UAVs**.
  - It is capable of handling **multiple incoming threats** simultaneously.

##### 6.5.5.3. C-DOME DEFENCE SYSTEM

- Israel deployed **C-Dome defense system** for the first time.
- **About C-Dome**
  - A **naval version of the Iron Dome air defense system** used to shield against advanced ballistic, aerial, and surface-to-surface threats.
  - **Handles saturation attacks by engaging multiple targets** simultaneously, with **short reaction time**.
  - Unlike Iron Dome which has its own radar, C-Dome is **integrated into the ship's radar to detect incoming targets**.

##### 6.5.5.4. RAMPAGE MISSILES

- **Recently, Rampage Missiles** has been inducted by **Indian Air Force and Indian Navy**.
- **About Rampage Missile**
  - Long-range, supersonic, Air-to-Surface, precision strike missile.



- Developed by **Israel Aerospace Industries** and **Israeli Military Industries Systems**.
- **Range:** ~250 kms
- **Guidance:** GPS/ Inertial Navigation System (INS) navigation with anti-jamming capabilities.
  - ✓ **INS** is an electronic system that is able to detect and measure change in motion of an object.
- Integrated into Russian-origin aircraft fleet, including **Su-30 MKI, MiG-29, and Jaguar fighters**, and also into Indian Navy's **MiG-29K fleet**.

#### 6.5.5.5. KAMIKAZE DRONES

- India's first kamikaze drone has been developed by Kadet Defence Systems in collaboration with Defence Research Development Organisation (DRDO).
- **About Kamikaze drones**
  - Also known as Loitering Aerial Munitions (LAM) or Suicidal drone (crashes onto target) or Switchblade drones.
  - **Features:**
    - ✓ Can loiter over target area for a long duration (Around 12 hours) for **precise target identification**.
    - ✓ Has precision **target capability**, can change targets mid-flight or even abort the mission.
    - ✓ Adaptable to various terrains, including deserts, plains, and high-altitude environments.
    - ✓ **Flying range:** 150 km to 300 kilometers.

### 6.6. MISCELLANEOUS

#### 6.6.1. NETWORK-AS-A-SERVICE (NAAS)

- The **market for NaaS in India** is expected to expand from \$1.18 billion in 2024 to \$7.32 billion by 2029.
- **About NaaS**
  - A cloud service model in which **customers rent networking services** from cloud providers. It provides the **flexibility to pay** for services based on usage and to scale as business needs change.
  - Allows customer to operate the networks **without maintaining their own** networking infrastructure.
    - ✓ The traditional network model requires **capital expenses (CapEx)** for physical networks with switches, routers, and licensing.

#### 6.6.2. KOREA SUPERCONDUCTING TOKAMAK ADVANCED RESEARCH (KSTAR)

- Korea Superconducting Tokamak Advanced Research (KSTAR) has set the new world record of 48-second-long operation at 100 million degrees
- **KSTAR** fusion reactor reached temperatures **seven times that of the Sun's core** in latest advancement for nuclear fusion.
- KSTAR also maintained **high confinement mode (H-mode)** for **over 100 seconds**
  - H-mode is a **stable plasma state**.
  - Plasma is **hot, charged gas made of positive ions and free-moving electrons** with unique properties **distinct from solids, liquids, or gases**.

#### 6.6.3. ELECTRIC VERTICAL TAKE-OFF AND LANDING (E-VTOL)

- Recently, there has been proposal for air taxi from Gurugram to Delhi using e-VTOL.
- eVTOLs are a new class of **clean, quiet, cheap air mobility solutions** that promise to fundamentally **transform urban mobility**.
- E-VTOL aircraft is one that **uses electric power to hover, take off, and land vertically**.
  - Most eVTOLs use **distributed electric propulsion technology** which means integrating complex propulsion system with the airframe.
  - This technology has grown as a result of **electric propulsion based on progress in motor, battery, fuel cell and electronic controller technologies** and fuelled by need for new vehicle technology that ensures urban air mobility (UAM).



- **Applications of e-VTOL aircraft** are in firefighting, public safety, search and rescue, disaster relief and law enforcement.

#### 6.6.4. PIEZOELECTRICITY

- Command Hospital, Pune became the **first government hospital** in India to conduct successful **piezoelectric Bone Conduction Hearing Implants (BCI)**.
- Piezoelectric BCI system is an **implantable medical electronic device for hearing impaired patients**.
- **About Piezoelectricity**
  - Refers to the **appearance of positive electric charge on one side** of certain non-conducting crystals and **negative charge on the opposite side** when the crystals are **subjected to mechanical pressure**.
  - Utilized in various applications, like, **microphones, sensors, Piezoelectric Motors etc.**

#### 6.6.5. INSOLUBLE SULPHUR/POLYMERIC SULPHUR

- An anti-dumping probe has been initiated on 'insoluble sulphur' imports from China and Japan.
- **Insoluble Sulphur** is amorphous form of sulfur that does not dissolve in carbon disulfide.
- **Applications**
  - **Important rubber additive agent**, used in **automobile rubber parts and other rubber products**. E.g., Tyres, Shoes.
  - Used as **vulcanization accelerator** in rubber industry.
    - ✓ Vulcanization is **chemical process that hardens rubbers by cross-linking rubber molecules** with other substances.
  - **Improves product quality**, wearability, etc.

#### 6.6.6. BISPHENOL A (BPA)

- Negotiations are being under the aegis of UNEP to address plastic pollution across the life cycle including the issue of harmful chemicals such as BPA used in plastic packaging.
- **About BPA**
  - Chemical used primarily in production of **polycarbonate plastics and epoxy resins**.
    - ✓ **Polycarbonate plastics** are often used in containers that store food and beverages.
    - ✓ **Epoxy resins are used to coat the inside of metal products**, such as food cans, bottle tops, etc.
  - Exposure to BPA can have **health effects on brain and prostate gland of fetuses, infants and children**.

#### 6.6.7. GOLDENE

- Scientists have developed a sheet of Gold, called Goldene, which is just one-atom thick.
- **About Goldene**
  - Created by **sandwiching silicon between titanium carbide layers**, depositing gold, allowing gold atoms to replace silicon, forming monolayer.
  - They are roughly **100 nanometres thick**, approx. 400 times thinner than the thinnest commercially available gold leaf.
  - **Potential applications:** Catalyst in the electronics industry, carbon dioxide conversion, hydrogen generation, water purification, etc.

#### 6.6.8. OXYTOCIN

- Delhi High Court orders police action against **oxytocin use on cattle in city dairies**.
- **About Oxytocin**
  - A hormone secreted by the **pituitary glands of mammals during sex, childbirth, lactation or social bonding**.
  - Helps new mothers from **excessively bleeding after giving birth**.
  - Misused on **milch cattle to increase yield**.
  - Regulated under **Section 26 A of Drugs and Cosmetics Act of 1940**.



- Administering Oxytocin is considered **animal cruelty** and is punishable under **Prevention of Cruelty to Animals Act, 1960**.

### 6.6.9. CHLOROPICRIN

- The United States accused Russia of employing the chemical agent chloropicrin in Ukraine
- Chloropicrin** is a broad-spectrum fumigant chemical that can be used as an antimicrobial, fungicide, herbicide, insecticide, nematicide and also as a warfare agent.
  - First used as a poison gas in the First World War, both by Allied and Central Powers.
- Properties:**
  - Colorless to yellow oily liquid.
  - Highly volatile and is a gas at room temperature.
- Effects on humans:** Severe irritation to eyes, skin, respiratory tract, induce vomiting, etc.

### 6.6.10. NITROPLAST

- Researchers have discovered a **type of organelle**, called **nitroplast**, in a marine algae *Braarudosphaera bigelowii*, that can fix nitrogen.
  - Nitrogen fixation** is a biological process in which **nitrogen gas is converted into a usable form** for cell growth.
- It is generally believed that nitrogen fixation **only occurs in bacteria and archaea** but *Braarudosphaera bigelowii* marks the **first known nitrogen-fixing eukaryote**.
- Implications:** The nitroplast discovery opens doors for sustainable agriculture, improved crop yields, reduction in need of fertilizers and environmental stewardship.

## 6.7. SCIENCE AND TECHNOLOGY IN GOVERNMENT SCHEMES

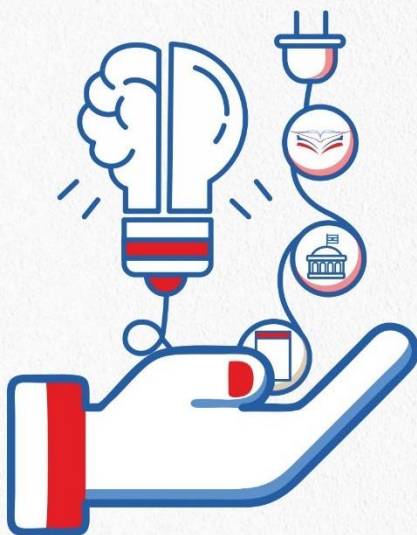
Technologies/ Applications	Scheme/Initiatives/S phere	Features/ Details of Technology
LiDAR and Geographical Information System (GIS)	Namami Gange Yojana	<ul style="list-style-type: none"> <li>In Namami Gange Yojana, <b>Geographical Mapping</b> is carried out by <b>Survey of India</b> with the help of <b>LiDAR</b> (Light Detection &amp; Ranging) &amp; GIS technology.               <ul style="list-style-type: none"> <li><b>LiDAR</b> is a remote sensing method that uses <b>light in the form of a pulsed laser to measure ranges</b> (variable distances) to the Earth.</li> <li>It consists of a <b>laser, a scanner, and a specialized GPS receiver</b>.</li> <li>Two types of LiDAR-                   <ul style="list-style-type: none"> <li>✓ <b>Topographic</b> uses a <b>near-infrared laser</b> to map the land.</li> <li>✓ <b>Bathymetric</b> uses water-penetrating <b>green light</b> to also measure seafloor and riverbed elevations.</li> </ul> </li> <li><b>GIS:</b> A GIS is a <b>computer system</b> that analyzes and displays <b>geographically referenced information</b>. It uses data that is <b>attached to a unique location</b>.</li> </ul> </li> </ul>
Internet of things (IoT)	Jal Jeevan Mission (JJM)	<ul style="list-style-type: none"> <li>Sensor based IoT solution is used for <b>the measurement and monitoring of water supply under JJM</b>.               <ul style="list-style-type: none"> <li>IoT refers to a <b>network of devices, vehicles, appliances and other physical objects that are embedded</b> with sensors, software and network connectivity.</li> </ul> </li> </ul>
Augmented Reality (AR)	e-Pathshala AR (Augmented Reality) App, an initiative of NCERT	<ul style="list-style-type: none"> <li>AR is an enhanced, <b>interactive version</b> of a <b>real-world environment</b> achieved through <b>digital visual elements, sounds, and other sensory stimuli via holographic technology</b>.</li> <li>It incorporates three features:</li> </ul>



		<ul style="list-style-type: none"> <li>○ a combination of digital and physical worlds,</li> <li>○ interactions made in real time, and</li> <li>○ accurate <b>3D identification</b> of virtual and real objects.</li> </ul>
Cloud Computing	Meghraj (the Cloud Computing initiative)	<ul style="list-style-type: none"> <li>● <b>Cloud computing</b> is the on-demand access of computing resources such as physical servers or virtual servers, data storage, networking capabilities, etc. over the internet with pay-per-use pricing.</li> <li>● It <b>offers customers greater flexibility and scalability compared to traditional on-premises infrastructure.</b></li> </ul>
Artificial Intelligence	PM Kisan Samman Nidhi scheme (PM-KISAN Scheme)	<ul style="list-style-type: none"> <li>● <b>‘Kisan e-Mitra’ an AI-powered chatbot</b> will assist farmers with queries about the <b>PM-KISAN Scheme.</b></li> <li>○ This solution supports multiple languages and is evolving to assist with other government programs.</li> </ul>
Optical Fibre Cable (OFC)	BharatNet	<ul style="list-style-type: none"> <li>● <b>Optical Fibre Cables (OFCs)</b> are laid down under <b>BharatNet</b> to broadband connectivity to Gram Panchayats.</li> <li>○ <b>OFCs</b> are thin strands of glass or plastic that carries digital information in the form of light pulses.</li> </ul>
Geospatial Information Management System (GMIS)	Smart Cities Mission	<ul style="list-style-type: none"> <li>● <b>Geospatial Information Management System (GMIS)</b> is a web application designed for the advancement, and smooth running of services across the Smart Cities program and for <b>enhanced monitoring using enabled services.</b></li> </ul>
Electronic Maintenance of Rural Roads under PMGSY (eMARG) and Green Technology in Road Construction	Pradhan Mantri Gram Sadak Yojana (PMGSY)	<ul style="list-style-type: none"> <li>● eMARG is a <b>GIS-based Enterprise e-Governance solution</b> to aid and assist the officials, Contractors, Banks and general public.</li> <li>● <b>New/Green Technology in Road Construction:</b> <ul style="list-style-type: none"> <li>○ Waste plastics,</li> <li>○ Cold mix technology/ Cold Mix Asphalt Technology (production of asphalt mixture without application of heat),</li> <li>○ Cell filled concrete (it is a grid OF plastic CELLS into which CONCRETE is placed),</li> <li>○ Coir geo-textiles are used for IMPROVEMENT OF SUB-GRADE SOIL STRENGTH IN ROAD PAVEMENTS AND STABILIZATION OF SIDE slopes</li> <li>○ Nano technology (like zydex technologies, Asphalt HMA layers or carpet and sealcoat layers)</li> <li>○ Full Depth Reclamation (FDR) for recycling distressed flexible pavement and its underlying pavement layer(s) into a new base layer           <ul style="list-style-type: none"> <li>✓ It is <b>not for improving roads which fail due to poor drainage.</b></li> </ul> </li> <li>○ Stabilization using cement and lime.</li> </ul> </li> </ul>
Continuous Operating Reference Station (CORS)	Survey of Villages Abadi and Mapping with Improved Technology in Village Areas (SVAMITVA)	<ul style="list-style-type: none"> <li>● <b>Continuous Operating Reference Station (CORS)</b> network supports <b>accurate Geo-referencing, ground truthing and demarcation of lands.</b></li> <li>○ A CORS network is a <b>group of Real-time kinematic positioning (RTK) base stations that broadcast corrections,</b> often through the Internet.</li> <li>○ RTK is the application of <b>surveying to correct common errors in current satellite navigation (GNSS) systems.</b></li> </ul>
Aadhaar enabled Payment System (AePS)	Pradhan Mantri Jan Dhan Yojana (PMJDY) - National	<ul style="list-style-type: none"> <li>● <b>Aadhaar enabled Payment System (AePS)</b> is a bank led model which allows <b>online interoperable financial inclusion transaction at PoS (MicroATM)</b> through the Business correspondent of any bank using the Aadhaar authentication.</li> </ul>

	<b>Mission For Financial Inclusion</b>	<ul style="list-style-type: none"> <li>• <b>AePS</b> integration Application Programming Interface (API) will further facilitate the financial inclusion. <ul style="list-style-type: none"> <li>○ API is a set of rules or protocols that <b>enables software applications</b> to communicate with each other to <b>exchange data, features and functionality</b>.</li> </ul> </li> </ul>
<b>Geo-tagging</b>	<b>Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005 and Pradhan Mantri Jan Vikas Karyakram (PMJKV)</b>	<ul style="list-style-type: none"> <li>• <b>Geo-tagging of created assets</b> through <b>GeoMGNREGA</b> of the Ministry of Rural Development (MoRD) in association with <b>National Remote Sensing Centre (NRSC), ISRO and National Informatics Centre</b>.</li> <li>• <b>Geo-tagging</b> is the process of <b>ascertaining the geographical location of an image</b> by adding geographical identification like <b>latitude and longitude to various media</b> such as a photo or video.</li> </ul>
<b>Blockchain Technology</b>	<b>Tokenisation of Cards by Reserve Bank of India (RBI)</b>	<ul style="list-style-type: none"> <li>• <b>Tokenisation</b> refers to the process of creating a digital representation of an asset, called a token, on a blockchain network.</li> <li>• <b>Blockchain</b> is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network.</li> </ul>
<b>Radio Frequency Identification (RFID) technology</b>	<b>One Vehicle, One FASTag Initiative</b>	<ul style="list-style-type: none"> <li>• <b>FASTag</b> employs <b>RFID technology</b> to enable automatic toll payments. <ul style="list-style-type: none"> <li>○ RFID is a method of <b>wireless communication involving electromagnetic waves</b>.</li> <li>○ It has two components, <b>tags and readers</b> which do not need to be in line of sight to share information.</li> </ul> </li> </ul>

# OPTIONAL SUBJECT CLASSES



- » Anthropology      » Geography
- » Philosophy        » Sociology
- » Public Administration
- » Political Science and International Relations

*Starts : 2 JULY, 5 PM*

# Smart and Efficient Revision for Success in UPSC Prelims



To know more and explore the VisionIAS Quick Revision Material

## Why Revision is Essential Before Prelims Examination?

Revision is crucial in the preparation for the UPSC Prelims due to the vast syllabus and the highly competitive nature of the examination. Effective revision consolidates knowledge, aids in long-term retention, and boosts confidence, allowing aspirants to access information quickly and accurately during the exam.

## Advantages of Smart Revision Before the Prelims Exam



Efficiency in Syllabus Coverage



Enhanced Retention and Recall



Identification of Weak Areas



Integration of Current Affairs



Effective Time Management



Building Confidence and Reducing Anxiety

## Smart Revision Techniques

**1. Active Recall:** Practice retrieving information from memory to enhance retention.

**2. Spaced Repetition:** Revisit topics at regular intervals, to solidify memory.

**3. Mock Tests:** Regularly simulate exam conditions to identify focus areas and current status.

**4. Focused Revision:** Prioritize high-yield topics and current affairs.

**5. Mind Maps:** Use visual aids such as infographics, mind maps, etc. to organize and connect concepts.

**6. Interleaved Practice:** Mix different subjects to improve problem-solving skills and higher retention over time.

**7. Peer Discussions:** Engage with peers to discuss and quiz each other on key topics.

## VisionIAS Quick Revision Classes



**Thematic Coverage of GS Prelims Syllabus:** Covers essential subjects such as History, Polity, Economy, Environment, Geography, etc.



**Quick Revision Classes:** 32 focused classes for comprehensive topic review.



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Smart revision is key to mastering the UPSC Prelims. By adopting strategic revision techniques and leveraging VisionIAS Quick Revision Classes, aspirants can enhance their preparation and boost their exam confidence.

## 7. CULTURE

### 7.1. SCULPTURE, TEMPLE AND OTHER ARCHITECTURE

#### 7.1.1. DELISTING OF MONUMENTS

##### Why in the News?

The Archaeological Survey of India (ASI) intends to delist 18 centrally protected monuments out of 24 "untraceable" monuments.

##### More about News

- These 18 monuments are part of an earlier list of monuments that the ASI had said were "untraceable" and it was assessed that they do not have national importance.
- Among the monuments that face delisting now are a medieval highway milestone recorded as **Kos Minar No.13 (Kos Mi) at Mujessar village in Haryana**, Gunner Burkill's tomb in Jhansi district, the Telia Nala Buddhist ruins in Varanasi etc.
  - The Kos-minars, erected during reign of Mughal Emperor Jahangir are the earliest known examples of the 'road milestones' in the Indian History.

##### About "Delisting" of monument

- **Delisting** a monument means it will no longer receive conservation, protection, and maintenance from the ASI.
- It is done in accordance of **Section 35 of The Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958**.
  - Under the act delisting is done by the **Central Government**.
- There is **no term called "Missing Monuments"** in the AMASR Act.
- **Article 49** of the Constitution directs the **state to protect monuments and places and objects of national importance across the country**.

### Monuments of National Importance



Under **Section 3** of **AMASR Act**, it includes **all ancient and historical monuments and archaeological sites and remains** which have been **declared** by the:

- ▶ **Ancient and Historical Monuments and Archaeological Sites and Remains (Declaration of National Importance) Act, 1951**, or
- ▶ **By Section 126 of the States Reorganisation Act, 1956**, to be of **national importance**.

Under **Section 4** of **AMASR Act**, it includes **any ancient monument or archaeological sites and remains** which is

- ▶ **Declared by the Central Government through notification in the Official Gazette and are not included in section 3** is of **national importance**.



### The Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958

- Provides for the **preservation of ancient and historical monuments and archaeological sites** and remains of national importance.
- **Regulates the archaeological excavations and protection of sculptures**, carvings and other like objects.
- **Section 4 of the act empowers the Central Government** to declare ancient monuments, etc. to be of National Importance.
- **National Monuments Authority (NMA)** under the Ministry of Culture has been setup under The AMASR (Amendment and Validation) Act, 2010.
  - Its function includes **protection and preservation of monuments and sites** through management of the prohibited and regulated area around the centrally protected monuments.
  - It also **grants permissions** to applicants for **construction related activity** in the **prohibited and regulated area**.

#### 7.1.2. MADHAVA PERUMAL TEMPLE

- Inscriptions found at **Sri Madhava Perumal Temple**, which has largely remained submerged by Bhavanisagar dam, revealed a 1000 years old trade route.
  - The route connected the **Kongu region in western Tamil Nadu with southern Karnataka and Kerala** by crossing the River Bhavani and River Moyar.
- In 1338, **Veera Siddha Keththaya Dhandanayaka** constructed the Sri Madhava Perumal Temple.
- Temple is dedicated to **Thondreshwaramudiayar (Lord Shiva)**.
  - The area came under the **Hoysala rulers**.

#### Madhava Perumal Temple



## 7.2. PAINTING AND OTHER ART FORMS

#### 7.2.1. MOHINIYATTAM

- Kerala Kalamandalam has lifted gender restrictions for boys to learn Mohiniyattam.
- **About Mohiniyattam**
  - It is the **classical solo dance form of Kerala**.
  - **References of Mohiniyattam** can be found in **texts Vyavaharamala** written in 1709 by Mazhamagalam Narayanan Namputiri and in **Ghoshayatra**, written later by poet Kunjan Nambiar.
  - **Major themes:** Love and devotion to God usually Lord Vishnu or his incarnation Lord Krishna as lead character.
  - **Characteristics**
    - ✓ 40 different basic movements called **adavukal**.
    - ✓ Graceful, swaying body movements with **no abrupt jerks or sudden leaps**.
    - ✓ Lays emphasis on **acting**.

#### Mohiniyattam



#### 7.2.2. THOLU BOMMALATA

- Sangeet Natak Akademi is reviving an ancient theatre performance of Tholu Bommalata puppetry which is on the brink of extinction.
- **About Tholu Bommalata**
  - Also known as the dance of **leather dolls**.
  - It is mainly performed in the **Godavari region of Andhra Pradesh**.

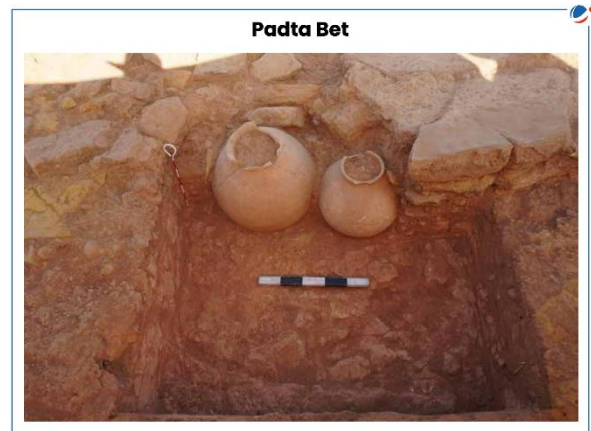
- Made from goatskin, they are projected on a small screen, like colour photographic transparencies.
- **Major screen characters:** Animals, birds, gods, and demons
- **Major themes:-** Ramayana and Mahabharata.



## 7.3. IMPORTANT SITES IN NEWS

### 7.3.1. PADTA BET

- Archaeological excavation reveals **5,200-year-old Harappan settlement at Padta Bet in Kachchh, Gujarat.**
  - It is near **Juna Khatiya**, an Early Harappan necropolis (mass burial site).
- **Evidence of occupation from Early Harappan to Late Harappan periods:**
  - **Pottery** include **Ceramic artefacts** of novel kinds involving large storage jars, small bowls and dishes.
  - **Artefacts** including **semi-precious stone beads** made of carnelian and agate, terracotta spindle whorls, copper, lithic tools etc.
  - **Remains of animal bones** representing cattle, sheep or goat and **edible shell fragments**, thereby indicating **animal domestication**.



### 7.3.2. NEW ARCHAEOLOGICAL SITES IN TELANGANA

- Archaeologists have discovered 3 new archaeological sites in Telangana.
- **New Archaeological sites include:**
  - **Ooragutta:** An Iron Age megalithic site.
  - **Two new rock art sites at Damaratogu** in Gundala mandal of Bhadradi Kothagudem district.
    - ✓ **Devarlabanda Mula:** Has only depictions of animals and no humans or weapons.
- Usually in this region, a type of megalithic monument known as '**Dolmenoid Cists**' are found.
  - Dolmenoid cists are **chamber tombs which are semi-subterranean**.
- The three basic types of megaliths are the **chamber tombs, unchambered tombs, and megaliths not connected with burials.**

## 7.4. TRIBES IN NEWS

### 7.4.1. SOLIGAS TRIBE

- Soligas Tribe are an **isolated tribal community restricted to only Karnataka & Tamil Nadu** (especially in Biligiri Rangana Hills and Male Mahadeshwara Hills).
  - Popularly known as **Soliga/Sholiga/Soligaru**.
  - Also **called the children of bamboo** because the word is believed to mean that they originated from bamboo.
  - Their settlements are known as '**haaDi**' and '**pooDu**'.

- They speak “**Soliga**” which is one of the **Dravidian Language**.
- **Rituals and Festivals:** They Perform rituals to **invoke rain gods during drought**, using freshly squeezed honey as offerings.
  - Their traditional festivals are **Rotti habba, Hosa Ragi habba, Mari habba, Gowri habba, etc.**
  - They follow **Hinduism, with a deep reverence for nature**.
- **Occupation and Lifestyle:**
  - They **practice shifting cultivation and hunting** in tune with the seasonal cycle of the forest.
  - Soligas use more **than 300 herbs for the treatment of various ailments**.
- **Other details:**
  - To recognise the efforts of the **Soliga Community in biodiversity and conservation**, a new genus of wasp, '**Soliga Ecarinata**,' has been after them.
  - **Soligas became the first tribal community** living inside a tiger reserve to **get legal rights to the forest in 2011**.

### 7.4.2. SHOMPEN TRIBE

Shompen cast their vote for the first time in Lok Sabha Election.

- **About Shompen Tribe**
  - One of the **Particularly Vulnerable Tribal Groups**.
  - Reside in dense **tropical rain forests of Great Nicobar island**.
  - Belong to the **Mongoloid group**.
  - According to Census (2011), **estimated population of Shompen is 229**.
  - They are **hunters and gatherers**. They used to hunt wild pig, python, monitor Lizard, crocodile, etc.
  - **Live a semi-nomadic life** and have **not been colonised at one place** in a defined reserve forest.

### 7.4.3. KONDA REDDI TRIBES

The tribe **shared their indigenous knowledge** about **Indian Laurel tree** with Forest officials.

- **About Konda Reddis**
  - Particularly **Vulnerable Tribal Group** inhabiting banks of **river Godavari** in Andhra Pradesh.
  - They practise **Podu cultivation**, a type of shifting cultivation.
- **About Indian Laurel Tree (Terminalia tomentosa)**
  - **Deciduous trees** growing up to 30 m tall.
  - **Has the ability to store water** in its trunk during summers.
  - Tree is used in **haemorrhage, ulcers, fractures** etc.
  - Known as **Indian Silver Oak**, its timber has great **commercial value**.

## 7.5. MISCELLANEOUS

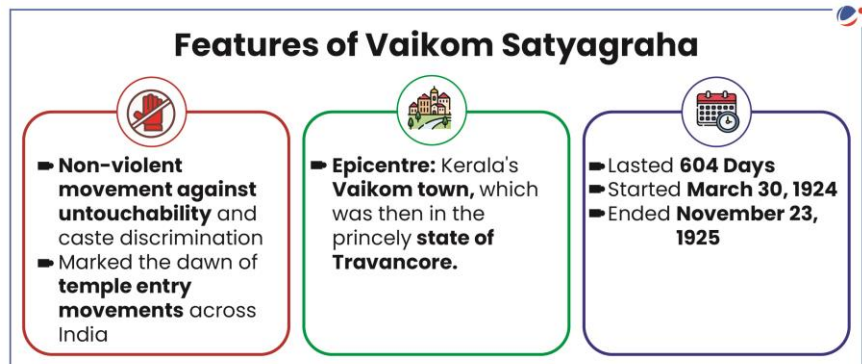
### 7.5.1. VAIKOM SATYAGRAHA

**Why in the News?**

Recently, India celebrated the **100th anniversary of the Vaikom Satyagraha**, a significant movement in Indian history that confronted untouchability and caste-based oppression.

**About Vaikom Satyagraha**

- **Historic non-violent temple entry protest** that began in Vaikom, a town in the princely state of Travancore (**Kerala region**), on **March 30, 1924**.



- It was in a response to the discriminatory exclusion of "lower caste" Hindus from accessing the Vaikom Mahadeva temple.

**Associated Leaders & support**

- **T.K. Madhavan, K.P. Kesava Menon and K. Kelappan** (also known as Kerala Gandhi) are considered the pioneers of the Vaikom Satyagraha movement.
  - **Issue of temple entry was first raised by Ezhava leader T K Madhavan** in a 1917 editorial in his paper **Deshabhimani**.
  - In 1921, the **Travancore Congress Committee, led by T.K. Madhavan**, launched a campaign to have the ban lifted.
  - In the **1923 session of the INC in Kakinada**, a resolution was passed by the **Kerala Provincial Congress Committee to take up anti-untouchability as a key issue**.
- **George Joseph** took over the leadership of the Satyagraha in the absence of Kesava Menon.
- **E. V. Ramasamy Naicker, known as Periyar, also called Vaikom Veerar**, was a key figure in the Vaikom Satyagraha. Among the all persons arrested in movement, only **Periyar got rigorous imprisonment**.
- **Mahatma Gandhi's** involvement began in 1921 as he supported a mass agitation led by Madhavan for temple entry.
- **Sree Narayana Guru, Mannathu Padmanabhan, E. V. Ramasamy Naicker**, etc also supported the agitation.
- **Women like Nagammai (wife of Periyar), Kannammal etc.** played key roles empowering women and taking on vital responsibilities.

- Satyagrahis went in **groups of three to enter the temple**.
  - Dressed in khadi and wearing khadi caps, **Govinda Panikkar (Nair), Bahuleyan (Ezhava) and Kunjappu (Pulaya)**, defied the prohibitory orders.
  - The **movement gained popularity throughout India** and received support from various regions.
    - ✓ The **Akalis of Punjab provided food to the Satyagrahis**.
    - ✓ **Christian and Muslim leaders** also supported the movement
- The Vaikom Satyagraha was **officially withdrawn on November 30, 1925** after consultations between **Gandhi and W.H. Pitt**, the then police commissioner of Travancore.

**Outcome of Vaikom Satyagraha**

- **Legal Reforms & initiatives:**
  - The Satyagraha's pressure led to the **Temple Entry Proclamation in 1936**.
  - It also led to initiatives like **the establishment of the Travancore Public Service Commission** to ensure fairness in government roles.
- **Political Awakening:** among marginalized communities.
- **National Impact:** The movement's resonance extended beyond Kerala.
  - **Kalaram Temple Entry Movement (1930)** by Dr. B.R. Ambedkar.
  - **The Guruvayur satyagraha (1931)** by K. Kelappan.
- **Rift between Mahatma Gandhi and Periyar:**
  - While **Gandhiji saw it as Hindu reformist movement**, Periyar called it a fight against caste-based atrocities.
  - **Periyar was not happy with the partial success attained** (only 3 out of 4 roads leading to the temple were open for all the castes), and he eventually **quit Congress** months later.

**Other Anti-Caste Movements**

Year	Movement	Leaders	Details
1873	Satyashodhak Movement	Jyotirao Phule	Emancipation of low castes, untouchables, and widows, Against Brahminic dominion
1916	Justice Party Movement	Dr. T.M Nair, P. Tyagaraja Chetti, C.N Mudalair	Against Brahminic control in government, education, and politics
1924	Depressed Classes Movement	BR Ambedkar	Upliftment of depressed classes, Against untouchability, published Marathi Newspaper titled Bahiskrit Bharat (1927)
1925	Self-Respect Movement	EV Ramaswami Naicker (Periyar)	Against caste system and Brahmin bias, Establishment of Kudi Arasu journal (1910)



## 7.5.2. WORLD CRAFT CITY (WCC)

### Why in the news?

The World Crafts Council International (WCCI) has picked **Srinagar to map its craft clusters before its final nomination as the WCC.**

### More about the news

- Local crafts in Srinagar include **Pashmina shawls, walnut wood carving, hand-knotted carpet, Kani shawl, Khatamband (ceiling design), Sozni craft (needle embroidery), Jalakdozi (chain stitch rugs), Namdha (handmade rug), Basholi Painting (depicting Vaishnavism), papier mâché** etc.

### About WCC

- Launched in **2014 by the WCCI.**
- It recognizes role of **local authorities, craftspeople, and communities** in cultural, economic, and social development worldwide.
- It establishes a **dynamic network of craft cities** across the globe, aligning with the principles of the **creative economy.**
- WCCI is a **Kuwait-based organization** working on the **recognition and preservation of traditional crafts** across the globe.

## 7.6. ERRATA

- PT 365 Culture Update (Jan to March 2024):** In article 7.4.1. Lachit Barphukan on the Page 191, it was mistakenly mentioned that Lachit Barphukan was the first Barbarua.
  - The correct information is that **Momai Tamuli Barbarua (father of Lachit Barphukan) was the first Barbarua.**

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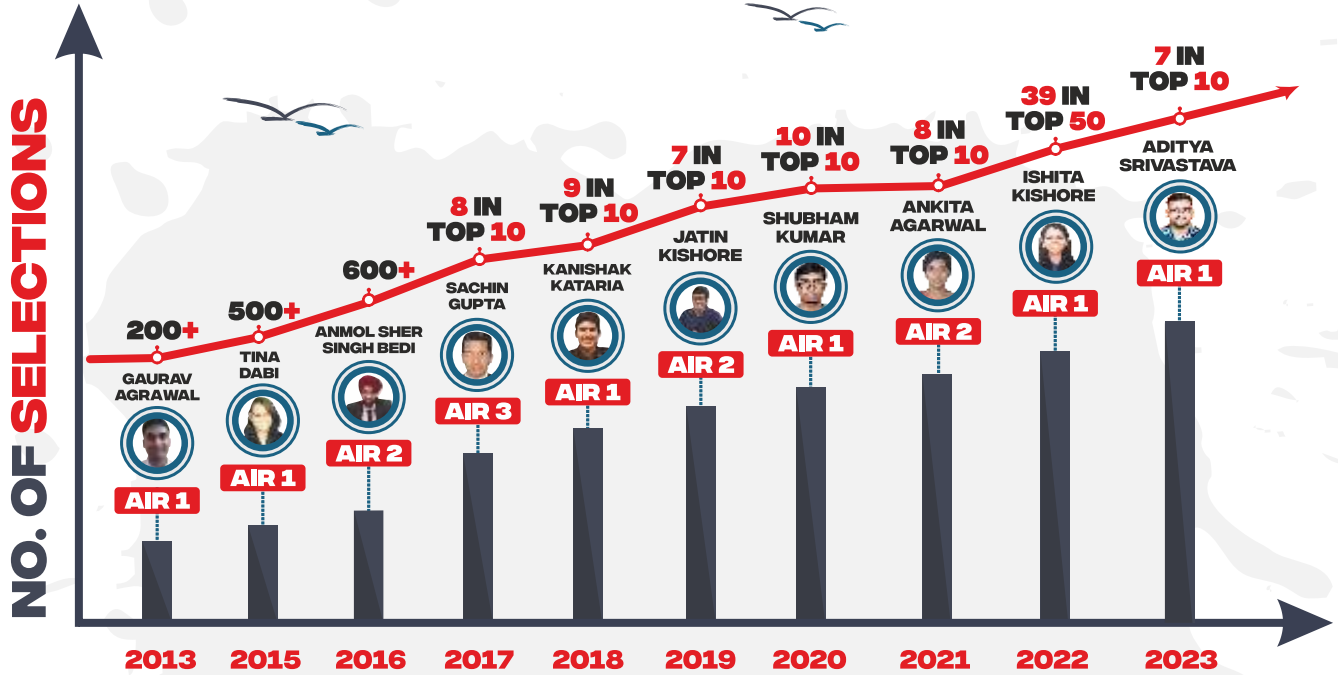
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**HYDERABAD: 5 JUNE**

**JAIPUR: 30 MAY**

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**LUCKNOW: 17 MAY**

**PUNE: 5 MAY**

**फाउंडेशन कोर्स सामान्य अध्ययन 2025**

▶ प्रारंभिक, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज

**DELHI: 14 मई, 9 AM | 11 जून, 9 AM**

**BHOPAL: 11 जून**

**LUCKNOW: 5 जून**

**JAIPUR: 30 मई**

**JODHPUR: 20 मई**



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## 8. SCHEMES IN NEWS

### 8.1. NATIONAL AYUSH MISSION (NAM)

#### Why in the news?

Recently, a comprehensive report on the National AYUSH Mission (NAM) has been released by the Parliamentary Standing Committee on Health and Family Welfare.

#### Quick facts

- **Ministry:** Ministry of Ayush
- **Purpose:** Holistic wellness and "self-care" to reduce the disease burden
- **Type:** Centrally Sponsored Scheme
- **Tenure:** From 2015 to 2025-26

#### Objectives

- To provide **AYUSH health care services** throughout the country by **strengthening and improving AYUSH health care services**.
- To establish a **holistic wellness model** through AYUSH Health and Wellness Centres to **reduce the disease burden and out of pocket expenditure**.
- To provide informed choice to the needy public through **co-location of AYUSH facilities at PHCs, CHCs and DHs resulting in medical pluralism**.
- To emphasize the **role of AYUSH in Public Health as per NHP 2017**.
- To **enhance and strengthen the infrastructure** of AYUSH educational institutions.

#### Salient features

- **Ayush:** It is an integral part of India's rich cultural and healthcare heritage. These systems offer unique perspectives on health and well-being, drawing from ancient wisdom and practices.



- **Background:** Before the launch of NAM in 2014, initiatives to promote Ayush were integrated with the National Rural Health Mission (NRHM).
- **Mandatory Components:**
  - **AYUSH Services:** Providing cost effective AYUSH Services by
    - ✓ upgrading **AYUSH Hospitals and Dispensaries**,
    - ✓ **colocation of AYUSH** facilities at Primary Health Centres (PHCs), Community Health Centres (CHCs), District Hospitals (DHs), and
    - ✓ **setting up of 10 bedded/ 30 bedded/ 50 bedded Integrated AYUSH Hospitals**,
    - ✓ Operationalizing a **network of AYUSH Health & Wellness Centres** to provide services based on holistic wellness model embedded in AYUSH principles.
      - **12,500 AYUSH Health and Wellness Centres** (now named as Ayushman Arogya Mandir) component of AYUSHMAN BHARAT will be implemented through NAM for a period of **5 years upto 2023-24**.

- **AYUSH Educational Institutions:**
  - ✓ To **upgrade** Government/Government Aided AYUSH UG as well as PG Educational Institutions.
  - ✓ To provide **financial assistance to the states for establishment of new AYUSH colleges** in the States where availability of AYUSH teaching institutions is inadequate in Government Sector,
- **Flexible Component:** Out of the total State envelop available, **25% of funds will be earmarked for flexible funds.**
- **Performance-based budgeting:** **20% of total allocation of Flexipool budget** may be allocated to good performing States/UTs in the same proportion in which main budget of NAM is allocated.
- **Monitoring and Evaluation:**
  - **NAM web portal** for submission of the State Annual Action Plans (SAAPs), Physical and financial progress reports of approved activities, submission of UCs, etc.
  - States/UTs are required to report the **physical and financial progress** on monthly, quarterly and yearly basis to the Ministry of Ayush.

### Key activities funded under Flexible components



**Yoga Wellness Centres:** Eligible for Rs. 1.00 Lakh as one time assistance for initial furnishing and recurring assistance of Rs.6.00 Lakhs per annum for manpower, maintenance etc.



**Tele-medicine, Sports Medicine through AYUSH, IEC activities, Incentive to frontline workers of AYUSH, Accreditation of AYUSH Healthcare facilities, etc.**

## 8.2. NUTRIENT BASED SUBSIDY (NBS) SCHEME

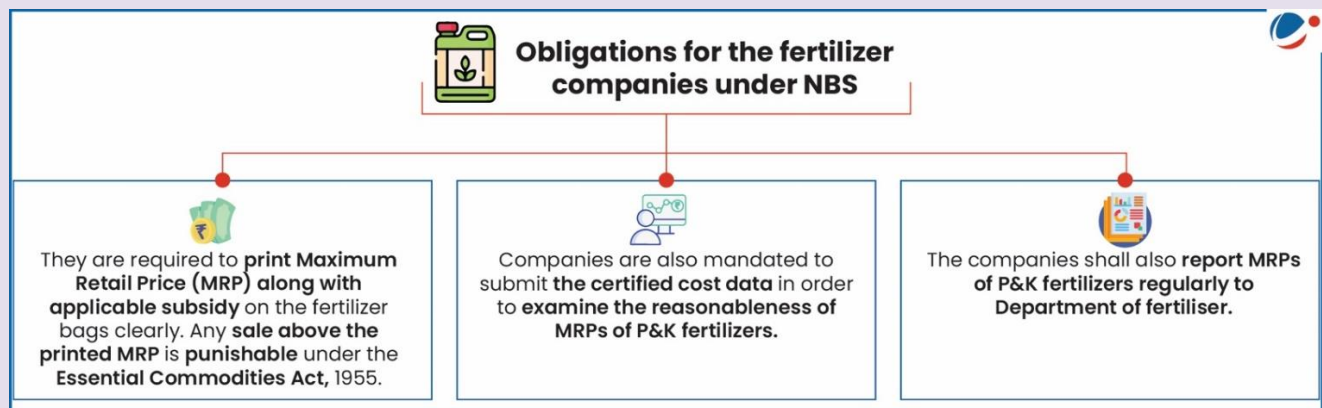
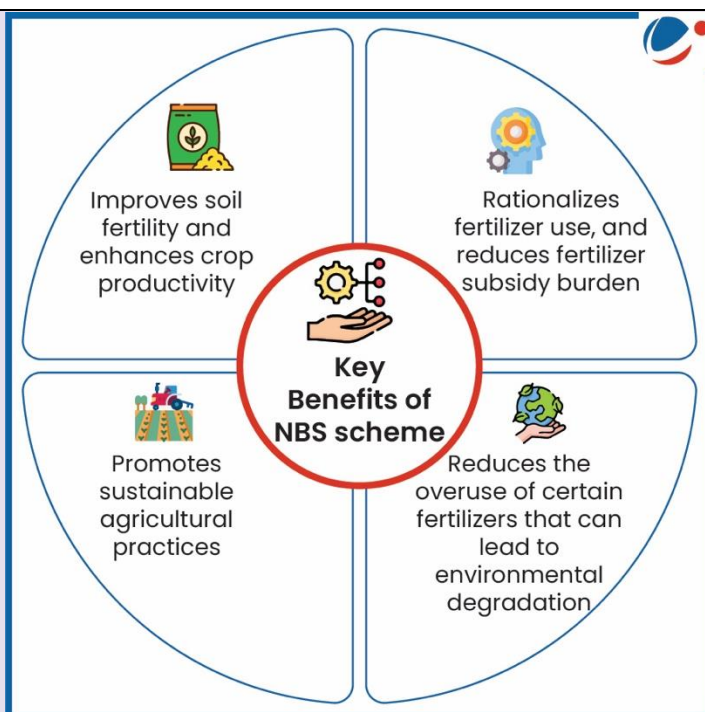
- **Ministry:** Ministry of Chemicals And Fertilizers
- **Purpose:** To provide fertilizers to the farmers at the subsidized prices.
- **Type:** Central Sector scheme
- **Inter- Ministerial Committee (IMC):** Recommends **per nutrient subsidy for 'N', 'P', 'K' and 'S'** before the start of the financial year.

**Objectives:** Ensuring **Nation's food security**, improving **agricultural productivity** and ensuring the **balanced application of fertilizers.**

### Salient features

- **Background:** In 1992, Centre **deregulated Phosphatic and Potassic (P&K) fertilizers**, causing their **prices to surge.**
  - Consequently, farmers tended to **overuse Nitrogen (N)**, whose price was still controlled. This created **imbalance in soil nutrients** (N, P, and K) leading to reduced soil productivity.
  - To address this, the **Department of Agriculture & Cooperation** introduced the **Concession Scheme for decontrolled P&K fertilizers on an ad-hoc basis** (from 1992 to 2010).
  - In 2010, the Government introduced NBS scheme.
- **NBS meaning:** Instead of providing subsidies on fertilizers as a whole, **subsidy** is provided based on the **contents of the nutrients** like nitrogen, phosphorus, potash, and sulphur, which are critical for plant growth.
- **NBS subsidy payment**
  - **An Inter- Ministerial Committee (IMC)** recommends **subsidy** before the start of the financial year.
  - **NBS is paid annually** on each nutrient **namely, 'N', 'P', 'K' and 'S'** based on the recommendation of IMC.
  - The IMC also recommends a **per tonne additional subsidy on fortified subsidized fertilizers carrying secondary** (other than 'S') **and micro-nutrients.**
- **Freight concession:** In addition to NBS, **freight for the movement and distribution** of the decontrolled fertilizers by **rail and road is being provided** to enable wider availability of fertilizers in the country.

- Subsidy for customized fertilizers:** Manufacturers of customized fertilizers and mixture fertilizers are **eligible to source subsidized fertilizers** from the manufacturers/importers.
  - There is **no separate subsidy** on sale of **customized fertilizers and mixture fertilizers**.
- Direct Benefit Transfer (DBT):** Subsidy is transferred to fertilizer companies through DBT, which is then passed on to farmers through reduced retail prices.
- Integrated Fertilizer Monitoring System (iFMS):** It captures end to end details of Fertilizer in terms of Production, Movement, availability, requirement, Sale, Subsidy Bill Generation to Subsidy payment to fertilizer companies.



### 8.3. ERRATA

1.1.3. **Pradhan Mantri Fasal Bima Yojana (PMFBY):** In the Quick Facts the 'Type' is mentioned as 'Centrally Sponsored Scheme'. The correct information is that the PMFBY Scheme is Central Sector Scheme.

22.1.2. National Social Assistance Programme:

- Indira Gandhi National Widow Pension Scheme (IGNWPS):** Pension Assistance is mentioned as 'BPL widows aged 40-59 years are entitled to a monthly pension of Rs. 200'. The Correct information is that 'BPL widows aged 40-79 years are entitled to a monthly pension of Rs. 300 and if they are 80 years and above the monthly pension is ₹ 500'.
  - Indira Gandhi National Disability Pension Scheme (IGNDPS):** Pension Assistance is mentioned as 'BPL persons aged 18-59 years with severe and multiple disabilities are entitled to a monthly pension of Rs. 200'. The correct information is that a BPL person aged 18-79 years with disability level of 80% and above is entitled for a monthly pension of ₹ 300 per month and if they are 80 years and above the monthly pension is ₹ 500'.

# 9. APPENDIX

## 9.1. CLASSICAL MUSIC OF INDIA

### Classical Music of India

Hindustani Music	Carnatic Music
◆ Primarily associated with northern states and <b>have foreign influence</b> .	◆ Primarily associated with southern states and does not <b>have foreign influence</b> .
◆ It has scope for Improvisation and it originated earlier than Carnatic.	◆ Rely on a <b>fixed pattern</b> of melody and rhythm.
◆ More importance to vocals than instruments and have several sub-styles of singing.	◆ Equal importance to both and has only one style of singing.
◆ It is <b>raga-based</b> and the core is Swara (Pitch).	◆ It is <b>Kriti-based</b> and the core is Laya (Rhythm).
◆ <b>Main instruments:</b> Sarangi, Tabla, Santoor, and Sitar.	◆ <b>Main instruments:</b> Mridangam, Veena, and Mandolin.

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**ADITYA SRIVASTAVA**



**ANIMESH PRADHAN**



**RUHANI**



**SRISHTI DABAS**



**मोहन लाल**



**ANMOL RATHORE**



**NAUSHEEN**



**AISHWARYAM PRAJAPATI**

## 9.2. CLASSICAL DANCES OF INDIA

### Classical Dances of India

#### Kathak, Uttar Pradesh

- Only classical dance **associated with Hindustani music**.
- Achieved its finest form **under Mughal rule**.
- Tatkar** is a foundational footwork in it.

#### Odissi, Odisha

- Started as part of temple service by **'maharis' or female temple servants**.
- It is based on themes of **Gita Govinda of Jayadeva**.
- The two basic postures of **Chowk and Tribhanga**.

#### Kathakali, Kerala

- Balarama Bharatam and Hastalakshana Deepika** are main source.
- Stories from the **Ramayana and Mahabharata** are used and starts in the evening.
- Actor's performance in play is **completely speechless**.

#### Mohiniyattam, Kerala

- Performed **exclusively by women**.
- Characterised by circular or spiral movement of all the limbs of the body.

#### Sattriya, Assam

- Introduced by the great Vaishnava saint, **Mahapurusha Sankaradeva** (15th century A.D).
- It is governed by strictly laid down principles in respect of **hastamudras, footworks, aharyas**, music etc.
- It is based on classical Ragas and Talas of devotional songs composed by Tulsidas, Kabir and Mirabai.

#### Manipuri, Manipur

- Mainly on Vaishnavism** theme, also Shaktism, and Shaivism are associated
- The **artist never establishes eye contact** with the audience.
- The **footwork is never audible**.

#### Kuchipudi, Andhra Pradesh

- Present **style** was conceived by **Siddhendra Yogi** a Vaishnava poet.
- A distinctive feature is the **execution on a brass plate**.
- It requires talent in **both singing and dancing**.

#### Bharatnatyam, Tamil Nadu

- Abhinaya Darpana** by Nandikesvara one of the main source.
- Known to be **ekaharya** (one dancer takes on many roles).
- First of India's traditional dances** to be refashioned as a theatre art

# UPSC TOPPERS PREPARATION APPROACH & STRATEGIES

*Insights from Toppers' Talk and Answer Scripts*



**Ishita Kishore**  
**Rank 1, 2022**

Ishita Kishore, the UPSC topper of 2022, serves as a remarkable inspiration for her unwavering determination and relentless efforts making her as a beacon of motivation for aspiring candidates. Through her methodical preparation approach, she emerged triumphant in the esteemed Civil Services Examination securing top rank. Ishita extensively relied on VisionIAS Mains test series to refine her answer writing abilities. To gain further insights into Ishita's answer writing approaches, kindly scan the QR code provided.

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# UPSC CSE TOPPERS 2022



**Waseem  
Ahmad Bhat**



Waseem Ahmad Bhat, an exceptional achiever who secured an All India Rank 7 in his third attempt in the UPSC Civil Services Examination 2022. He also achieved All India Rank 225 in his first attempt in 2020 and currently, he is training as an Assistant Commissioner Income Tax.

Waseem was a student of the **VisionIAS Foundation Course**, Batch in 2019.

Hailing from Doru Shahabad, Anantnag, Jammu & Kashmir, he completed his schooling in Anantnag and holds a degree in Civil Engineering from NIT Srinagar.

Waseem opted for **Anthropology** as his optional subject. His topper's talk covers vital topics such as preparing for the **changing pattern of Prelims**, essay writing and strategy, writing **quote-based essays**, utilizing topper's answer scripts for preparation, and **effective revision strategies**.

TOPPERS' TALK



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**Aniruddh  
Yadav**



Aniruddh Yadav, a remarkable achiever who secured an All India Rank 8 in his fourth attempt in the UPSC Civil Services Examination of 2022.

Aniruddh opted for **Anthropology** as his optional subject. He completed his dual degree course in Biochemical Engineering & Biotechnology from IIT Delhi.

His topper's talk covers crucial aspects such as **creating a schedule** and **subject-wise timetable**, honing answer writing skills through topic-based **practice**, **mastering the structure** and format of answers (Introduction, Body, Conclusion), **managing time effectively** during answer writing practice, and preparing **topic-wise notes** with the help of syllabus analysis and previous year questions.

TOPPERS' TALK



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**Siddharth  
Shukla**



Siddharth Shukla, belongs to Uttar Pradesh. He completed his BA in History (H) from Delhi University, which was also his optional subject.

He displayed exemplary resilience by appearing in the exam for the fourth attempt and secured AIR 18 in 2022.

The preparation strategy reflected in his talk and answer scripts include the strategy for Essay, **efficient use of PYQs**, **notes making**, among others.

Additionally, he has also focused upon **non-academic aspects** such as **stress management**, **habit formation**, and **role of meditation** which are critical for this examination.

TOPPERS' TALK



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**Anoushka  
Sharma**



Anoushka Sharma hailing from Madhya Pradesh completed her graduation from City University, New York with a bachelor's degree in Economics. She gained job experience through a three-month internship with the United Nations prior to taking the civil service examination.

She passed her CSE with AIR 20 in 2022 on her third attempt. **Economics** is her optional subject.

She has a very good command over ethics paper and she has shared her **insights on time management and strategy for attempting questions** in CSE Mains.

TOPPERS' TALK



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# UPSC CSE TOPPERS 2021



**Gamini Singla**



Gamini Singla, hailing from Punjab, completed her graduation in Computer Science Engineering from Punjab Engineering College Chandigarh. Thereafter, she honed her skills through a five-month internship as a finance analyst at JP Morgan.

She secured a remarkable All India Rank of 3 in the UPSC CSE 2021 in her second attempt with **Sociology** as her optional subject.

With her strategic **approach to GS Paper IV (Ethics) and Essay**, Gamini demonstrated her ability to **critically analyze ethical issues** and effectively express her thoughts in a coherent manner.

Her expertise in answer writing provided her with a competitive edge, allowing her to convey her knowledge and insights concisely.

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**Aishwarya Verma**



Aishwarya Verma hails from Madhya Pradesh. After graduating in Electrical Engineering, he opted for Civil Services as a career of choice.

He chose **Geography** as his optional subject and achieved an All-India Rank 4 in UPSC CSE 2021 in his fourth attempt.

Apart from the hard work, determination and resilience shown by Aishwarya, his success can also be attributed to his **short and enriched self-made notes, advanced answer writing skills**, and smart preparation strategy, including S&T.

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**Utkarsh Dwivedi**



Utkarsh Dwivedi, hailing from historic town of Ayodhya, Uttar Pradesh, a graduate in Mechanical Engineering from VIT Vellore, displayed resilience by attempting the exam for the third time and succeeding with remarkable achievement with the optional subject, **Political Science and International Relations**.

He displayed **exemplary command over Ethics Paper**, specially Case Studies and **quotation-based questions**. With his deep understanding of the demand of the UPSC Examination and excellent time management skills, he not only optimized his efforts, but also maximized his performance at all stages of the UPSC CSE.

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**Yaksh Chaudhary**



Yaksh Chaudhary, a resident of Amroha, Uttar Pradesh, through unwavering determination secured an All India Rank 6 in the prestigious exam on his third attempt in 2021. With his passion for Sociology, Yaksh opted for it as his optional subject and devised a winning strategy for his preparation.

Yaksh's **exceptional expertise in answer writing** and adeptness in attempting question papers during the mains exam provided him an edge. Moreover, his skill in crafting **well-structured diagrams** for General Studies, Ethics, and Sociology further enriched the quality and visual appeal of his responses. Yaksh's achievements serve as an inspiration to aspiring candidates nationwide, exemplifying the significance of perseverance, dedication, and strategic planning.

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# UPSC CSE TOPPERS 2020



**Shubham  
Kumar**

**1**  
RANK  
2020

Shubham Kumar, hailing from Katihar District in Bihar, completed his graduation in Civil Engineering from IIT Bombay. He achieved the remarkable feat of securing All India Rank 1 in the UPSC examination of 2020 in his third attempt.

His success can be attributed to his **unique approach and meticulous preparation**. Shubham emphasized the importance of **regular mock tests** for prelims and carefully analyzing previous years' UPSC prelims questions.

Shubham was a student of the **VisionIAS Foundation Course**.

He also **utilized topper's copies to enhance his skills in ethics answer writing** and emphasized the **use of diagrams and graphs** in GS papers.

TOPPERS' TALK



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**Praveen  
Kumar**

**7**  
RANK  
2020

Praveen Kumar, achieved an impressive All India Rank 07 in the UPSC Civil Services Examination 2020. Hailing from Jammui, Bihar, Praveen holds a degree in Civil Engineering from IIT Kanpur.

His remarkable journey includes clearing the GATE examination with an AIR 5 and securing AIR 3 in the Indian Engineering Services (IES) exam, all while working for the Indian Railway Service.

Praveen's toppers talk provides invaluable insights, covering motivations for pursuing the IAS, **effective booklists and sources for exam preparation, strategies for newspaper reading and content extraction, note-making techniques** for mains, and **utilizing flow charts and diagrams** in answers.

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**Jagrati  
Awasthi**

**2**  
RANK  
2020

Jagrati Awasthi, from Bhopal, Madhya Pradesh, completed her graduation in Electrical Engineering from NIT Bhopal. She gained two years of valuable work experience at BHEL.

With **Sociology** as her optional subject, she achieved an outstanding All India Rank of 2 in the UPSC examination of 2020.

She has emphasized the **importance of a well-structured daily routine** and shared a **detailed booklist** and recommended sources. Jagrati stressed the significance of thorough reading and utilizing previous years' questions to grasp the exam's demands.

Along with refined **note-making techniques**, she has provided insights on determining the optimal number of questions to attempt in the prelims and leveraging previous year's question papers for **Ethics case studies'** preparation.

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**Satyam  
Gandhi**

**10**  
RANK  
2020

Satyam Gandhi, an exceptional achiever, secured an All India Rank 10 in the UPSC Civil Services Examination 2020. Hailing from Bihar, Satyam graduated in Political Sciences (H) from Dayal Singh College, University of Delhi.

With **Political Science and International Relations** as his optional subject, he cleared the exam on his first attempt, displaying remarkable determination.

In addition, Satyam achieved an impressive AIR 242 in the NDA Exam. His toppers talk offers invaluable insights into **time management strategies** for a first attempt success, the **significance of flowcharts and diagrams** in mains answers, **effective essay structuring**, and his experience in obtaining a remarkable 201 marks in the interview.

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# Heartiest Congratulations

to all Successful Candidates



1  
AIR

**Aditya Srivastava**

**79**

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2  
AIR

**Animesh  
Pradhan**



5  
AIR

**Ruhani**



6  
AIR

**Srishti  
Dabas**



7  
AIR

**Anmol  
Rathore**



9  
AIR

**Nausheen**



10  
AIR

**Aishwaryam  
Prajapati**

**39**  
Selections

in **TOP 50**

in **CSE 2022**



1  
AIR

**Ishita  
Kishore**



2  
AIR

**Garima  
Lohia**



3  
AIR

**Uma  
Harathi N**

**1**  
AIR



**SHUBHAM KUMAR**  
**CIVIL SERVICES**  
**EXAMINATION 2020**



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